Stonestown Development Project

San Francisco Planning
Case No. **2021-012028ENV**

State Clearinghouse No. 2022040571

Public Draft EIR	*Draft EIR Publication Date:*	December 14, 2022
	Draft EIR Public Hearing Date:	February 9, 2023
	Draft EIR Public Comment Period:	December 14, 2022–February 13, 2023

Written comments should be sent to:

Florentina Craciun
Environmental Coordinator
49 South Van Ness Ave, Suite 1400
San Francisco, CA 94103
or CPC.Stonestown@sfgov.org

San Francisco Planning

Stonestown Development Project

San Francisco Planning
Case No. **2021-012028ENV**

State Clearinghouse No. 2022040571

Public Draft EIR	*Draft EIR Publication Date:*	December 14, 2022	*Written comments should be sent to:* **Florentina Craciun** **Environmental Coordinator** 49 South Van Ness Ave, Suite 1400 San Francisco, CA 94103 or CPC.Stonestown@sfgov.org
	Draft EIR Public Hearing Date:	February 9, 2023	
	Draft EIR Public Comment Period:	December 14, 2022-February 13, 2023	

San Francisco Planning

CONTENTS

Page

Summary S-1
S.1 Introduction S-1
S.2 Project Summary S-1
S.3 Summary of Impacts and Mitigation Measures S-1
S.4 Summary of Project Alternatives S-60
S.4.1 Alternative A: No Project Alternative S-60
S.4.2 Alternative B: Full Preservation Alternative S-61
S.4.3 Alternative C: Partial Preservation and Relocated Parking Alternative S-62
S.4.4 Alternative D: Code Compliant Alternative S-64
S.4.5 Alternative E: Reduced Density Alternative S-65
S.5 Comparison of the Stonestown Development Project and Alternatives S-67
S.6 Environmentally Superior Alternative S-85
S.7 Areas of Known Controversy and Issues to Be Resolved S-85

Chapter 1 Introduction 1-1
1.A Project Summary 1-1
1.B Purpose of This EIR 1-1
1.C Type of EIR 1-2
1.D CEQA Environmental Review Process 1-3
1.D.1 Notice of Preparation of an Environmental Impact Report 1-3
1.D.2 Scoping Comments 1-3
1.D.3 Draft EIR and Initial Study Public Review Process 1-9
1.D.4 Senate Bill 7 1-9
1.D.5 Final EIR and EIR Certification 1-11
1.D.6 Mitigation Monitoring and Reporting Program 1-12
1.E Organization of This EIR 1-12

Chapter 2 Project Description 2-1
2.A Project Overview 2-1
2.B Project Objectives 2-2
2.C Project Location and Existing Site Characteristics 2-3
2.C.1 Adjacent Land Uses 2-6
2.C.2 Zoning and General Plan Land Use Designations 2-7
2.D Project Characteristics and Components 2-7
2.D.1 Variant 2-7
2.D.2 Proposed Land Use Plan 2-13
2.D.3 Height 2-14
2.D.4 Design for Development 2-14
2.D.5 Open Space Improvements 2-18
2.D.6 Vehicle Parking 2-18
2.D.7 Bicycle Parking 2-20
2.D.8 Transportation and Circulation Plan 2-20
2.D.9 Infrastructure and Utilities 2-32

2.D.10 Sustainability Plan 2-40
2.E Project Construction 2-40
2.E.1 Construction Schedule 2-40
2.E.2 Soil Excavation, Grading, and Demolition 2-42
2.E.3 Construction Equipment and Staging 2-42
2.F Graphic Exhibits of Proposed Project 2-42
2.G Required Project Approvals 2-47
2.G.1 State and Regional Agencies 2-47
2.G.2 Local Agencies 2-47
Chapter 3 Environmental Setting, Impacts, and Mitigation Measures 3-1
Introduction to the Analysis 3-1
3.A Historic Architectural Resources 3.A-1
3.A.1 Introduction 3.A-1
3.A.2 Regulatory Framework 3.A-1
3.A.3 Environmental Setting 3.A-9
3.A.4 Impacts and Mitigation Measures 3.A-21
3.B Transportation and Circulation 3.B-1
3.B.1 Introduction 3.B-1
3.B.2 Environmental Setting 3.B-1
3.B.3 Regulatory Framework 3.B-17
3.B.4 Impacts and Mitigation Measures 3.B-22
3.C Noise and Vibration 3.C-1
3.C.1 Introduction 3.C-1
3.C.2 Environmental Setting 3.C-1
3.C.3 Regulatory Framework 3.C-10
3.C.4 Impacts and Mitigation Measures 3.C-16
3.D Air Quality 3.D-1
3.D.1 Introduction 3.D-1
3.D.2 Environmental Setting 3.D-1
3.D.3 Regulatory Framework 3.D-16
3.D.4 Impacts and Mitigation Measures 3.D-22
3.E Wind 3.E-1
3.E.1 Introduction 3.E-1
3.E.2 Environmental Setting 3.E-1
3.E.3 Regulatory Framework 3.E-3
3.E.4 Impacts and Mitigation Measures 3.E-6
3.F Shadow 3.F-1
3.F.1 Introduction 3.F-1
3.F.2 Environmental Setting 3.F-1
3.F.3 Regulatory Framework 3.F-3
3.F.4 Impacts and Mitigation Measures 3.F-4
3.G Utilities and Service Systems 3.G-1
3.G.1 Introduction 3.G-1
3.G.2 Environmental Setting 3.G-1
3.G.3 Regulatory Framework 3.G-6
3.G.4 Impacts and Mitigation Measures 3.G-10

Chapter 4 Other CEQA Considerations 4-1
4.A Growth Inducement 4-1
4.B Significant Unavoidable Environmental Effects of the Proposed Project or Variant 4-2
4.B.1 Historic Architectural Resources 4-2
4.B.2 Transportation and Circulation 4-3
4.B.3 Noise 4-3
4.B.4 Air Quality 4-3
4.B.5 Wind 4-3
4.C Significant Irreversible Changes 4-3
4.D Areas of Known Controversy and Issues to Be Resolved 4-5
Chapter 5 Alternatives 5-1
5.A Introduction 5-1
5.A.1 CEQA Requirements for Alternatives Analysis 5-1
5.A.2 Project Objectives 5-2
5.A.3 Summary of Significant Impacts 5-4
5.B Alternatives Screening and Selection 5-5
5.B.1 Strategies to Avoid or Lessen Significant Impacts 5-5
5.B.2 Alternatives Selected 5-10
5.C Alternatives Analysis 5-13
5.C.1 Alternative A: No Project Alternative 5-13
5.C.2 Alternative B: Full Preservation Alternative 5-15
5.C.3 Alternative C: Partial Preservation and Relocated Parking Alternative 5-26
5.C.4 Alternative D: Code Compliant Alternative 5-39
5.C.5 Alternative E: Reduced Density Alternative 5-52
5.D Comparison of Alternatives and Environmentally Superior Alternative 5-64
5.D.1 Alternatives Summary Comparison of Impacts and Ability to Meet Project Objectives 5-64
5.D.2 Environmentally Superior Alternative 5-86
5.E Alternatives Considered but Rejected 5-86
5.E.1 Alternatives Identified during Scoping 5-86
5.E.2 Alternatives Considered but Rejected 5-87
Chapter 6 Report Preparers 6-1
6.A San Francisco Planning Department 6-1
6.B Office of the City Attorney 6-1
6.C Environmental Consultants 6-1
6.D Project Sponsor 6-2
6.E Project Sponsor's Legal Counsel 6-3

Appendices

Appendix A Notice of Preparation and Comments Received
Appendix B Initial Study
Appendix C.1 Historic Resource Evaluation, Part I
Appendix C.2 Historic Resource Evaluation Response, Part I
Appendix C.3 Historic Resource Evaluation Response for 501 Buckingham Way, Part II
Appendix D.1 Travel Demand Memorandum
Appendix D.2 Stonestown Galleria Transit Analysis Memorandum
Appendix E Noise Technical Memorandum

Appendix F Air Quality and Health Risk Assessment Results
Appendix G Pedestrian Wind Study
Appendix H Shadow Analysis Report
Appendix I Water Supply Assessment

Figures

Figure 2-1 Project Location 2-4
Figure 2-2 Project Site and Adjacent Land Uses 2-5
Figure 2-3 Existing Zoning and Height and Bulk Districts on Project Site 2-8
Figure 2-4 Proposed Land Use Plan 2-9
Figure 2-5 Proposed Height Plan 2-10
Figure 2-6 Conceptual Axon Diagram of the Proposed Project and Variant 2-11
Figure 2-7 Proposed Site Sections through West and East Parcels 2-15
Figure 2-8 Proposed Site Sections along 19th Avenue 2-16
Figure 2-9 Proposed Site Sections through North and South Parcels 2-17
Figure 2-10 Proposed Open Space 2-19
Figure 2-11 Proposed Parking Plan 2-21
Figure 2-12 Proposed Street Plan 2-22
Figure 2-13 Proposed Intersection Controls 2-23
Figure 2-14 20th Avenue Illustrative Section A 2-24
Figure 2-15 20th Avenue Illustrative Section B 2-25
Figure 2-16 20th Avenue Illustrative Section C 2-26
Figure 2-17 20th Avenue Illustrative Section D 2-27
Figure 2-18 Buckingham Way North Illustrative Section 2-29
Figure 2-19 Winston Drive Illustrative Section A 2-30
Figure 2-20 Winston Drive Illustrative Section B 2-31
Figure 2-21 Proposed Pedestrian Network 2-33
Figure 2-22 Proposed Bicycle Network 2-34
Figure 2-23 Proposed Potable Water Plan 2-35
Figure 2-24 Proposed Non-Potable Water Plan (Centralized Treatment Option) 2-37
Figure 2-25 Proposed Non-Potable Water Plan (Decentralized Treatment Option) 2-38
Figure 2-26 Proposed Combined Sewer System Plan 2-39
Figure 2-27 Proposed Construction Phasing Plan 2-41
Figure 2-28 View of 20th Avenue and the Commons Open Space 2-43
Figure 2-29 View of Town Square Looking West 2-44
Figure 2-30 View of Winston Gateway from 19th Avenue and Winston Drive Looking West 2-45
Figure 2-31 View of the Greenway Looking East 2-46
Figure 3-1 Cumulative Projects Within 0.5-Mile of the Project Site 3-9
Figure 3.A-1 Potential Historic and Historic Resources In the Project Vicinity 3.A-10
Figure 3.A-2 Character-Defining Features Exterior View 3.A-18
Figure 3.A-3 Character-Defining Features Exterior View 3.A-19
Figure 3.A-4 Character-Defining Features Interior View 3.A-20
Figure 3.B-1 Project Study Area and Study Intersections 3.B-2
Figure 3.B-2 Existing Bicycling Network 3.B-11
Figure 3.B-3 Existing Transit Service 3.B-14
Figure 3.B-4 Project Sidewalks 3.B-26

Figure 3.B-5 Proposed Bicycle Circulation Plan 3.B-28
Figure 3.B-6 Proposed Bus Stop Relocations 3.B-29
Figure 3.B-7 Project Vehicle and Transit Trip Distribution 3.B-38
Figure 3.B-8 Vehicle Trip Assignment in the Project Vicinity 3.B-39
Figure 3.B-9 Public and Private Rights-of-Way 3.B-50
Figure 3.C-1 Noise Monitoring Locations, Sensitive Receptors, and Surrounding Land Use 3.C-7
Figure 3.D-1 Project Site, Air Pollutant Exposure Zone, and Sensitive Receptors 3.D-14
Figure 3.D-2 Average Daily Construction and Net New iNTERIM Operational ROG Emissions (Pounds/Day) 3.D-40
Figure 3.D-3 Average Daily Mitigated Construction and Net New iNTERIM Operational ROG Emissions (Pounds/Day) 3.D-51
Figure 3.E-1 Pedestrian Wind Comfort Conditions, Existing Conditions 3.E-4
Figure 3.E-2 Pedestrian Wind Hazard Conditions, Existing Conditions 3.E-5
Figure 3.E-3 Pedestrian Wind Hazard Conditions, Existing plus proposed project 3.E-15
Figure 3.E-4 Pedestrian Wind Hazard Conditions, Existing plus Variant 3.E-17
Figure 3.E-5 Pedestrian Wind Hazard Conditions, Cumulative 3.E-19
Figure 3.E-6 Pedestrian Wind Comfort Conditions, Existing plus proposed project 3.E-21
Figure 3.F-1 Publicly Accessible Open Spaces near the Project Site 3.F-2
Figure 3.F-2 Summer Solstice, June 21, 6:47 A.M. 3.F-8
Figure 3.F-3 Summer Solstice, June 21, 10 A.M. 3.F-9
Figure 3.F-4 Summer Solstice, June 21, 12 noon 3.F-10
Figure 3.F-5 Summer Solstice, June 21, 3 P.M. 3.F-11
Figure 3.F-6 Summer Solstice, June 21, 7:36 P.M. 3.F-12
Figure 3.F-7 Approximate Fall Equinox (Spring Similar), September 21, 7:57 A.M. 3.F-13
Figure 3.F-8 Approximate Fall Equinox (Spring Similar), September 21, 10 A.M. 3.F-14
Figure 3.F-9 Approximate Fall Equinox (Spring Similar), September 21, 12 noon 3.F-15
Figure 3.F-10 Approximate Fall Equinox (Spring Similar), September 21, 3 P.M. 3.F-16
Figure 3.F-11 Approximate Fall Equinox (Spring Similar), September 21, 6:10 P.M. 3.F-17
Figure 3.F-12 Winter Solstice, December 21, 8:20 A.M. 3.F-18
Figure 3.F-13 Winter Solstice, December 21, 10 A.M. 3.F-19
Figure 3.F-14 Winter Solstice, December 21, 12 noon 3.F-20
Figure 3.F-15 Winter Solstice, December 21, 3 P.M. 3.F-21
Figure 3.F-16 Winter Solstice, December 21, 3:55 P.M. 3.F-22
Figure 3.F-17 Existing/Proposed Project/Variant Shadow/Sun Chart for Rolph Nicol Jr. Playground and Junipero Serra Playground 3.F-23
Figure 3.F-18 Cumulative Shadow, Summer Solstice, June 21, 6:47 A.M. 3.F-27
Figure 3.F-19 Cumulative Shadow, Summer Solstice, June 21, 10 A.M. 3.F-28
Figure 3.F-20 Cumulative Shadow, Summer Solstice, June 21, 12 noon 3.F-29
Figure 3.F-21 Cumulative Shadow, Summer Solstice, June 21, 3 P.M. 3.F-30
Figure 3.F-22 Cumulative Shadow, Summer Solstice, June 21, 7:36 P.M. 3.F-31
Figure 3.F-23 Cumulative Shadow, Approximate Fall Equinox (Spring Similar), September 21, 7:57 A.M. 3.F-32
Figure 3.F-24 Cumulative Shadow, Approximate Fall Equinox (Spring Similar), September 21, 10 A.M. 3.F-33
Figure 3.F-25 Cumulative Shadow, Approximate Fall Equinox (Spring Similar), September 21, 12 noon 3.F-34

Figure 3.F-26 Cumulative Shadow, Approximate Fall Equinox (Spring Similar), September 21, 3 P.M. 3.F-35
Figure 3.F-27 Cumulative Shadow, Approximate Fall Equinox (Spring Similar), September 21, 6:10 P.M. 3.F-36
Figure 3.F-28 Cumulative Shadow, Winter Solstice, December 21, 8:20 A.M. 3.F-37
Figure 3.F-29 Cumulative Shadow, Winter Solstice, December 21, 10 A.M. 3.F-38
Figure 3.F-30 Cumulative Shadow, Winter Solstice, December 21, 12 noon 3.F-39
Figure 3.F-31 Cumulative Shadow, Winter Solstice, December 21, 3 P.M. 3.F-40
Figure 3.F-32 Cumulative Shadow, Winter Solstice, December 21, 3:55 P.M. 3.F-41
Figure 5-1 Alternative B: Full Preservation Alternative 5-16
Figure 5-2 Alternative C: Partial Preservation and Relocated Parking Alternative 5-27
Figure 5-3 Alternative D: Code Compliant Alternative 5-40
Figure 5-4 Alternative E: Reduced Density Alternative 5-53

Tables

Table S-1 Summary of Impacts of the Stonestown Development Project Identified in the EIR S-4
Table S-2 Summary of Impacts of the Stonestown Development Project Identified in the Initial Study S-40
Table S-3 Comparison of Environmental Impacts of the Proposed Project or Variant to Impacts of the Alternatives S-68
Table S-4 Summary of Ability of Alternatives to Address Project Objectives S-82
Table 1-1 Summary of Scoping Comments 1-4
Table 2-1 Project Characteristics (including the Variant) 2-12
Table 2-2 Proposed Project and Variant Parking Spaces 2-20
Table 2-3 Preliminary Estimated Construction Schedule 2-40
Table 3-1 Cumulative Projects within a 0.50-Mile Radius of the Project Site 3-7
Table 3.B-1 Roadway Facilities in the Study Area 3.B-4
Table 3.B-2 Vehicular Counts at Study Intersections, Weekday P.M. Peak Hour 3.B-5
Table 3.B-3 19th Avenue Collisions Rates (7/1/2018 to 6/30/2021) 3.B-6
Table 3.B-4 Walking Counts at Study Intersections – Weekday P.M. Peak Hour 3.B-8
Table 3.B-5 Bicycling Counts at Study Intersections– Weekday P.M. Peak Hour 3.B-12
Table 3.B-6 Existing Muni and SamTrans Service within Study Area 3.B-13
Table 3.B-7 Existing Daily Vehicle Miles Traveled per Capita 3.B-16
Table 3.B-8 Person-Trip Generation Estimates by Land Use 3.B-33
Table 3.B-9 Mode Split by Land Use 3.B-33
Table 3.B-10 Weekday P.M. Peak Hour Person-Trip Generation Estimates by Mode and Land Use 3.B-34
Table 3.B-11 Internal Trip Capture Reduction and Total External Transit and Vehicle Trips 3.B-36
Table 3.B-12 Project or Variant Vehicle and Transit Trip Distribution 3.B-37
Table 3.B-13 Freight and Passenger Loading Demand by Land Use 3.B-41
Table 3.B-14 Construction Activity by Phase 3.B-51
Table 3.B-15 Local Transit Delay Analysis Results by Line and Direction 3.B-66
Table 3.B-16 SamTrans Transit Delay Analysis Results by Line and Direction 3.B-67
Table 3.B-17 Freight and Passenger Loading Demand by Parcel for Proposed Project 3.B-73
Table 3.B-18 Freight and Passenger Loading Demand by Parcel for the Variant 3.B-74
Table 3.B-19 Cumulative Local Transit Delay Analysis Results by Line and Direction 3.B-80

Table 3.B-20 Project and Variant Contributions to Cumulative Impacts 3.B-81
Table 3.B-21 SamTrans Cumulative Transit Delay Analysis Results by Line and Direction 3.B-81
Table 3.B-22 Project and Variant Contributions to Cumulative Impacts 3.B-81
Table 3.B-23 Cumulative (2050) Daily Vehicle Miles Traveled per Capita 3.B-84
Table 3.C-1 Representative Environmental Noise Levels 3.C-2
Table 3.C-2 Existing Noise-Sensitive Receptors within 900 Feet of the Project Site 3.C-5
Table 3.C-3 Existing Noise Environment in the Project Vicinity 3.C-8
Table 3.C-4 Vibration-Sensitive Structures Adjacent to Project Boundary 3.C-10
Table 3.C-5 Summary of Noise Level Effects 3.C-11
Table 3.C-6 Federal Transit Administration Construction Noise Impact Guidelines 3.C-12
Table 3.C-7 Federal Transit Administration General Assessment Criteria for Groundborne Vibration 3.C-12
Table 3.C-8 Vibration Guidelines for Potential Damage to Structures 3.C-13
Table 3.C-9 San Francisco Land Use Compatibility Chart for Community Noise 3.C-15
Table 3.C-10 Preliminary Estimated Construction Schedule 3.C-17
Table 3.C-11 Maximum Noise Levels from Construction Equipment 3.C-22
Table 3.C-12 Exterior Noise at Offsite Sensitive Uses from Project Construction – Phase 1 ..... 3.C-25
Table 3.C-13 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 2 ..... 3.C-26
Table 3.C-14 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 3 ..... 3.C-27
Table 3.C-15 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 4 ..... 3.C-28
Table 3.C-16 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 5 ..... 3.C-29
Table 3.C-17 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 6 ..... 3.C-30
Table 3.C-18 Nighttime Noise Levels from Construction by Phase 3.C-34
Table 3.C-19 Roadway Noise Levels with Project Construction Truck and Worker Traffic in the Vicinity of the Project 3.C-35
Table 3.C-20 Vibration Levels for Construction Equipment 3.C-37
Table 3.C-21 P.M. Peak Hour Traffic Noise Level increases in the Vicinity of the Project Site 3.C-45
Table 3.C-22 P.M. Peak Hour Traffic Noise Level increases of the Variant in the Vicinity of the Project 3.C-48
Table 3.C-23 P.M. Peak Hour Traffic Noise Level Increases in the Vicinity of the Project under Cumulative Conditions with Either the Proposed Project or Variant 3.C-54
Table 3.D-1 Summary of San Francisco Air Quality Monitoring Data (2017–2021) 3.D-3
Table 3.D-2 State and Federal Ambient Air Quality Standards and Attainment Status 3.D-4
Table 3.D-3 Air Quality Index Statistics for the San Francisco Bay Area Air Basin 3.D-9
Table 3.D-4 Annual Average Ambient Concentrations of Carcinogenic Toxic Air Contaminants Measured at Air District Monitoring Station in 2019, 10 Arkansas Street, San Francisco 3.D-11
Table 3.D-5 Criteria Air Pollutant Significance Thresholds 3.D-24
Table 3.D-6 Excess Cancer Risk and $PM_{2.5}$ Concentration Thresholds 3.D-32
Table 3.D-7 Proposed Project and Variant Existing Condition Emissions 3.D-38
Table 3.D-8 Construction and Net New Interim Operational Emissions by Year for the Proposed Project and Variant 3.D-39
Table 3.D-9 Mitigated Construction and Net New Interim Operational Emissions by Year for the Proposed Project and Variant 3.D-50
Table 3.D-10 Net New Operational Emissions for the Proposed Project at Buildout 3.D-53
Table 3.D-11 Net New Operational Emissions for the Variant at Buildout 3.D-54

Table 3.D-12 ROG Emission Rate for Proposed Project and Variant Compared to Air District Screening Table Emissions Rate 3.D-55
Table 3.D-13 Net New Mitigated Operational Emissions for the Proposed Project at Buildout 3.D-58
Table 3.D-14 Net New Mitigated Operational Emissions for the Variant at Buildout 3.D-59
Table 3.D-15 Lifetime Excess Cancer Risk for the Proposed Project and Variant 3.D-63
Table 3.D-16 Annual Average $PM_{2.5}$ Concentrations for the Proposed Project and Variant 3.D-64
Table 3.D-17 Mitigated Lifetime Excess Cancer Risk for the Proposed Project and Variant 3.D-68
Table 3.D-18 Mitigated Annual Average $PM_{2.5}$ Concentrations for the Proposed Project and Variant ... 3.D-69
Table 3.D-19 Project Consistency with Applicable Control Measures of the 2017 Clean Air Plan 3.D-75
Table 3.E-20 Existing Conditions, Existing plus Proposed Project, Existing plus Variant, and Cumulative Wind Comfort and Hazard Results 3.E-12
Table 3.E-21 Exceedances of Pedestrian Wind Hazard Criterion (Wind Hazard Criterion = 36 mph) at Full Build Out 3.E-13
Table 3.E-22 Existing Conditions, Existing plus Proposed Project, Existing plus Variant, and Cumulative Wind Results for Bicycle Lanes 3.E-22
Table 3.F-23 Rolph Nicol Jr. Playground Observation Data 3.F-24
Table 3.F-24 Junipero Serra Playground Observation Data 3.F-25
Table 3.G-1 Local Class II and III Landfills 3.G-25
Table 5-1 Characteristics of the Proposed Project, Variant, and Alternatives 5-11
Table 5-2 Land Use Characteristics and Estimated Vehicle Trips, Alternative B: Full Preservation Alternative 5-19
Table 5-3 Land Use Characteristics and Estimated Vehicle Trips, Alternative C: Partial Preservation and Relocated Parking Alternative 5-30
Table 5-4 Queue Lengths at Winston Drive/Buckingham Way Intersection 5-31
Table 5-5 Local Project-Level Transit Delay Analysis Results by Line and Direction for Alternative C: Partial Preservation and Alternative Parking Location Alternative 5-32
Table 5-6 Land Use Characteristics and Estimated Vehicle Trips, Alternative D: Code Compliant Alternative 5-42
Table 5-7 Mitigated Construction and Net New Interim Operational Emissions by Year for Alternative D 5-47
Table 5-8 Net New Mitigated Operational Emissions for Alternative D at Buildout 5-49
Table 5-9 Land Use Characteristics and Estimated Vehicle Trips, Alternative E: Reduced Density 5-55
Table 5-10 Mitigated Construction and Net New Interim Operational Emissions by Year for Alternative E 5-60
Table 5-11 Net New Mitigated Operational Emissions for Alternative E at Buildout 5-61
Table 5-12 Comparison of Environmental Impacts of the Proposed Project or Variant to Impacts of the Alternatives 5-65
Table 5-13 Summary of Ability of Alternatives to Address Project Objectives 5-78

ABBREVIATIONS

Abbreviation	Definition
µg/m^3	microgram per cubic meter
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACMs	asbestos-containing materials
ADA	Americans with Disabilities Act
ADRP	archeological data recovery plan
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AMP	archeological monitoring plan
APEZ	Air Pollutant Exposure Zone
ARR	archeological resources report
ASA	archeological sensitivity analysis
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AST	above-ground storage tank
AVO	average vehicle occupancy
AWSS	auxiliary water supply system
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BART	Bay Area Rapid Transit
Bay-Delta	San Francisco Bay/Sacramento–San Joaquin Delta
BERD	Built Environment Resource Directory
bgs	below ground surface
BMPs	best management practices
BTU	British thermal units
C-2	Community Business
CA DPR	California Department of Pesticide Regulation
CAIS	Chinese American International School
cal	calibrated
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CAL Green	California Green Building Standards

Abbreviation	Definition
CalMod	California Modernization Program
Cal/OSHA	State Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
COVID-19	novel coronavirus 2019 disease
CPUC	California Public Utilities Commission
CRPIP	cultural resources public interpretation plan
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
DEHP	Bis (2-ethylhexyl) phthalate
DLOP	Driveway and Loading Operations Plan
DPM	diesel particulate matter
DSG	Design Standards and Guidelines
du	dwelling unit
EDD	Employment Development Department
EFWS	emergency firefighting water system
EIR	environmental impact report
EMFAC	EMission FACtors model
EMFAC2021	EMission FACtors model version 2021
EP	Environmental Planning

Abbreviation	Definition
ERO	environmental review officer
ESA	Environmental Science Associates
EV	electric vehicle
FARR	final archeological resources report
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	geographic information system
gsf	gross square feet
HHDT	heavy heavy-duty truck
HI	Hazard Index
HOT	high-occupancy toll
HOV	high-occupancy vehicle
hp	horsepower
HPC	Historic Preservation Commission
HRA	health risk assessment
HRER	Historic Resource Evaluation Response
HVAC	heating, ventilating, and air conditioning
in/sec	Inches per second
kWh	kilowatt-hours
L10/L50/ L90	statistical description of what sound level is exceeded over some fraction (10, 50, or 90 percent) of a given observation period (i.e., L10, L50, L90)
L_{dn}	day-night noise level
L_{eq}	average or constant sound level
L_{max}	maximum, instantaneous noise level registered during a measurement period
LBP	lead-based paint
LDA	light-duty auto
LDT1	light-duty truck 1
LDT2	light-duty truck 2
LEED	Leadership in Energy and Environmental Design
LHDT	light heavy-duty truck
LT-#	long-term noise monitoring location

Abbreviation	Definition
LTS	less than significant
LTSM	less than significant with mitigation
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MDV	medium-density vehicle
MEI	maximally exposed individual
MERV	Minimum Efficiency Reporting Value
mgd	million gallons per day
MHDT	medium heavy-duty truck
MLD	Most Likely Descendant
$MMTCO_2e$	million metric tons of carbon dioxide equivalents
mph	miles per hour
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
NA	not applicable
NAHC	Native American Heritage Commission
NCHRP	National Cooperative Highway Research Program
ng/m^3	nanograms per cubic meter
NI	no impact
NO_2	nitrogen dioxide
NOP	notice of preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PAR	preliminary archeological review
PCB	polychlorinated biphenyl
PCE	perchloroethene
PDO	Property Damages Only
PG&E	Pacific Gas & Electric
PM	particulate matter

Abbreviation	Definition
PM_{10}	respirable particulate matter 10 microns or less in diameter
$PM_{2.5}$	fine particulate matter 2.5 microns or less in diameter
ppb	parts per billion
pphm	parts per hundred million
ppm	parts per million
PPV	peak particle velocity
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
RH-1(D)	Residential-House, One Family Detached
RHNA	Regional Housing Need Allocation
RM-1	Residential-Mixed, Low Density
ROG	reactive organic gas
ROSE	Recreation and Open Space Element
ROW	right-of-way
SamTrans	San Mateo County Transit District
SB	Senate Bill
SF-CHAMP	San Francisco Chained Activity Modeling Process
SFMTA	San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SFSU	San Francisco State University
SLCP	Short-Lived Climate Pollutant
SO_2	sulfur dioxide
ST-#	short-term noise monitoring location
SUD	Special Use District
SUM	significant and unavoidable impact with mitigation
SVWC	Spring Valley Water Company
TAC	toxic air contaminant
TAZ	transportation analysis zone
TCMP	Train Control Modernization Program
TDM	transportation demand management
TeNS	technical noise supplement
TNC	Transportation Network Company
TRUs	transport refrigeration units

Abbreviation	Definition
UA	United Artists
UCERF3	Uniform California Earthquake Rupture Forecast
USCS	U.S. Coast Survey
USDOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USC&GS	U.S. Coast and Geodetic Survey
USGS	U.S. Geological Survey
UST	underground storage tank
UTM	Universal Transverse Mercator
UTM X	eastward-measured distance
UTM Y	northward-measured distance
UWMP	urban water management plan
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compound

SUMMARY

S.1 Introduction

This document is a draft environmental impact report (draft EIR) for the Stonestown Development Project (proposed project). This chapter of the draft EIR provides a summary of the proposed project, a summary of anticipated environmental impacts that could result with implementation of the proposed project and identified mitigation measures, a summary of alternatives including identification of the environmentally superior alternative, and areas of controversy to be resolved.

S.2 Project Summary

The project sponsor, Brookfield Properties Development, proposes to redevelop the approximately 27 acres of surface parking, which would include the demolition of four structures on site, surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use community. Under the proposed project, 710,000 square feet of the existing mall would remain, with changes to the façade, entrances, and exits. Overall, the proposed project would include up to 2,930 residential units; up to 160,000 square feet of new retail sales and service use space; up to 200,000 square feet of non-retail sales and service use; up to 100,000 square feet of hotel use; approximately 53,000 square feet of institutional uses; approximately 4,250 parking spaces; and approximately 6 acres of open space. The proposed project would also include transportation, circulation, and utility infrastructure improvements, including upgrading the existing utility infrastructure to provide the proposed uses with potable water, recycled water, emergency water, wastewater collection, stormwater collection and treatment, electricity, and communications. One variant is also analyzed in this draft EIR. The variant would develop the 0.8-acre Authentic Church parcel adjacent to the project site and would include approximately 150 additional residential units; 10,000 additional square feet of institutional use; and 200 additional parking spaces in a partially below-grade parking structure.

S.3 Summary of Impacts and Mitigation Measures

This draft EIR analyzes the potential environmental effects of implementation of the Stonestown Development Project. The initial study (Appendix B) of this draft EIR concluded that the proposed project or variant would have no impacts, less-than-significant impacts, or less-than-significant-with-mitigation impacts related to the following environmental resource areas: land use and land use planning, population and housing, cultural resources (archeological resources and human remains), tribal cultural resources, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources, agriculture and forestry resources, and wildfire. Discussion and analysis of impacts related to these resource areas are presented in the initial study.

The initial study found that the proposed project or variant could result in significant impacts associated with the resource topic areas listed below. Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this draft EIR presents detailed discussion and analysis of these resource topic areas.

- Section 3.A, Historic Architectural Resources
- Section 3.B, Transportation and Circulation
- Section 3.C, Noise and Vibration
- Section 3.D, Air Quality
- Section 3.E, Wind
- Section 3.F, Shadow
- Section 3.G, Utilities and Service Systems

Table S-1, p. S-4, and **Table S-2**, p. S-40, summarize the potential impacts of the proposed project or variant, identify the significance of each impact, and present the full text of mitigation measures that would avoid or reduce significant impacts and would be required to be implemented if the proposed project is approved. Impacts and mitigation measures presented in Chapter 3 of this draft EIR are summarized in Table S-1. Impacts and mitigation measures presented in the initial study are summarized in Table S-2.

As indicated in Table S-1 and discussed in detail in Chapter 3, the analysis conducted for this draft EIR determined that the proposed project or variant would result in significant and unavoidable impacts in the following areas, even with implementation of feasible mitigation measures.

HISTORIC ARCHITECTURAL RESOURCES

- The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code. (Impact CR-1)

TRANSPORTATION AND CIRCULATION

- Operation of the of the variant would substantially delay public transit. (Impact TR-4)
- The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably. (Impact C-TR-3)

NOISE

- Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Impact NO-1)
- Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Impact C-NO-1)

AIR QUALITY

- During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-1)
- During operation, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the project region is in nonattainment under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-2)

WIND

- During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact WI-1)
- At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact WI-2)
- The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact C-WI-1)

Table S-1 Summary of Impacts of the Stonestown Development Project Identified in the EIR

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
EIR SECTION 3.A, HISTORIC ARCHITECTURAL RESOURCES			
Impact CR-1: The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code.	S	**Mitigation Measure M-CR-1a: Documentation of Historic Resources.** Prior to issuance of demolition permits for the historic resource, the project sponsor shall undertake Historic American Buildings Survey/Historic American Landscapes Survey/Historic American Engineering Record-like (HABS/HALS/HAER-like) documentation of the historic resource's features. The documentation shall be undertaken by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History, History, or Architecture (as appropriate) to prepare written and photographic documentation of the UA Stonestown Twin Theater. The specific scope of the documentation shall be reviewed and approved by the planning department, but shall include the following elements: • *Measured Drawings* – A set of measured drawings shall be prepared that depict the existing size, scale, and dimension of the historic resource. Planning department staff will accept the original architectural drawings or an as-built set of architectural drawings (e.g., plans, sections, elevations). Planning department staff will assist the consultant in determining the appropriate level of measured drawings. • *HABS/HALS/HAER-like Photographs* – Either HABS/HALS/HAER standard large-format or digital photography shall be used. The scope of the digital photographs shall be reviewed by planning department staff for concurrence, and all digital photography shall be conducted according to the latest National Park Service (NPS) standards. The photography shall be undertaken by a qualified professional with demonstrated experience in HABS/HALS/HAER photography. Photograph views for the data set shall include contextual views; views of all side of the resource; oblique views of the resource; and detail views of character-defining features including certain interior spaces. All views shall be referenced on a photographic key. This photographic key shall be on a map of the property and shall show the photograph number with an arrow to indicate the direction of the view. Historical photographs shall also be collected, reproduced, and included in the data set. • *Written Historical and Descriptive Data* – A written historical narrative and report shall be prepared in accordance with the HABS/HALS/HAER Historical Report	SUM

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Guidelines. The report shall follow an outline format that begins with a statement of significance supported by the development of the architectural/engineering and historical context in which the historic resource was constructed. The report shall also include a physical description and bibliographic information. • *Video Recordation* – Video recordation shall be undertaken before demolition or site permits are issued for the historic resource. The project sponsor shall undertake video documentation of the affected historic resource and its setting. The documentation shall be conducted by a professional videographer, one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations Part 61). The documentation shall include detailed information—using visuals in combination with narration—about the materials, construction methods, current condition, historic use, and historic context of the historic resource. • *Softcover Book* – A print-on-demand softcover book shall be produced that includes the content from previous historical reports, historical photographs, documentation photography, measured drawings, and field notes. The Print-on-Demand book shall be made available to the public for distribution. The project sponsor shall transmit the above documentation to the History Room of the San Francisco Public Library, San Francisco Architectural Heritage, California Historical Society, the planning department, the Northwest Information Center, nearby neighborhood or community group repositories that request copies, and no more than two additional repositories as directed by the planning department. The documentation scope will determine the requested documentation type for each facility, and the project sponsor will conduct outreach to identify other interested groups. Drafts of all documentation will be reviewed and approved by the planning department's staff before any demolition permit is granted for the affected historic resource. **Mitigation Measure M-CR-1b: Salvage Plan.** The project sponsor shall make a good faith effort to salvage character-defining features or materials of historical interest to be utilized as part of the interpretative program or to be donated to community or art groups. A salvage plan, which may include materials of historical interest if community	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		or arts groups expressed an interest in such items and commit to relocating them at their own expense, will be reviewed and approved by the planning department's staff before any removal of character-defining features. Planning department preservation staff will coordinate with the project sponsor on implementation of the salvage plan and the project sponsor will provide documentation of the completion of the salvage plan prior to issuance of occupancy permits. **Mitigation Measure M-CR-1c: Public Interpretive Program.** The project sponsor shall facilitate the development of an interpretive program focused on the history of the project site, including an overview of the site history and Native American land acknowledgement, and its identified historic resource. The interpretive program should be developed and implemented by a qualified preservation professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner. The primary goal of the interpretive program is to educate the public about the historic resource and lost character defining features within broader historical, social, and physical landscape contexts. This interpretive plan shall be subject to review and approval by planning department staff. The proposal shall include the proposed format and the publicly accessible location of the interpretive content, as well as high-quality graphics and written narratives. The proposal prepared by the qualified consultant describing the general parameters of the interpretive program shall be approved by planning department staff prior to issuance of demolition permits for the historic resource. The detailed content, media, and other characteristics of such an interpretive program including installation and maintenance schedules for all interpretative components shall be approved by planning department staff prior to issuance of a Final Certificate of Occupancy for the building to be constructed at the location of the historic resource and/or immediately adjacent public open space. The interpretative program shall include but not be limited to the installation of permanent on-site interpretive displays in publicly accessible locations, including the exterior of a building. Historical and current photographs, including some of the photographs required by the Documentation of Historic Resources Mitigation Measure, may be used to illustrate the site's history. Features salvaged from the theater as part of the salvage plan should be considered in the design of the interpretative program.	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact CR-2: The proposed project or variant would not cause a substantial adverse change in the significance of an adjacent historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code.	LTS	No mitigation required.	N/A
Impact C-CR-1: The proposed project or variant, in combination with cumulative projects, would not result in demolition and/or alteration of historical resources, as defined in CEQA Guidelines section 15064.5.	LTS	No mitigation required.	N/A
		EIR SECTION 3.B, TRANSPORTATION AND CIRCULATION	
Impact TR-1: Construction of the proposed project or variant would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit.	S	**Mitigation Measure M-TR-1: Construction Coordination Plan.** The project sponsor of the proposed project or variant shall prepare a construction coordination plan (plan or plans) for each construction phase as shown in Figure 2-20 and Table 3.B-14 in the EIR, including to address proposed project or variant construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water, electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized. The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan	LTSM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary. Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to: • Blue Book section 3: Traffic Lane Closure Requirements • Blue Book section 5: Sidewalk Closures • Blue Book section 7: Transit Operations • Blue Book section 9: Bicycle Routes • Public Works Code section 2.4.20(b): Contractor Parking Plans • Public Works Code section 724: Temporary Occupancy of Street • Public Works Subdivision Code • Public Works Subdivision Regulations Each plan shall also address how the proposed construction activities within the project or variant site would be coordinated with construction activities within Caltrans' right-of-way.	
Impact TR-2: Operation of the proposed project or variant would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact TR-3: Operation of the proposed project or variant would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.	LTS	No mitigation required.	N/A
Impact TR-4: Operation of the proposed project would not substantially delay public transit; operation of the variant would substantially delay public transit.	S	**Mitigation Measures M-TR-4a Reduce Project Vehicle Trips.** The project sponsor shall be responsible for implementing transportation demand management (TDM) measures in a City-approved TDM Plan to limit the number of project- or variant-generated vehicle trips to a maximum of 90 percent of the EIR-estimated values of the sum of the phases of project or variant development in the weekday p.m. peak hour (performance standard). *Monitoring and Reporting Plan.* The project sponsor shall retain a qualified transportation consultant approved by the San Francisco Municipal Transportation Agency (SFMTA) or the planning department to begin monitoring vehicle trips in accordance with the approved monitoring and reporting plan. The monitoring shall include counts of the number of vehicles entering and exiting the project site on internal streets at the site boundaries on 19th Street/Winston Drive, 19th Avenue/Street A, 20th Avenue/Eucalyptus Drive, Winston Drive/Buckingham Way, and 20th Avenue/Winston Drive. The counts shall be consistent with the data collection period (e.g., days of week, time of day, months of the year) documented in Appendix C.1 of the EIR. The counts will subtract the baseline (no-project) vehicle trip estimate documented in Appendix C.1 of the EIR to establish the project or variant vehicle trip operational (i.e., not construction-related) contribution to the counts. The project sponsor shall begin monitoring when Phase 1 operations overlaps with any construction, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions. The project sponsor shall submit a monitoring and reporting plan to the planning department and SFMTA for review within 30 days of the monitoring, or with TDM Plan monitoring and reporting in a manner consistent with the planning commission's TDM	SUM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		program standards. Thereafter, annual monitoring and reporting plans shall be submitted (referred to as "reporting periods") until three consecutive reporting periods show that the fully built project or variant (i.e., after six phases of the project or variant have been fully constructed) meets the performance standard, or until expiration of the project's development agreement, whichever is earlier. *Adjustments.* If the planning department finds that two consecutive reporting periods demonstrate that the project or variant fails to meet the stated performance standard, the project sponsor shall select and implement additional TDM measures to reduce the number of project- or variant-generated vehicle trips to meet the performance standard. These measures could include expansion of measures already included in the project's or variant's TDM Plan, other measures identified in the planning commission's TDM program standards Appendix A (as such appendix may be amended by the planning department from time to time) that have not yet been included in the project's or variant's approved TDM Plan, or, at the project sponsor's discretion, other measures not included in the planning commission's TDM program standards Appendix A that the planning department and project sponsor agree are likely to reduce peak period driving trips. If additional TDM measures are required because the project or variant fails to meet the stated performance standard for any development phase for two consecutive report periods, the project sponsor shall have 30 months to implement such measures and demonstrate through monitoring a reduction in vehicle trips to meet the performance standard. If the performance standard is not met within 30 months, the project sponsor shall submit to the planning department and SFMTA a memorandum documenting proposed methods of enhancing the effectiveness of the TDM measures and/or additional feasible TDM measures that would be implemented by the project sponsor, along with annual monitoring of the project-or variant-generated vehicle trips to demonstrate their effectiveness in meeting the performance standard until the term of the TDM Plan ends as set forth below. Project sponsor shall have the right to request and pay for a transportation study by a qualified transportation consultant approved by SFMTA or the planning department to confirm the requested measures are effective to achieve the performance standard.	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		The monitoring and reporting plan may be modified by the planning department in consultation with SFMTA to account for transit route or transportation network changes, or major changes to the development program. The modification of the monitoring and reporting plan, however, shall not change the performance standard set forth in this mitigation measure. *Term.* The monitoring and reporting plan shall be terminated upon the earlier of (i) expiration of the project's or variant's development agreement, or (ii) three consecutive reporting periods showing that the fully built project or variant has met the performance standard. However, the project sponsor shall continue to be subject to compliance reporting in a manner consistent the planning commission's TDM program standards. **Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure.** The project sponsor of the project or variant shall implement transit travel time reduction measure. Such a measure shall include the preparation and implementation of a coordination and transit signal priority plan to address northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way, subject to San Francisco Municipal Transportation Agency (SFMTA) review and approval.	
Impact TR-5: Operation of the proposed project or variant would not cause substantial additional VMT or substantially induce automobile travel.	LTS	No mitigation required.	N/A
Impact TR-6: Operation of the proposed project or variant may result in a loading deficit and secondary effects may create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit.	S	**Mitigation Measure M-TR-6: Develop a Driveway and Loading Operations Plan (DLOP).** The project sponsor of the project or variant shall prepare and submit a DLOP to the planning department in accordance with any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects), in consultation with the San Francisco Municipal Transportation Agency (SFMTA). The purpose of the DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is	LTSM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project- or variant-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes. The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's or variant's off-street facility and blocking any portion of any private street or public right-of-way during project or variant operations for: 1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and 2. For at least three 24-hour periods in any consecutive seven-day period. The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase of project construction. A project phase may not begin construction until its DLOP has received Planning approval. The DLOP may also include, but not limited to, the following measures to reduce potential conflicts: • **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue. Where no alternative location exists, design driveway or loading dock entrance with sufficient storage for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks. • **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time. • **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock. • **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility. • **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business. The DLOP shall be implemented by the project sponsor of the project or variant in accordance with any guidelines issued by the department pursuant to planning code section 155(u).	
Impact C-TR-1: The proposed project or variant, in combination with cumulative projects, would not result in significant construction-related transportation impacts.	S	Mitigation Measure M-TR-1 would apply.	LTSM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact C-TR-2: The proposed project or variant, in combination with cumulative projects, would not create potentially hazardous conditions and would not interfere with accessibility.	LTS	No mitigation required.	N/A
Impact C-TR-3: The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably.	S	Mitigation Measures M-TR-4a and M-TR-4b would apply. **Mitigation Measure M-C-TR-3: Signal Coordination and Transit Signal Priority along 19th Avenue.** The project sponsor of the proposed project or variant shall pay a fair-share contribution for SFMTA to design and install up to two additional closed circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation]. The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).	SUM
Impact C-TR-4: The proposed project or variant, in combination with cumulative projects, would not cause substantial additional vehicle miles traveled or substantially induce automobile travel.	LTS	No mitigation required.	N/A
Impact C-TR-5: The proposed project or variant, in combination with cumulative projects, would not result in cumulative loading impacts.	S	Mitigation Measure M-TR-6 would apply.	LTSM

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
EIR SECTION 3.C, NOISE AND VIBRATION			
Impact NO-1: Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	S	**Mitigation Measure M-NO-1: Construction Noise Control.** The project sponsor shall submit a project-specific construction noise control plan to the environmental review officer (ERO) for approval prior to issuance of any demolition or building permit. The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include measures to reduce construction noise with the target to meet performance standards of 90 dBA 1-hour L_{eq}, 10 dBA above the ambient noise level, nor an interior level of 45 dBA during nighttime hours at noise sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels, and motels). The project sponsor shall ensure that requirements of the construction noise control plan are included in contract specifications. The construction noise control plan shall include specific measures to reduce nighttime construction noise. The construction noise control plan shall include the following measures to the degree feasible, or other equally effective measures, to reduce construction noise levels: • Use "quiet" models of air compressors and other stationary equipment where such technology exists; • Use construction equipment with lower noise emission ratings to the extent feasible, particularly for air compressors; • Prohibit the idling of inactive construction equipment for more than 5 minutes; • Muffle and maintain all equipment used on site. All internal combustion engine driven equipment shall be fitted with mufflers that are in good working condition; • Position stationary noise sources, such as temporary generators and pumps, as far from nearby receptors to the extent feasible, within temporary enclosures and shielded by barriers (which could reduce construction noise by as much as 5 dB) or other measures, to the extent feasible; • Avoid placing stationary noise-generating equipment (e.g., generators, compressors) within noise-sensitive buffer areas (as determined by the acoustical consultant) immediately adjacent to neighbors;	SUM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		• Enclose or shield stationary noise sources from neighboring noise-sensitive properties with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas, if feasible; • Install temporary barriers, barrier-backed sound curtains, and/or acoustical panels around working powered impact equipment and, if necessary, around the construction area perimeter. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise; • Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be "quiet" gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, which could achieve a reduction of 5 dBA. Quieter equipment shall be used when feasible, such as drills rather than impact equipment; The construction noise control plan shall include specific measures to reduce nighttime construction noise. In addition, the construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures, and monitoring of construction noise levels: • Designate a construction manager; • Notify neighboring noise-sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating or nighttime noise activities (i.e., activities that may generate noise levels greater than 90 dBA at noise sensitive receptors) about the estimated duration of the activity; • Post a sign on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction; • Implement a procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		• Develop a list of measures for responding to and tracking complaints pertaining to construction noise; such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and • Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation), during high-intensity construction activities, and during nighttime construction to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures. Selection of the monitoring locations shall be coordinated between the planning department, construction contractor and, if warranted, affected residential property owners. The program shall be set up to alert the construction manager or other designated person(s) when noise levels exceed allowable limits (10 dBA above established ambient levels). If noise levels are found to exceed applicable noise limits due to construction-related activities, corrective action shall be taken, such as moving specific construction activities if feasible, fixing faulty or poorly operating equipment, and installing portable barriers.	
Impact NO-2: Construction truck traffic from the proposed project or variant would not cause a substantial temporary or periodic increase in ambient noise levels along access streets in the project vicinity.	LTS	No mitigation required.	N/A
Impact NO-3: Construction of the proposed project or variant would not generate excessive groundborne vibration or groundborne noise levels.	LTS	No mitigation required.	N/A
Impact NO-4: Operation of stationary equipment on the project site from the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or	S	**Mitigation Measure M-NO-4: Noise Analysis and Attenuation.** Prior to approval of the first building permit, the project sponsor shall submit documentation to the Environmental Review Officer (ERO), demonstrating with reasonable certainty that the proposed approach to the construction of the various building types fixed mechanical equipment (such as heating, ventilation and air conditioning [HVAC] equipment) meets the noise limits specified in section 2909 of the noise ordinance (i.e., a 5 dB increase	LTSM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.		above the ambient noise level at the property plane for noise from residential uses or an 8 dB increase above the ambient noise level at the property plane for noise from commercial or industrial uses; and interior noise limits of 55 dBA and 45 dBA for daytime and nighttime hours inside any sleeping or living room in a nearby dwelling unit on a residential property assuming windows open, respectively). Acoustical treatments required to meet the noise ordinance may include but are not limited to: • Enclosing noise-generating mechanical equipment; • Installing relatively quiet models of air handlers, exhaust fans, and other mechanical equipment; • Using mufflers or silencers on equipment exhaust fans; • Orienting or shielding equipment to protect noise sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat) to the greatest extent feasible; • Increasing the distance between noise-generating equipment and noise-sensitive receptors; and/or • Placing barriers around the equipment to facilitate the attenuation of noise. *Emergency Generators.* Prior to approval of the first building permit, the property owner shall submit documentation to the ERO, demonstrating with reasonable certainty that project generator(s) do not exceed 75 dBA at the property plane or generator(s) meet the interior noise limits of noise ordinance section 2909(d) (55 dBA and 45 dBA for daytime and nighttime hours assuming windows open, respectively). Acoustical treatments may include, but are not limited to: • Enclosing generator(s); • Installing relatively quiet model generator(s); • Orienting or shielding generator(s) to protect noise-sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat) to the greatest extent feasible; • Increasing the distance between generator(s) and noise-sensitive receptors; and/or • Placing barriers around generator(s) to facilitate the attenuation of noise.	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		In addition, all project generator(s) shall be tested only between the hours of 7 a.m. and 8 p.m.	
Impact NO-5: Events that include outdoor amplified sound would result in substantial temporary or periodic increases in ambient noise levels in the immediate project vicinity, or expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	S	**Mitigation Measure M-NO-5: Noise Limits for Outdoor Amplified Sound.** • The special-event sponsor shall comply with noise controls and restrictions in the amplified sound event permit. • Speaker systems shall be directed away from the nearest residences to the degree feasible. • Amplified sound equipment use shall be restricted to the hours between 9 a.m. and 10 p.m., unless an amplified sound permit is received from the Entertainment Commission that would outline a different operation window. • Outdoor speaker systems shall be operated such that amplified event noise levels do not exceed 80 dBA at a distance of 100 feet from the equipment or as otherwise required by the permit. • The special-event sponsor shall notify residents within 300 feet of the project site in advance of each special event. The notice shall include the phone number of a contact for noise complaints. • The special-event sponsor shall have a contact person available to respond to noise complaints, monitor noise levels to confirm compliance with permit requirements, and adjust noise levels (if needed).	LTSM
Impact NO-6: Proposed project or variant traffic and loading operations would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact C-NO-1: Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards	S	Mitigation Measure M-NO-1 would apply.	SUM
Impact C-NO-2: Construction of the proposed project or variant, in combination with cumulative projects, would not result in the generation of excessive groundborne vibration or groundborne noise levels during construction.	LTS	No mitigation required.	N/A
Impact C-NO-3: Operation of the stationary equipment on the project site from the proposed project or variant, in combination with cumulative projects, would not result in the generation of a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact C-NO-4: Proposed project or variant traffic and loading operations, in combination with cumulative projects, would not cause a substantial permanent increase in ambient noise levels in the project vicinity.	LTS	No mitigation required.	N/A
EIR SECTION 3.D, AIR QUALITY			
Impact AQ-1: During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	S	Mitigation Measure M TR-4a would apply. **Mitigation Measure M-AQ-1a: Clean Off-Road Construction Equipment.** The project sponsor shall comply with the following: 1. *Engine Requirements.* All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the duration of construction shall meet the following requirements: a. All portable engines, such as generators, shall be electric. If grid electricity is not available, propane or natural gas generators shall be used if feasible. b. Electric engines shall be used for all equipment that is readily available as plug-in or battery-electric equipment, to the maximum extent feasible during each construction phase and activity. Portable equipment shall be powered by grid electricity if available. Electric equipment may include, but is not limited to, concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, and cement and mortar mixers, pressure washers, and pumps. c. Engines that cannot be electrically powered must meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board (air board) Tier 4 Final off-road emission standards, except as provided for below. Exceptions to the requirement for engines that meet Tier 4 Final emission standards shall include only select pieces of specialty equipment, such as those specified below, for which such engines may not be available at the start of a construction phase requiring that equipment. Exceptions may be granted for	SUM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		certain pieces of equipment; examples include bore/drill rigs required for grading/shoring/excavation and for cranes required for building construction. To qualify for an exception, the Project sponsor shall provide the Environmental Review Officer (ERO) with evidence supporting its conclusion that equipment meeting Tier 4 standards is not commercially available and shall use the next cleanest piece of off-road equipment. d. Engines shall be fueled with alternative fuels, including natural gas, propane, hydrogen fuel cell, and electricity, as commercially available and to the maximum extent feasible during each construction phase and activity. e. Any other best technology available in the future may be included in the construction emissions minimization plan as substitutions for the above items a–d, provided that the project sponsor submits documentation to the planning department demonstrating that (1) the technology would result in comparable reactive organic gases (ROG) and diesel particulate matter (DPM) emissions reductions and (2) it would not increase other pollutant emissions or exacerbate other impacts, such as noise. This may include new alternative fuels or engine technology for off-road equipment (such as electric or hydrogen fuel cell equipment) that is not available as of 2022. f. The project sponsor shall require the idling time for off-road equipment be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road equipment. Documentation shall be provided to equipment operators in multiple languages (e.g., English, Spanish, Chinese) to remind operators of the 2-minute idling limit. If the majority of the project sponsor's construction staff speak a language other than these, then the documentation shall be provided in that language as well. g. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications. 2. *Waivers.* The ERO may waive the electric engine requirement of above items 1.a and 1.b if electric power is limited or infeasible at the project site. If the ERO grants the waiver, the contractor must submit documentation that the equipment used for onsite power generation meets the requirements of items 1.c and 1.d.	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		a. The ERO may waive the equipment requirements of item 1.c if: (1) the contractor does not have the required type of equipment within its current available inventory or has ordered such equipment at least 60 days in advance and has made a good faith effort to lease or rent such equipment but it is not available; (2) a particular piece of Tier 4 final off-road equipment is technically or financially infeasible; (3) the equipment would not produce desired emissions reduction due to expected operating modes; or (4) there is a compelling emergency need to use off-road equipment that is not Tier 4 Final compliant. If the ERO grants the waiver, the contractor must use the next cleanest piece of off-road equipment that is commercially available, or another alternative that results in comparable reductions of ROG and DPM emissions. b. The ERO may waive the alternative fuel requirements of item 1.d if alternative fuels are not commercially available or the use of alternative fuels would negatively affect construction performance, void equipment warranties, or would result in additional ROG or DPM emissions compared to traditional fuels. For purposes of this mitigation measure, "not commercially available" is defined as either: (1) not being used for other large-scale construction projects in the Bay Area occurring at the same time; (2) cannot be obtained without significant delays to critical-path timing of construction; or (3) not available within the larger Bay Area region. The project sponsor must provide sufficient documentation to the ERO when seeking any waiver described above. 3. *Construction Emissions Minimization Plan.* Before starting onsite construction activities, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the ERO for review and approval. The Plan shall state, in reasonable detail, how the contractor will meet the requirements of item 1. a. The Plan shall include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for every construction phase. The description may include but is not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, expected fuel type (e.g., diesel, gasoline, electric, propane, natural gas), and hours of operation.	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		b. The project sponsor shall make the Plan available to the public for review onsite during working hours. The contractor shall post a notice summarizing the Plan. The notice shall also state that the public may ask to inspect the Plan for the project at any time during working hours and shall explain how to request to inspect the Plan. The project sponsor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way. 4. *Reporting.* After start of construction activities, the project sponsor shall submit annual reports to the ERO documenting compliance with the Plan. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities, including the start and end dates and duration of each construction phase, and the specific information required in the Plan. The annual reports shall also include documentation supporting the use of waivers if the engine requirements of items 1.a, 1.b, 1.c, and/or 1.d cannot be met. 5. *Certification Statement and Onsite Requirements.* Prior to commencing construction activities, the project sponsor shall certify that all applicable requirements of the Plan have been incorporated into contract specifications. **Mitigation Measure AQ-1b: Super-Compliant VOC Architectural Coatings during Construction.** The project sponsor shall use "super-compliant" volatile organic compound (VOC) architectural coatings during construction for all interior and exterior spaces and shall include this requirement on plans submitted for review to the planning department. The project sponsor shall submit a signed certification statement that this requirement has been incorporated into contract specifications. "Super-Compliant" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113, which requires a limit of 10 grams VOC per liter (http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings). **Mitigation Measure M-AQ-1c: Clean On-Road Construction Trucks.** The project sponsor shall comply with the following for all phases of construction: 1. *Engine Requirements.*	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		a. All on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks, concrete trucks, and vendor trucks) shall be model year 2018 or newer. b. Use alternative fuels as commercially available, such as natural gas, propane, hydrogen fuel cell, and electric vehicles or other fuels where evidence suggests that ROG emissions would be reduced compared to conventional diesel fuel. c. Any other best technology available in the future (i.e., not available as of 2022) may be used in lieu of or in addition to the above items 1.a and 1.b, provided that the project sponsor submits documentation to the ERO demonstrating that (1) the technology would result in comparable ROG emissions reductions and (2) that such measures would not increase other pollutant emissions or result in other impacts, such as noise. This may include new alternative fuels for on-road trucks. d. Require the idling time for on-road vehicles be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for on-road vehicles. Documentation shall be provided to truck drivers in multiple languages (e.g., English, Spanish, Chinese) to remind operators of the 2-minute idling limit. If the majority of the project sponsor's construction staff speak a language other than these, then the documentation shall be provided in that language as well. 2. *Waivers.* The ERO may waive the alternative fuel requirements of item 1.b if alternative fuels are not commercially available or the use of alternative fuels is not technologically feasible, would void truck warranties, or would result in additional ROG or DPM emissions compared to traditional fuels. For purposes of this mitigation measure, "not commercially available" shall be defined as: (1) not being used for other large-scale construction projects in the Bay Area occurring at the same time; (2) cannot be obtained without significant delays to critical-path timing of construction; or (3) not available within the larger Bay Area region. 3. *Construction Emissions Minimization Plan.* The Construction Emissions Minimization Plan (Plan), as described in Mitigation Measure M-AQ-1a item 3 above, shall include a	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		description of each general category of on-road trucks required for every construction phase. The description shall also specify the engine model years and fuel type being used (e.g., diesel, electric, natural gas). 4. *Reporting.* The report, as described in Mitigation Measure M-AQ-1a item 4, shall include documentation of compliance with the Plan regarding on-road trucks, in addition to off-road construction equipment. The report shall include documentation supporting the use of waivers if engine requirements under Item 1.a or 1.b cannot be met. 5. *Certification Statement and Onsite Requirements.* The Certification Statement, as described in Mitigation Measure M-AQ-1a item 5 above, shall apply to all applicable requirements for on-road trucks. **Mitigation Measure M-AQ-1d: Super-Compliant VOC Architectural Coatings during Operation.** The project sponsor or vertical developer shall include in all building rules and/or building operation plans (as applicable, depending on the parcel) a requirement that all future interior and exterior spaces be repainted only with "super-compliant" VOC (i.e., ROG) architectural coatings beyond Bay Area Air Quality Management District (air district) requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). "Super-compliant" coatings refer to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113, which requires a standard of 10 grams VOC per liter or less (http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings). The project sponsor or vertical developer shall submit documentation to the ERO demonstrating compliance with this measure. **Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators.** To reduce emissions of ROG and toxic air contaminants (TACs) associated with operation of the proposed project, the project applicant shall implement the following measures. These features shall be submitted to the ERO for review and approval, and shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City prior to the issuance of any building permits:	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		1. Permanent stationary emergency generators installed on-site shall have engines that meet or exceed California Air Resources Board Tier 4 Off-Road Compression Ignition Engine Standards (California Code of Regulations Title 13, Section 2423). If the California Air Resources Board adopts future emissions standards that exceed the Tier 4 requirement, the emissions standards resulting in the lowest ROG and DPM emissions shall apply. 2. As non-diesel-fueled emergency generator technology becomes readily available and cost effective in the future, and subject to the review and approval of the City fire department for safety purposes, non-diesel-fueled generators shall be installed in new buildings, provided that alternative fuels used in generators, such as biodiesel, renewable diesel, natural gas, or other biofuels or other non-diesel emergency power systems, are demonstrated to reduce ROG and DPM emissions compared to diesel fuel. 3. For each new diesel backup generator permit submitted to air district for the proposed project, the project applicant shall submit the anticipated location and engine specifications to the planning department ERO for review and approval prior to issuance of a permit for the generator. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment, and any future replacement of the diesel backup generators must be consistent with these emissions specifications. The operator of the facility at which the generator is located shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and shall provide this information for review to the planning department within three months of requesting such information. **Mitigation Measure M-AQ-1f: Promote Use of Green Consumer Products.** To reduce ROG emissions associated with the project, the project sponsor shall provide education for residential and commercial tenants concerning green consumer products. Prior to receipt of any certificate of occupancy, the project sponsor shall develop electronic correspondence to be distributed by email annually and upon any new lease signing to residential and/or commercial tenants of each building on the project site that encourages the purchase of consumer products that generate lower than typical VOC	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		emissions. The correspondence shall encourage environmentally preferable purchasing. **Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction.** The project sponsor shall incorporate the following measures into the project design and construction contracts (as applicable) to reduce ROG emissions associated with operational trucks, along with the potential health risk caused by exposure to toxic air contaminants. These features shall be submitted to the planning department ERO for review and approval prior to the issuance of building permits and shall be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. Emissions from project-related diesel trucks shall be reduced by implementing the following measures, if feasible: 1. Equip all truck delivery bays with electrical hook-ups for diesel trucks at loading docks to accommodate plug-in electric truck transport refrigeration units (TRUs) or auxiliary power units during project operations. 2. Provide a notice on the lease to all new tenants or owners of the project or any portion thereof requiring any truck-intensive uses on the site, such as large grocery stores or distribution facilities with their own fleet of trucks, to use TRUs and auxiliary power units that are electric plug-in capable and trucks that use advanced exhaust technology (e.g., hybrid) or alternative fuels. 3. Encourage the use of trucks equipped with diesel TRUs to meet U.S. Environmental Protection Agency Tier 4 emission standards. 4. Prohibit TRUs from operating at loading docks for more than thirty minutes, and post signs at each loading dock presenting this TRU limit. 5. Prohibit trucks from idling for more than two minutes, and post "no idling" signs at the site entry point, at all loading locations, and throughout the project site. **Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure.** Prior to the issuance of a certificate of occupancy for any project structure with parking, the project applicant shall demonstrate compliance with the 2022 California Green Building Standards (CALGreen Code) Tier 2 voluntary electric vehicle (EV) charging requirements or the mandatory requirements of the most recently adopted version of the City building code, whichever is more stringent. The installation of all EV charging	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		equipment shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City. **Mitigation Measure M-AQ-1I: Electric Landscaping Equipment.** To reduce ROG emissions associated with the project, the project sponsor shall use only electric landscaping equipment. No landscaping equipment powered by gasoline, diesel, propane, or other fossil fuels shall be used. The project applicant shall incorporate this requirement into the project design and tenant contracts (as applicable). **Mitigation Measure M-AQ-1j: Offset Remaining ROG Emissions.** The project sponsor, with the oversight of the planning department, shall implement one or more of the following measures to achieve annual reductions or offsets of ROG emissions within the San Francisco Bay Area Air Basin equal to the amount required to reduce total project construction plus operational ROG emissions below 10 tons per year (54 pounds per day on average) after implementation of all other identified mitigation measures as approved through the documentation submitted to the planning department as stipulated in Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a. Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: 0.2 tons for the project and 0.0 tons for the variant in 2030; 2.6 tons for the project and 3.0 tons for the variant in 2031; and 4.6 tons for the project and 5.0 tons for the variant in 2032 and each year thereafter. Alternatively, the project sponsor may submit documentation to the planning department demonstrating that the project or variant has not exceeded the ROG emissions performance standard of 10 tons per year (or 54 pounds per day) for each year or that the required emissions offset is lower than that calculated herein. Such documentation would include a recalculation of the project's ROG emissions from all sources (including the emissions reductions achieved by the project or mitigation measures) using methods generally consistent with those used in the EIR. The following identifies potential mechanisms to offset ROG emissions that exceed the 10 tons per year performance standard. 1. *Directly fund or implement a specific offset project within the San Francisco Bay Area Air Basin.* Emission reduction projects shall occur in the following locations in order of priority to the extent available and feasible: (1) at the project site; (2) off-site within the neighborhood surrounding the project site; (3) within the city and county	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		of San Francisco; and (4) within the San Francisco Bay Area Air Basin. Any offsite emission reduction projects are subject to the approval by the City. Such projects could include strategies and control measures such as zero-emission trucks, upgrading locomotives with cleaner engines, replacing existing diesel stationary and standby engines with Tier 4 diesel or cleaner engines, or expanding or installing energy storage systems (e.g., batteries, fuel cells) to replace stationary sources of pollution. Prior to implementing the offset project, it must be approved by the planning department, as consistent with the requirements of this mitigation measure. 2. *Pay mitigation offset fees* to an independent third-party approved by the planning department. The mitigation offset fee, shall fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. Emission reduction projects shall occur in the following locations in order of priority to the extent available and feasible: (1) at the project site; (2) off-site within the neighborhood surrounding the project site; (3) within the city and county of San Francisco, and (4) within the San Francisco Bay Area Air Basin. The fee will be determined through consultation between the project sponsor and the entity and be based on the type of projects available at the time of the payment. 3. *Memorandum of Understanding.* When paying a mitigation offset fee under item 2, the project sponsor shall enter into a memorandum of understanding (MOU) with the entity or other binding agreement. The MOU or agreement shall include details regarding the funds to be paid, the administrative fee, and the timing of the emissions reductions project(s). Acceptance of this fee by the entity shall serve as acknowledgment and a commitment to implement an emissions reduction project(s) within a time frame agreed upon in the MOU or agreement based on the type of project(s) selected, after receipt of the mitigation fee to achieve the emissions reduction objectives specified above. 4. *Waivers.* The ERO may waive the requirement to achieve annual reductions or offsets of ROG equal to the amount required to reduce emissions below 10 tons per year (54 pounds per day) after implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a and if: (1) sufficient ROG emission offset projects within the San Francisco Bay Area Air Basin, as described in item 1, are not available to reduce	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		ROG emissions below 54 pounds per day when they occur during proposed project buildout; or (2) the offset projects or the mitigation offset fees, as described in item 3, are determined to be infeasible as defined under CEQA. 5. *Offset Verification Report.* The project sponsor shall prepare an Annual Offset Verification Report (Report) as follows: a. *Offset Project Documentation:* Any offset project implemented, or offset fee paid, must result in ROG emission reductions within the San Francisco Bay Area Air Basin that are real, permanent, quantifiable, enforceable, and surplus as defined in the Bay Area Air Quality Management District Regulation 2, Rule 2: New Source Review, sections 2-3-301, 2-2-211, 2-2-603, and 2-2-605. The project sponsor shall certify that each specific emission reduction offset project meets these requirements. Should the project sponsor choose to recalculate the project's annual ROG emissions and ROG offset requirement to achieve the performance standard of 10 tons per year (54 pounds per day on average), the documentation shall quantify the ROG reduction(s) achieved by all offset projects to demonstrate that the gap between the project's mitigated emissions and the significance threshold of 10 tons per year of ROG has been met through the offset project(s). For this option, each annual Offset Verification Report shall demonstrate, based on substantial evidence, that the project has reduced annual ROG emissions below the thresholds of significance of 10 tons per year. The requirement to fund an offset project(s) described in item 1 above and/or to pay mitigation offset fees through the MOU described in items 2 and 3 above shall terminate if the project sponsor is able to demonstrate that the project's operational emissions are less than 10 tons per year (54 pounds per day). b. *Report Submittal.* The report shall be prepared by the project sponsor and submitted to the San Francisco Planning Department for review and verification. Documentation of offset projects and mitigation offset payments, as applicable, shall be provided to the San Francisco Planning Department for review and approval prior to the start of construction for the first year when project ROG emissions are predicted to exceed 10 tons per year, as set forth above If the San Francisco Planning Department determines the report is reasonably accurate, it shall approve the report; otherwise, the planning department shall identify	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		deficiencies and direct the project sponsor to correct and re-submit the report for approval.	
Impact AQ-2: During operation, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the project region is in nonattainment under an applicable federal, state, or regional ambient air quality standard	S	Mitigation Measures M-AQ-1d through M-AQ-1j and M-TR-4a would apply.	SUM
Impact AQ-3: The proposed project or variant would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial pollutant concentrations.	S	Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i and M-TR-4a would apply.	LTSM
Impact AQ-4: The proposed project or variant would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	No mitigation required.	N/A
Impact AQ-5: The proposed project or variant would conflict with or obstruct implementation of the 2017 Clean Air Plan.	S	Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a would apply.	LTSM

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact C-AQ-1: The proposed project or variant, in combination with cumulative projects, would result in exposure of sensitive receptors to substantial levels of fine particulate matter (PM2.5) and toxic air contaminants.	S	Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i and M-TR-4a would apply.	LTSM
Impact C-AQ-2: The proposed project or variant, in combination with cumulative projects, would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people.	LTS	No mitigation required.	N/A
EIR SECTION 3.E, WIND			
Impact WI-1: During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use.	S	**Mitigation Measure M-WI-1a: Wind Safety Plan.** For the active construction areas, the wind consultant may identify those construction sites that would be especially exposed to strong winds. The consultant may recommend construction site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. The objective of these precautions shall be to minimize risks and prevent injuries to workers and the public from stacked materials, such as shingles and sheets of plywood, that can be picked up and carried by strong winds, and from temporary signage, siding or roofing, or light structures that could be detached and carried by the wind. As part of construction site safety planning, the project sponsor shall require, as a condition of contracts, that contractors consider all potential wind-related risks to the public from their construction activities and shall develop a wind safety plan to address and control all such risks related to their work. The safety plan could include but not be limited to measures such as: • Warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs;	SUM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		• Identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds; and • Installing semi-permanent windscreens or temporary landscaping features (such as shrubs in large planters) that provide some wind sheltering and direct pedestrian and bicycle traffic around hazardous areas. **Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet.** Before design review approval, if any, but no later than prior to obtaining a building permit for any project or variant building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant approved by the planning department. The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26 mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[1] The proposed building(s) shall be wind tunnel tested using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site: 1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows. 2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-	

[1] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered: 3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger. If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply. **Mitigation Measure M-WI-1c: Maintenance Plan for Landscaping off the Project Site and Wind Baffling Measures in the Public Right-of-Way.** If it is determined infeasible to fully mitigate wind hazards via massing and wind baffling measures on the subject building pursuant to Mitigation Measure M-WI-1b, the project sponsor shall prepare a maintenance plan for review and approval by the planning department to ensure maintenance of the features required pursuant to Mitigation Measure M-WI-1b in perpetuity. The maintenance plan for landscaping or wind baffling measures in the public right-of-way shall also be reviewed and approved by public works. **Mitigation Measure M-WI-1d: Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in the Private Right-of-Way.** If it is determined infeasible to fully mitigate wind hazards via massing and wind baffling measures on the subject building pursuant to Mitigation Measure M-WI-1b, the project sponsor shall prepare a maintenance plan for review and approval by the planning department to ensure	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		maintenance of the features required pursuant to Mitigation Measure M-WI-1b in perpetuity.	
Impact WI-2: At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use.	S	Mitigation Measures M-WI-1b to M-WI-1d would apply.	SUM
Impact C-WI-1: The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use.	S	Mitigation Measures M-WI-1b to M-WI-1d would apply.	SUM
EIR SECTION 3.F, SHADOW			
Impact SH-1: The proposed project or variant would create new shadow; however, this new shadow would not substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	LTS	No mitigation required.	N/A
Impact C-SH-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative shadow impact.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
EIR SECTION 3.G, UTILITIES AND SERVICE SYSTEMS			
Impact UT-1: The proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects.	LTS	No mitigation required.	N/A
Impact UT-2: SFPUC determined that during normal years sufficient water supplies are available to serve the proposed project or variant and reasonably foreseeable future development in normal years. In single and multiple dry years the SFPUC may develop new or expanded water supply facilities to address shortfalls if the Bay Delta Plan Amendment is implemented, but this would occur with or without the proposed project or variant. The SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact UT-3: The proposed project or variant would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the projected demand in addition to the provider's existing commitments and would not require construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.	LTS	No mitigation required.	N/A
Impact UT-4: The proposed project or variant would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and would comply with federal, state, and local management and reduction statutes and regulations related to solid waste	LTS	No mitigation required.	N/A
Impact C-UT-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to the wastewater and stormwater collection and treatment system.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact C-UT-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to solid waste facilities and regulations.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Table S-2 Summary of Impacts of the Stonestown Development Project Identified in the Initial Study

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
INITIAL STUDY SECTION E.1, LAND USE AND PLANNING			
Impact LU-1: The proposed project or variant would not physically divide an established community.	LTS	No mitigation required.	N/A
Impact LU-2: The proposed project or variant would not cause a significant physical environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	No mitigation required.	N/A
Impact C-LU-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to land use and planning.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.2, POPULATION AND HOUSING			
Impact PH-1: Construction of the proposed project or variant would not induce substantial unplanned population growth, either directly or indirectly.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact PH-2: Operation of the proposed project or variant would not induce substantial unplanned population growth, either directly or indirectly.	LTS	No mitigation required.	N/A
Impact C-PH-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to population and housing.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.3, CULTURAL RESOURCES			
Impact CR-2: The proposed project or variant could cause a substantial adverse change in the significance of an archeological resource.	S	**Mitigation Measure M-CR-2: Archeological Monitoring.** Based on the reasonable potential that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of a qualified archeological consultant having expertise in California prehistoric and urban historical archeology. The archeological consultant shall undertake an archeological monitoring program. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the environmental review officer (ERO) for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of *construction* can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level potential effects on a significant archeological resource as defined in CEQA Guidelines section 15064.5(a)(c). *Archeological Monitoring Program.* The archeological monitoring program shall minimally include the following provisions:	LTSM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		• The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the Archeological Monitoring Plan (AMP) reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the project archeologist shall determine what project activities shall be archeologically monitored. In most cases, any soils disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring in areas determined to be archeologically sensitive because of the potential risk these activities pose to archeological resources and to their depositional context. • The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource. • The archeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with the archeological consultant, determined that project construction activities could have no effects on significant archeological deposits. The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis. Ecofacts are biological or geological objects or deposits related to human activity, but not manufactured by humans. Examples of ecofactual materials include animal bones, charcoal, plants, and pollen that can tell us about past diet or environments. *Paleoenvironmental Analysis.* When a submerged paleosol or when a deposit associated with an historical water source is identified during monitoring, irrespective of whether cultural material is present, samples shall be extracted and processed for dating, flotation for paleobotanical analysis, and other applicable special analyses pertinent to identification of possible cultural soils and for environmental reconstruction. *Discovery Treatment Determination.* If an intact archeological deposit is encountered, all soils disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction crews and heavy equipment until the deposit is evaluated. If in the	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		case of pile driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, present the findings of this assessment to the ERO. If the ERO in consultation with the archeological consultant determines that a significant archeological resource or tribal cultural resource is present and that the resource could be adversely affected by the proposed project, the ERO, in consultation with the project sponsor, shall determine whether preservation of the resource in place is feasible. If so, the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource and the archeological consultant shall prepare an archeological resource preservation plan, which shall be implemented by the project sponsor during construction. The consultant shall submit a draft preservation plan to the planning department for review and approval. If preservation in place is not feasible, a data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. *Consultation with Descendant Communities.* On discovery of an archeological site associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group an appropriate representative of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to offer recommendations to the ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Archeological Resources Report (ARR) shall be provided to the representative of the descendant group. *Archeological Data Recovery Plan.* An archeological data recovery program shall be conducted in accordance with an Archeological Data Recovery Plan (ADRP) if all three of the following apply: (1) a resource has potential to be significant, (2) preservation in place is not feasible, and (3) the ERO determines that an archeological data recovery program is	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		warranted. The project archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP. The archeological consultant shall prepare a draft ADRP that shall be submitted to the ERO for review and approval. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical. The scope of the ADRP shall include the following elements: • *Field Methods and Procedures.* Descriptions of proposed field strategies, procedures, and operations. • *Cataloguing and Laboratory Analysis.* Description of selected cataloguing system and artifact analysis procedures. • *Discard and Deaccession Policy.* Description of and rationale for field and post-field discard and deaccession policies. • *Security Measures.* Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities. • *Final Report.* Description of proposed report format and distribution of results. *Curation.* Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities. *Human Remains and Funerary Objects.* The treatment of human remains and funerary objects discovered during any soil-disturbing activity shall comply with applicable State and federal laws. This shall include immediate notification of the Medical Examiner of the City and County of San Francisco. The ERO also shall be notified immediately upon the discovery of human remains. In the event of the Medical Examiner's determination that the human remains are Native American remains, the Medical Examiner shall notify the California State Native American Heritage Commission, which will appoint a Most Likely Descendant (MLD).	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		The MLD will complete his or her inspection of the remains and make recommendations or preferences for treatment within 48 hours of being granted access to the site (Public Resources Code section 5097.98(a)). The project sponsor and ERO shall make all reasonable efforts to develop a Burial Agreement (Agreement) with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and associated or unassociated funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). The Agreement shall take into consideration the appropriate excavation, removal, recordation, scientific analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. If the MLD agrees to scientific analyses of the remains and/or associated or unassociated funerary objects, the archeological consultant shall retain possession of the remains and associated or unassociated funerary objects until completion of any such analyses, after which the remains and associated or unassociated funerary objects shall be reinterred or curated as specified in the Agreement. The landowner may consult with the project archeologist and project sponsor and shall consult with the MLD and CEQA lead agency on preservation in place or recovery of the remains and any scientific treatment alternatives. The landowner shall then make all reasonable efforts to develop an Agreement with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). Per Public Resources Code (PRC) section 5097.98(b)(1), the Agreement shall address and take into consideration, as applicable and to the degree consistent with the wishes of the MLD, the appropriate excavation, removal, recordation, scientific analysis, custodianship prior to reinterment or curation, and final disposition of the human remains and funerary objects. If the MLD agrees to scientific analyses of the remains and/or funerary objects, the archeological consultant shall retain possession of the remains and funerary objects until completion of any such analyses, after which the remains and funerary objects shall be reinterred or curated as specified in the Agreement. Both parties are expected to make a concerted and good faith effort to arrive at an Agreement, consistent with the provisions of PRC section 5097.98. However, if the landowner and the MLD are unable to reach an Agreement, the landowner, ERO, and project sponsor shall ensure that the remains and/or mortuary materials are stored securely and	

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		respectfully until they can be reinterred on the property, with appropriate dignity, in a location not subject to further or future subsurface disturbance, consistent with state law. Treatment of historic-period human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity, additionally, shall follow protocols laid out in the project's Archeological treatment documents, and in any related agreement established between the project sponsor, Medical Examiner, and ERO. *Cultural Resources Public Interpretation Plan.* The project archeological consultant shall submit a Cultural Resources Public Interpretation Plan (CRPIP) if a significant archeological resource is discovered during a project. As directed by the ERO, a qualified design professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner, local artists, or community group may also be required to assist the project archeological consultant in preparation of the CRPIP. If the resource to be interpreted is a tribal cultural resource, the CRPIP shall be prepared in consultation with and developed with the participation of Ohlone tribal representatives. The CRPIP shall describe the interpretive product(s), locations or distribution of interpretive materials or displays, the proposed content and materials, the producers or artists of the displays or installation, and a long-term maintenance program. The CRPIP shall be sent to the ERO for review and approval. The CRPIP shall be implemented prior to occupancy of the project. *Archeological Resources Report.* Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO. The archeological consultant shall submit a draft Archeological Resources Report (ARR) to the ERO that evaluates the historical significance of any discovered archeological resource, describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken, and if applicable, discusses curation arrangements. Formal site recordation forms (CA DPR 523 series) shall be attached to the ARR as an appendix. Once approved by the ERO, copies of the ARR shall be distributed as follows: California Historical Resources Information System, Northwest Information Center (NWIC) shall receive one copy and the ERO shall receive a copy of the transmittal of the approved ARR to the NWIC. The environmental planning division of the planning department shall receive one bound hardcopy of the ARR. Digital files that shall be submitted to the environmental	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		division include an unlocked, searchable PDF version of the ARR, GIS shapefiles of the site and feature locations, any formal site recordation forms (CA DPR 523 series), and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. The PDF ARR, GIS files, recordation forms, and/or nomination documentation should be submitted via USB or other stable storage device. If a descendant group was consulted during archeological treatment, a PDF of the ARR shall be provided to the representative of the descendant group. *Curation.* Significant archeological collections and paleoenvironmental samples of future research value shall be permanently curated at an established curatorial facility. The facility shall be selected in consultation with the ERO. Upon submittal of the collection for curation the sponsor or archeologist shall provide a copy of the signed curatorial agreement to the ERO.	
Impact CR-3: The proposed project or variant could disturb any human remains, including those interred outside of formal cemeteries.	S	Mitigation Measure M-CR-2 would apply.	LTSM
Impact C-CR-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to archeological resources and human remains.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
INITIAL STUDY SECTION E.4, TRIBAL CULTURAL RESOURCES			
Impact C-TCR-1: The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources	S	Mitigation Measure M-CR-2 would apply.	LTSM
Impact C-TCR-1: The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.8, GREENHOUSE GAS EMISSIONS			
Impact C-GG-1: The proposed project or variant would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions.	S	Mitigation Measures M-AQ-1h and M-TR-4b would apply.	LTSM

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
INITIAL STUDY SECTION E.11, RECREATION			
Impact RE-1: The proposed project or variant would increase the use of existing neighborhood and regional parks and other recreational facilities, but not to such an extent that substantial physical deterioration of the facilities would occur or be accelerated or such that the construction of new or expanded facilities would be required.	LTS	No mitigation required.	N/A
Impact C-RE-1: The proposed project or variant, in combination with cumulative projects, would not result in significant cumulative impacts related to recreation.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.13, PUBLIC SERVICES			
Impact PS-1: The proposed project or variant would not increase the demand for public services to such an extent that construction of new or physically altered facilities would be required.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact C-PS-1: The proposed project or variant, combined with cumulative projects, would not result in significant cumulative impacts on police, fire, and school district services such that new or physically altered facilities, the construction of which could cause significant environmental impacts, would be required in order to maintain acceptable levels of service.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.14, BIOLOGICAL RESOURCES			
Impact BI-1: The proposed project or variant would not have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact BI-2: The proposed project or variant would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	No mitigation required.	N/A
Impact BI-3: The proposed project or variant would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	No mitigation required.	N/A
Impact C-BI-1: The proposed project or variant, in combination with cumulative projects, would not result in significant cumulative impacts on biological resources.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
INITIAL STUDY SECTION E.15, GEOLOGY AND SOILS			
Impact GE-1: The proposed project or variant would not exacerbate the potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic ground shaking, liquefaction, seismically induced ground failure, or landslides.	LTS	No mitigation required.	N/A
Impact GE-2: The proposed project or variant would not result in substantial erosion or loss of topsoil.	LTS	No mitigation required.	N/A
Impact GE-3: The proposed project or variant would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse by being located on a geologic unit or soil that is unstable, or that could become unstable.	LTS	No mitigation required.	N/A
Impact GE-4: The proposed project or variant would not create substantial risks to life or property by being located on expansive soils.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact GE-5: The proposed project or variant would not directly or indirectly destroy a unique geologic feature of the site	NI	No mitigation required.	N/A
Impact GE-6: The proposed project or variant could directly or indirectly destroy a unique paleontological resource or site.	S	**Mitigation Measure M-GE-6: Inadvertent Discovery of Paleontological Resources during Construction.** *Worker Awareness Training* – Prior to commencing construction, and ongoing throughout ground-disturbing activities (e.g., excavation, utility installation), the project sponsor and/or their designee shall engage a qualified paleontologist meeting the standards specified by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology 2010) to train all project construction workers regarding how to recognize paleontological resources and on the contents of the paleontological resources alert sheet, as provided by the planning department. The paleontological resources alert sheet shall be prominently displayed at the construction site during ground-disturbing activities for reference regarding potential paleontological resources. In addition, the paleontologist shall inform the project sponsor, contractor, and construction personnel of the immediate stop work procedures and other procedures to be followed if bones or other potential fossils are unearthed at the project site. Should new workers that will be involved in ground-disturbing construction activities begin employment after the initial training has occurred, the construction supervisor shall ensure that they receive the worker awareness training as described above. The paleontologist shall complete the standard form/affidavit confirming the timing of the worker awareness training and submit it to the environmental review officer (ERO). The affidavit shall confirm the project's location, the date of training, the location of the informational handout display, and the number of participants. The affidavit shall be transmitted to the ERO within five business days of conducting the training. *Paleontological Resource Discoveries* – In the event of the discovery of an unanticipated paleontological resource during project construction, ground-disturbing activities shall temporarily be halted within 25 feet of the find until the discovery is examined by a qualified paleontologist as recommended by the Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 2010) and best practices in mitigation paleontology	LTSM

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		(Murphey et al. 2019). The paleontologist shall consult the ERO. Work within the sensitive area shall resume only when deemed appropriate by the qualified paleontologist in consultation with the ERO. The qualified paleontologist shall determine (1) if the discovery is scientifically significant; (2) the necessity for involving other responsible or resource agencies and stakeholders, if required or determined applicable; and (3) methods for resource recovery. If a paleontological resource assessment results in a determination that the resource is not scientifically important, this conclusion shall be documented in a paleontological evaluation letter to demonstrate compliance with applicable statutory requirements (e.g., Federal Antiquities Act of 1906, CEQA Guidelines section 15064.5, Public Resources Code chapter 17, section 5097.5, Paleontological Resources Preservation Act 2009). The paleontological evaluation letter shall be submitted to the ERO for review within 30 calendar days of the discovery. If in consultation with the ERO the qualified paleontologist determines that a paleontological resource is of scientific importance, the qualified paleontologist shall make a recommendation as to what action, if any, is warranted and prepare a paleontological mitigation program. The mitigation program shall include measures to fully document the resource of scientific importance. The qualified paleontologist shall submit the mitigation program to the ERO for review and approval within ten business days of the discovery. Upon approval by the ERO, ground-disturbing activities in the project area shall resume and be monitored as determined by the qualified paleontologist for the duration of such activities. The mitigation program shall include (1) procedures for construction monitoring at the project site; (2) fossil preparation and identification procedures; (3) curation of paleontological resources of scientific importance into an appropriate repository; and (4) preparation of a Paleontological Resources Report (report or paleontology report) at the conclusion of ground-disturbing activities. The report shall include dates of field work, results of monitoring, fossil identifications to the lowest possible taxonomic level, analysis of the fossil collection, a discussion of the scientific significance of the fossil collection, conclusions, locality forms, an itemized list of specimens, and a repository receipt from the curation facility. The project sponsor shall be responsible for the preparation and implementation of the mitigation program, in addition to any costs necessary to prepare and identify collected fossils, and for any curation fees charged by the paleontological	

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
		repository. The paleontology report shall be submitted to the ERO for review within 30 business days from conclusion of ground-disturbing activities, or as negotiated following consultation with the ERO.	
Impact C-GE-1: The proposed project or variant, in combination with cumulative projects, would not result in significant cumulative impacts on geology, soils, or paleontological resources.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.16, HYDROLOGY AND WATER QUALITY			
Impact HY-1: The proposed project or variant would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	No mitigation required.	N/A
Impact HY-2: The proposed project or variant would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project or variant may impede sustainable groundwater management of the basin.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact HY-3: The proposed project or variant would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion, siltation, or flooding on or off site; or that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LTS	No mitigation required.	N/A
Impact HY-4: The proposed project or variant would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	No mitigation required.	N/A
Impact C-HY-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact on hydrology and water quality.	LTS	No mitigation required.	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
INITIAL STUDY SECTION E.17, HAZARDS AND HAZARDOUS MATERIALS			
Impact HZ-1: The proposed project or variant would not create a significant hazard through the routine transport, use, or disposal of hazardous materials.	LTS	No mitigation required.	N/A
Impact HZ-2: The proposed project or variant would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	No mitigation required.	N/A
Impact HZ-3: The proposed project or variant would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LTS	No mitigation required.	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact HZ-4: The proposed project or variant would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 but would not create a significant hazard to the public or the environment.	LTS	No mitigation required.	N/A
Impact HZ-5: The proposed project or variant would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	No mitigation required.	N/A
Impact C-HZ-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to hazards and hazardous materials.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.18, MINERAL RESOURCES			
NA	NA	NA	N/A

IMPACT CODES:
N/A = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

Environmental Impact	Level of Significance prior to Mitigation	Mitigation Measures	Level of Significance after Mitigation
INITIAL STUDY SECTION E.19, ENERGY			
Impact EN-1: The proposed project or variant would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.	LTS	No mitigation required.	N/A
Impact EN-2: The proposed project or variant would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	No mitigation required.	N/A
Impact C-EN-1: The proposed project or variant, in combination with cumulative projects, would not result in significant cumulative impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	No mitigation required.	N/A
INITIAL STUDY SECTION E.20, AGRICULTURE AND FORESTRY RESOURCES			
NA	NA	NA	N/A
INITIAL STUDY SECTION E.21, WILDFIRE			
NA	NA	NA	N/A

IMPACT CODES:
NA = Not Applicable
NI = No impact
LTS = Less-than-significant or negligible impact; no mitigation required
S = Significant
SU = Significant and unavoidable adverse impact, no feasible mitigation
LTSM = Less than significant impact, after mitigation
SUM = Significant and unavoidable adverse impact, after mitigation

S.4 Summary of Project Alternatives

CEQA Guidelines section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives but avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a project or alternatives that are infeasible. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

Chapter 5, Alternatives, of this draft EIR presents the alternatives analysis as required by CEQA for the Stonestown Development Project. The discussion includes the methodology used to select alternatives to the Stonestown Development Project for detailed CEQA analysis, with the intent of developing potentially feasible alternatives that could avoid or substantially lessen the significant impacts identified while still meeting most of the project's basic objectives. Based on the screening process, the following alternatives were selected for detailed analysis in this draft EIR:

- Alternative A: No Project Alternative
- Alternative B: Full Preservation Alternative
- Alternative C: Partial Preservation and Relocated Parking Alternative
- Alternative D: Code Compliant Alternative
- Alternative E: Reduced Density Alternative

Detailed descriptions of the selected alternatives and summaries of their impacts are presented below.

S.4.1 Alternative A: No Project Alternative

DESCRIPTION OF ALTERNATIVE

Under the No Project Alternative, the project site would not be developed with either the proposed project or variant as described in Chapter 2, Project Description, of this draft EIR. Under Alternative A, the 27 acres of surface parking and surrounding structures in the 41-acre project site would not be redeveloped into a master-planned, mixed-use community. The existing 3,400 vehicle parking spaces on the project site would remain. Under Alternative A, the straightening of 20th Avenue between Euclid and Winston drives, new infrastructure, and streetscape and new open space would not be constructed. The existing development controls on the project site would continue to govern site development and would not be changed. There would be no amendments to the general plan, planning code, or zoning map. The project site would remain under the existing C-2 (Community Business), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) Use Districts and the 40-X and 65-D Height and Bulk Districts. Any specific detail about the characteristics of future development under the No Project Alternative would be speculative because there are no other development proposals proposed or pending at the project site.

SUMMARY OF IMPACTS

Under Alternative A, none of the impacts associated with the proposed project or variant as described in Chapter 3 and the initial study (Appendix B) of this draft EIR would occur. The existing project site would be

retained in its current condition; no new buildings, infrastructure, open space, or transportation and circulation changes would be constructed. There would be no change to existing site circulation. Alternative A would have no significant impacts related to historic architectural resources, transportation and circulation, noise and vibration, air quality, and wind. Therefore, the No Project Alternative would avoid the significant and unavoidable impacts for the proposed project or variant.

S.4.2 Alternative B: Full Preservation Alternative

DESCRIPTION OF ALTERNATIVE

The purpose of Alternative B is to avoid or substantially reduce the significant and unavoidable impact on a historic resource that would occur under the proposed project or variant. Alternative B would retain and rehabilitate the existing former UA Stonestown Twin Theater building in accordance with the Secretary of Interior's Standards and convert the building into a multi-family residential use with 10 units. Alternative B would include the following changes as compared to the proposed project: (1) retention of the former UA Stonestown Twin Theater building; (2) a new 5-unit residential building at Block NW4 between the retained theater building and Block NW3, (3) a new 100-unit residential building at Block W5 between Blocks W1 and W3; (4) reduction in open space to 3.2 acres due to the new buildings at Block NW4 and W5; and (4) the proposed roadway that loops around the buildings in the northwest portion of the project site would remain but would be slightly altered to accommodate changes to Blocks NW2 and NW1. Overall, the total building area would be approximately 3,546,000 square feet, which is a slight reduction in the development program compared to the proposed project (67,000 square feet less than the proposed project). The buildings' heights would generally be the same as those identified for the proposed project or variant, ranging from 30 to 190 feet with the tower parcels on Blocks W3, W4, S1, S2, and S3. The new buildings on Block NW3 and W5 would be approximately 40 and 70-feet-tall, respectively.

Construction of Alternative B would have the same eight-year construction duration conservatively anticipated for the proposed project and is anticipated to occur in six overlapping phases. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements. Construction of Alternative B would be similar to the proposed project or variant both in magnitude and duration. Construction activities associated with rehabilitation of the theater building would be incorporated into the construction plan.

SUMMARY OF IMPACTS

Alternative B would avoid one significant and unavoidable impact identified for the proposed project or variant. This alternative would substantially lessen the severity of the following impact, reducing it from significant and unavoidable with mitigation to less than significant.

- Significant and unavoidable impact on a historic resource would be avoided by retaining and rehabilitating the theater building.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative B and would still occur include the following:

- Significant and unavoidable variant and cumulative transit delay impacts would still occur, and the addition of vehicle trips generated by Alternative B would be cumulatively considerable. Cumulative transit delay impacts would remain significant and unavoidable even with mitigation.

- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be the similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable partial buildout, full buildout, and cumulative level wind hazards would be less than the proposed project or variant but would still increase the number of locations at which the wind hazard would be exceeded. This impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative B include impacts related to archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

S.4.3 Alternative C: Partial Preservation and Relocated Parking Alternative

DESCRIPTION OF ALTERNATIVE

The purpose of Alternative C is to avoid or substantially reduce the significant and unavoidable impact on a historic architectural resource that would occur under the proposed project or variant and significant and unavoidable transit delay impacts. Alternative C would include the following changes as compared to the proposed project: (1) partial retention of the former UA Stonestown Twin Theater and some of its character-defining features; and (2) relocation of 200 retail parking spaces from Block E1 to Block S3 to redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue) and that are used by multiple transit routes under the proposed project or variant. Overall, the total building area would be 3,570,000 square feet, which is a slight reduction in the development program compared to the proposed project (43,000 square feet less than the proposed project). The buildings heights would generally be the same as those identified for the proposed project, ranging from 30 to 190 feet with the tower parcels on Blocks W3, W4, S1, S2, and S3.

Construction of Alternative C would have the same eight-year construction duration conservatively anticipated for the proposed project and is anticipated to occur in six overlapping phases. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements. Construction of Alternative C would be similar to the proposed project or

variant both in magnitude and duration. Construction activities associated with retention of some of the character-defining features of the theater building would be incorporated into the construction plan.

SUMMARY OF IMPACTS

Alternative C would reduce one significant and unavoidable impact identified for the proposed project or variant. This alternative would substantially lessen the severity of the following impact, reducing it from significant and unavoidable with mitigation to less than significant with mitigation.

- Significant and unavoidable impacts to transit delay identified for the variant would be avoided by relocating a portion of on-site vehicle parking within the site to redirect vehicle trips to and from the project away from the roadways and intersections where transit travel times are most delayed. The resulting transit delay impacts would be less than significant.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative C and would still occur include the following:

- Significant and unavoidable impacts on a historic resource would be less than the proposed project or variant as the alternative would alter the theater building. However, the impact would remain significant and unavoidable with mitigation.
- Significant and unavoidable cumulative transit delay impacts would still occur, and the addition of vehicle trips generated by Alternative C would be cumulatively considerable for the 57 Parkmerced inbound, the SamTrans Route 122 northbound, and the 28/28R combined outbound. The alternative would reduce delay contributions to the 57 Parkmerced outbound to less than cumulatively considerable levels. Cumulative transit delay impacts would remain significant and unavoidable even with mitigation, although one of four lines analyzed would be reduced to less than cumulatively considerable.
- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable partial buildout, full buildout, and cumulative level wind hazards would be less than the proposed project or variant but would still increase the number of locations at which the wind hazard would be exceeded. This impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative C include impacts related to archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational

noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

S.4.4 Alternative D: Code Compliant Alternative

DESCRIPTION OF ALTERNATIVE

The purpose of Alternative D is to avoid or substantially reduce significant and unavoidable impacts related to transportation and circulation, noise and vibration, air quality, and wind that would occur under the proposed project or variant and to better inform decision makers of the potential impacts of certain aspects of the proposed project and variant. Alternative D assumes that the project sponsor would develop the project site in compliance with the existing planning code and land use designations without the use of density bonuses otherwise permitted under the law. Currently, the project site is zoned C-2 (Community Business), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) Use Districts and located in the 40-X and 65-D Height and Bulk Districts.

Similar to the proposed project or variant, Alternative D would redevelop the 27 acres of surface parking into a master-planned, mixed-use community, and would retain the existing Stonestown Galleria shopping mall However, the existing 700-space parking garage in the southwest corner of the site, the CitySports building, and the two-story commercial building in the northeast corner of the project site would remain. The former UA Stonestown Twin Theater would be demolished to enable code-compliant land uses in the northwest corner of the site. The parcel containing the Authentic Church would be developed with townhomes under this alternative. Overall, Alternative D would have an approximately 1,663,465-square-foot reduction in development compared to the proposed project (about 46 percent less than the proposed project's total building area). Under Alternative D, building heights would be substantially reduced in height from a maximum height of 190 feet under the proposed project or variant to a maximum height of 65 feet, consistent with the existing height limit. Under Alternative D, the interior street network would remain largely the same as existing conditions. The existing streets would be improved according to the principles of the Better Streets Plan.

Construction of Alternative D would be similar to the proposed project or variant, although slightly reduced in both magnitude and duration. Construction activity in the site preparation and grading, excavation, and paving phases would largely remain the same. Building construction would be slightly reduced due to the reduction in building area compared to the proposed project or variant. In general, the same types of construction activities and equipment would be required. Construction is anticipated to occur in six overlapping phases, but due to the reduced size of the buildings, construction is conservatively assumed to take seven years compared to the eight-year duration for the proposed project. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements.

SUMMARY OF IMPACTS

Alternative D would substantially lessen the severity of seven significant and unavoidable impacts identified for the proposed project or variant, reducing the impacts from significant and unavoidable with mitigation to less than significant with mitigation or less than significant:

- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable partial buildout wind hazards would be reduced to less than significant.
- Significant and unavoidable full buildout wind hazards would be reduced to less than significant.
- Significant and unavoidable cumulative wind hazards would be reduced to less than significant.
- Significant and unavoidable project-level impacts related to transit delay would be reduced to less than significant.
- Significant and unavoidable cumulative transit delay impacts would still occur, but Alternative D's contribution to those impacts would be reduced to less than cumulatively considerable.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative D and would still occur include the following:

- Significant and unavoidable impacts on a historic resource would be similar to the proposed project or variant due to the demolition of the theater building, and the impact would remain significant and unavoidable with mitigation.
- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative D include impacts related to archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

S.4.5 Alternative E: Reduced Density Alternative

DESCRIPTION OF ALTERNATIVE

The purpose of Alternative E is to avoid or substantially reduce significant and unavoidable impacts related to transportation and circulation, noise and vibration, air quality, and wind that would occur under the proposed project or variant. Similar to the proposed project, Alternative E would redevelop the 27 acres of surface parking into a master-planned, mixed-use community. As under the proposed project or variant, the

existing 700-space parking garage in the southwest corner of the site, the former UA Stonestown Twin Theater, the CitySports building, and the two-story commercial building in the northeast corner of the project site would be demolished. The 0.8-acre parcel containing the Authentic Church would not be developed under this alternative. Overall, Alternative E would have an approximately 1,315,000-square-foot reduction in development compared to the proposed project (about 36 percent less building area than the proposed project). The buildings would be 30 to 80 feet in height instead of 30 to 190 feet under the proposed project or variant. No towers would be on Blocks W3, W4, S1, S2, or S3 under Alternative E. Alternative E would have the same proposed street plan, intersection controls, transit stop relocation, and pedestrian and bicycle network as the proposed project or variant and would be designed according to the principles of the Better Streets Plan.

Construction of Alternative E would be similar to the proposed project or variant, although slightly reduced in both magnitude and duration. Construction activity in the site preparation and grading, excavation, and paving phases would largely remain the same. Building construction would be slightly reduced due to the reduction in building area compared to the proposed project or variant. In general, the same types of construction activities and equipment would be required. Construction is still anticipated to occur in six overlapping phases, but with the reduced size of the buildings, construction is anticipated to conservatively take seven and a half years compared to the eight-year duration for the proposed project or variant. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements.

SUMMARY OF IMPACTS

Alternative E would substantially lessen the severity of seven significant and unavoidable impact identified for the proposed project or variant, reducing it from significant and unavoidable with mitigation to less than significant with mitigation or less than significant:

- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable project-level and cumulative wind hazards would be reduced to less than significant.
- Significant and unavoidable full buildout wind hazards would be reduced to less than significant.
- Significant and unavoidable cumulative wind hazards would be reduced to less than significant.
- Significant and unavoidable project-level impacts related to transit delay would be reduced to less than significant.
- Significant and unavoidable cumulative transit delay impacts would still occur, but Alternative E's contribution to those impacts would be reduced to less than cumulatively considerable.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative D and would still occur include the following:

- Significant and unavoidable impacts on a historic resource would be similar to the proposed project or variant due to the demolition of the theater building, and the impact would remain significant and unavoidable with mitigation.
- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative E include impacts related to: archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

S.5 Comparison of the Stonestown Development Project and Alternatives

Table S-3 presents a summary comparison of the impacts of the proposed project or variant and the alternatives. **Table S-4** summarizes the ability of each of alternatives to meet the objectives of the proposed project.

Table S-3 Comparison of Environmental Impacts of the Proposed Project or Variant to Impacts of the Alternatives

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SUMMARY OF IMPACTS FOR TOPICS IN THIS DRAFT EIR						
SECTION 3.A, HISTORIC ARCHITECTURAL RESOURCES						
Impact CR-1: The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code.	**SUM**	NI	LTS <	**SUM** **<**	**SUM** **=**	**SUM** **=**
Impact C-CR-1: The proposed project or variant, in combination with cumulative projects, could result in demolition and/or alteration of historical resources, as defined in CEQA Guidelines section 15064.5.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION 3.B, TRANSPORTATION AND CIRCULATION						
Impact TR-1: Construction of the proposed project or variant would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, driving, or riding transit; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact TR-2: Operation of the proposed project or variant would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact TR-3: Operation of the proposed project or variant would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact TR-4: Operation of the proposed project would not substantially delay public transit; operation of the variant would substantially delay public transit.	LTS (Proposed Project) / **SUM (Variant)**	NI <	LTS < (Proposed Project) / LTS < (Variant)	LTS < (Proposed Project) / LTS < (Variant)	LTS < (Proposed Project) / LTS < (Variant)	LTS < (Proposed Project) / LTS < (Variant)
Impact TR-5: Operation of the proposed project or variant would not cause substantial additional VMT or substantially induce automobile travel.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact TR-6: Operation of the proposed project or variant may result in a loading deficit but would not result in secondary effects like loading vehicles blocking bus routes or pedestrian paths of travel.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-TR-1: The proposed project or variant, in combination with cumulative projects, would not result in significant construction-related transportation impacts.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-TR-2: The proposed project or variant, in combination with cumulative projects, would not create potentially hazardous conditions and would not interfere with accessibility.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-TR-3: The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably.	**SUM**	NI <	**SUM** **=**	**SUM** **<**	LTSM <	LTSM <
Impact C-TR-4: The proposed project or variant, in combination with cumulative projects, would not cause substantial additional vehicle miles traveled or substantially induce automobile travel.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact C-TR-5: The proposed project or variant, in combination with cumulative projects, would not result in cumulative loading impacts.	LTSM	NI <	LTS =	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SECTION 3.C, NOISE AND VIBRATION						
Impact NO-1: Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	**SUM** **=**	**SUM** **=**
Impact NO-2: Construction truck traffic from the proposed project or variant would not cause a substantial temporary or periodic increase in ambient noise levels along access streets in the project vicinity.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact NO-3: Construction of the proposed project or variant would not generate excessive groundborne vibration or groundborne noise levels.	LTS	NI <	LTS <	LTS <	LTS <	LTS <
Impact NO-4: Operation of stationary equipment on the project site from the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact NO-5: Events that include outdoor amplified sound would result in substantial temporary or periodic increases in ambient noise levels in the immediate project vicinity, or expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact NO-6: Proposed project or variant traffic and loading operations would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-NO-1: Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	**SUM** **=**	**SUM** **=**
Impact C-NO-2: Construction of the proposed project or variant, in combination with cumulative projects, would not result in the generation of excessive groundborne vibration or groundborne noise levels during construction.	LTS	NI <	LTS =	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-NO-3: Operation of the stationary equipment on the project site from the proposed project or variant, in combination with cumulative projects, could result in the generation of a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	LTS	NI <	LTS =	LTS =	LTS <	LTS =
Impact C-NO-4: Proposed project or variant traffic and loading operations, in combination with cumulative projects, would not cause a substantial permanent increase in ambient noise levels in the project vicinity.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION 3.D, AIR QUALITY						
Impact AQ-1: During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	LTSM <	LTSM <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact AQ-2: During full buildout project operations, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the project region is in nonattainment under an applicable federal, state, or regional ambient air quality standard.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	LTSM <	LTSM <
Impact AQ-3: The proposed project or variant would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial pollutant concentrations.	LTSM	NI <	LTSM =	LTSM =	LTSM <	LTSM <
Impact AQ-4: The proposed project or variant would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact AQ-5: The proposed project or variant would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-AQ-1: The proposed project or variant, in combination with cumulative projects, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants.	LTSM	NI <	LTSM =	LTSM =	LTSM <	LTSM <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-AQ-2: The proposed project or variant, in combination with cumulative projects, would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people.	LTS	NI	LTS	LTS	LTS	LTS
SECTION 3.E, WIND						
Impact WI-1: During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use.	**SUM**	NI <	**SUM** **<**	**SUM** **=**	LTS <	LTS <
Impact WI-2: At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use.	**SUM**	NI <	**SUM** **<**	**SUM** **=**	LTS <	LTS <
Impact C-WI-1: The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use.	**SUM**	NI <	**SUM** **<**	**SUM** **=**	LTS <	LTS <
SECTION 3.F, SHADOW						
Impact SH-1: The proposed project or variant would create new shadow; however, this new shadow would not substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	LTS	NI <	LTS <	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-SH-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative shadow impact.	LTS	NI <	LTS <	LTS =	LTS <	LTS <
SECTION 3.G, UTILITIES AND SERVICE SYSTEMS						
Impact UT-1: The proposed project or variant would not require construction of new or expanded water, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact UT-2: Sufficient water supplies are available to serve the proposed project or variant and reasonably foreseeable future development in normal, dry, and multiple dry years unless the Bay Delta Plan Amendment is implemented; in that event the SFPUC may develop new or expanded water supply facilities to address shortfalls in single and multiple dry years but this would occur with or without the proposed project or variant. Impacts related to new or expanded water supply facilities cannot be identified at this time or implemented in the near term; instead, the SFPUC would address supply shortfalls through increased rationing, which	LTS	NI <	LTS =	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing.						
Impact UT-3: The proposed project or variant would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the projected demand in addition to the provider's existing commitments and would not require construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact UT-4: The proposed project or variant would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	NI <	LTS =	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-UT-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to the wastewater and stormwater collection and treatment system.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-UT-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to electric and telecommunication facilities.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-UT-3: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to solid waste facilities and regulations.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SUMMARY OF IMPACTS FOR TOPICS IN THE INITIAL STUDY						
SECTION E.1, LAND USE AND PLANNING						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.2, POPULATION AND HOUSING						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SECTION E.3, CULTURAL RESOURCES						
Impact CR-2: The proposed project or variant could cause a substantial adverse change in the significance of an archeological resource	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact CR-3: The proposed project or variant could disturb any human remains, including those interred outside of formal cemeteries.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-CR-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to archeological resources and human remains.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.4, TRIBAL CULTURAL RESOURCES						
Impact TCR-1: The proposed project or variant could result in a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-TCR-1: The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources.	LTS	NI <	LTS =	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SECTION E.8, GREENHOUSE GAS EMISSIONS						
Impact C-GG-1: The proposed project or variant would generate greenhouse gas emissions that would result in a significant impact on the environment and would conflict with a policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
SECTION E.11, RECREATION						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION E.13, PUBLIC SERVICES						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION E.14, BIOLOGICAL RESOURCES						
All impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.15, GEOLOGY AND SOILS						
Impact GE-6: The proposed project or variant could directly or indirectly destroy a unique paleontological resource or site.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
All other geology and soils impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.16, HYDROLOGY AND WATER QUALITY						
All impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.17, HAZARDS AND HAZARDOUS MATERIALS						
All impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.18, MINERAL RESOURCES						
None applicable						
SECTION E.19, ENERGY						
All impacts	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION E.20, AGRICULTURE AND FORESTRY RESOURCES						
None applicable						
SECTION E.21, WILDFIRE						
None applicable						

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Table S-4 Summary of Ability of Alternatives to Address Project Objectives

Project Objectives	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
	Does the alternative address the objective?				
1. Redevelop the underutilized portions of the project site, including surface parking lots, structured parking, and vacant structures surrounding Stonestown Galleria, to create a new neighborhood that reflects excellence in urban design principles; that provides a mix of residential, retail, commercial, hotel, public gathering spaces, and community uses to support a vibrant town center; and that benefits the existing surrounding neighborhoods, Stonestown Galleria, and the future new residents.	No	Partial	Yes	Partial	Yes
2. Contribute to meeting the San Francisco General Plan Housing Element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for San Francisco by maximizing the number of dwelling units throughout the Project site and providing housing in proximity to local and regional public transportation.	No	Yes	Yes	Partial	Partial
3. Build a mixed-income residential community that provides housing at a range of affordability levels, with a wide range of building styles, heights, dwelling unit types, tenure, and supporting on-site amenities; that attracts a diversity of household compositions, including children, adults, and seniors; and that increases business and employment opportunities.	No	Yes	Yes	Partial	Partial
4. Prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to nature and to the existing surrounding residential neighborhood of Merced Manor.	No	Partial	Yes	Partial	Yes
5. Add new residents, open space amenities, and complementary retail to bring more shoppers to the site while supporting the continued operations of the existing Stonestown Galleria, and create synergies among uses on the site.	No	Partial	Yes	Partial	Partial

Project Objectives	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
	Does the alternative address the objective?				
6. Link the retail-centric heart of the project, located around the existing Stonestown Galleria and the new 20th Avenue corridor, to the existing and proposed adjacent residential areas through a network of pedestrian pathways, plazas, and parks.	No	Partial	Yes	No	Yes
7. Focus the customer journey by concentrating a variety of retail, restaurant, commercial uses, and supportive parking within the retail-centric heart of the site located around the existing shopping center and the new 20th Avenue corridor in order to optimize foot traffic for retail tenants and maximize cross-shopping opportunities by shoppers and visitors to the project.	No	Yes	Yes	No	Yes
8. Provide space to accommodate other commercial uses, including hotel, small office, medical office, and other neighborhood-serving uses complementary to a town center and to serve project residents as well as visitors of the site.	No	Yes	Yes	No	Yes
9. Provide active public gathering spaces adjacent to Stonestown Galleria to promote and improve opportunities for mingling and connection for people of all ages and abilities.	No	Partial	Yes	No	Yes
10. Build adequate parking and loading access to serve the needs of project residents, workers, retailers, visitors, and the existing Stonestown Galleria and concentrate parking near the retail centric core of the project site.	No	Yes	Yes	Yes	Yes
11. Create a circulation and transportation system that emphasizes transit-oriented development, maximizes foot traffic to the shopping center, and provides pedestrian and bicycle connections to and from the Project site to adjacent neighborhoods and recreational areas such as Ocean Beach, Rolph Nicol Jr. Playground, Lake Merced, and Stern Grove.	No	Partial	Yes	No	Yes
12. Improve the infrastructure at the project site, including new streets and sidewalks, bicycle and pedestrian amenities, multiuse paths, water, sewer, gas/electric utilities, and new fire hydrant infrastructure.	No	Yes	Yes	Partial	Yes

Project Objectives	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
	Does the alternative address the objective?				
13. Build a neighborhood resilient to sea level rise and earthquakes and demonstrate leadership in sustainable development by constructing improvements intended to reduce the neighborhood's per capita consumption of electricity, natural gas, and potable water, and generation of wastewater.	No	Yes	Yes	Yes	Yes
14. Create a development that is financially feasible and that can fund the project's capital costs and ongoing operation and maintenance costs relating to the redevelopment and long-term operation of the property.	No	Unknown	Unknown	Unknown	Unknown

S.6 Environmentally Superior Alternative

The CEQA Guidelines section 15126.6(e) requires the identification of an environmentally superior alternative to the proposed project or variant. If the No Project Alternative is environmentally superior, then the EIR must identify another environmentally superior alternative from among the alternatives evaluated. Based on the analysis and comparison of the impacts of the alternatives presented in Chapter 5, Alternatives, of this draft EIR, the No Project Alternative would be the environmentally superior alternative because it would result in no impacts to all resources. While the No Project Alternative would offer environmental advantage over the proposed project or variant, CEQA Guidelines section 15126.6(e)(2) provides that if the "no project" alternative is the environmentally superior alternative, the EIR should also identify an environmentally superior alternative among the other alternatives. Beyond the No Project Alternative, Alternative E, Reduced Density Alternative, is considered the environmentally superior alternative. Alternative E would avoid the significant and unavoidable impacts related to quality, wind, and project-level transit delay, and would reduce the contribution to cumulative transit delay to a less-than-cumulatively considerable level.

S.7 Areas of Known Controversy and Issues to Be Resolved

Based on the comments received on the notice of preparation of an EIR, potential areas of controversy for the Stonestown Development Project include:

- Vehicle Miles Traveled (VMT) and transportation conflicts with pedestrians, bicycles, travelers with disabilities, and transit performance
- Potential impacts to Caltrans right-of-way
- Project and cumulative impacts on traffic congestion and parking
- Impacts on scenic vistas and views
- Growth-inducing and cumulative impacts
- Shadow impacts on nearby schools, churches, streets, sidewalks, open spaces, and residences
- Construction and operational noise impacts on surrounding neighborhoods
- Air quality, wind, and reflective glare impacts
- Impacts on public services
- Impacts related to the geology of the project site and liquefaction
- Impacts related to hazardous materials
- Impacts related to greenhouse gas emissions
- Impacts related to population and housing
- Impacts related to utilities and water supply
- Impacts related to archeological and tribal cultural resources

INTENTIONALLY BLANK

CHAPTER 1
INTRODUCTION

1.A Project Summary

This environmental impact report (EIR) analyzes the potential environmental effects associated with the Stonestown Development Project (proposed project). The project sponsor, Brookfield Properties Development, proposes to redevelop the approximately 27 acres of surface parking, which would include the demolition of four structures on site, surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use community. Under the proposed project, 710,000 square feet of the existing mall would remain, with changes to the façade, entrances, and exits. Overall, the proposed project would include up to 2,930 residential units; up to 160,000 square feet of new retail sales and service use space; up to 200,000 square feet of non-retail sales and service use; up to 100,000 square feet of hotel use; approximately 53,000 square feet of institutional uses; approximately 4,250 parking spaces; and approximately 6 acres of open space. The proposed project would also include transportation, circulation, and utility infrastructure improvements, including upgrading the existing utility infrastructure to provide the proposed uses with potable water, recycled water, emergency water, wastewater collection, stormwater collection and treatment, electricity, and communications. One variant is also analyzed in this EIR. The variant would develop the 0.8-acre Authentic Church parcel and would include approximately 150 additional residential units; 10,000 additional square feet of institutional use; and 200 additional parking spaces in a partially below grade parking structure.

1.B Purpose of This EIR

This EIR was prepared in accordance with all criteria, standards, and procedures of the California Environmental Quality Act (CEQA), as amended (California Public Resources Code section 21000 et seq.); the CEQA Guidelines (California Code of Regulations title 14, section 15000 et seq.); and San Francisco Administrative Code chapter 31. In accordance with CEQA section 21067 and CEQA Guidelines sections 15367 and 15050–15053, the City and County of San Francisco (City) is the lead agency, under whose authority this document has been prepared.

As described by CEQA and the CEQA Guidelines, public agencies are charged with a duty to avoid or substantially lessen significant environmental effects, where feasible. In undertaking this duty, a public agency has an obligation to balance a project's significant effects on the environment with its benefits, including economic, social, technological, legal, and other non-environmental characteristics.

As defined in CEQA Guidelines section 15382, a "significant effect on the environment" is:

> *"… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic*

> *change related to a physical change may be considered in determining whether the physical change is significant."*

CEQA requires an EIR to be prepared before a local agency makes its first discretionary decision to approve a project that may cause a significant effect on the environment that cannot be mitigated. The EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, identify mitigation measures to lessen or eliminate significant adverse impacts, and examine feasible alternatives to the project.

The City must consider the information in this EIR and make certain findings with respect to each significant effect identified. The decision makers will review and consider the information in this EIR, along with other information available through the public review processes, before they decide to approve, disapprove, or modify the proposed project or variant or adopt an alternative to the proposed project or variant.

1.C Type of EIR

This document is a project-level EIR, pursuant to CEQA Guidelines section 15161. A project-level EIR focuses on changes in the environment that would result from construction and operation of a specific project. Furthermore, this EIR is also a focused EIR, pursuant to CEQA Guidelines section 15063(c)(3). An initial study was prepared for the proposed project and variant in accordance with sections 15062 and 15082 (refer to Appendix B of this EIR). The initial study is being published concurrently with the EIR, and comments will be accepted on the initial study during the public review period for the EIR.[2] The initial study identifies the topics for which the proposed project and variant would result in less-than-significant impacts or impacts that could be reduced to less than significant with implementation of the mitigation measures identified in the initial study, and therefore do not require further analysis in this EIR. Thus, this EIR focuses the environmental analysis on the topic identified in the initial study (e.g., air quality) with the potential to have significant environmental impacts.

An EIR is an informational document used by a lead agency (in this case, the City) when considering approval of a project. The purpose of an EIR is to provide public agencies and members of the public with detailed information regarding the environmental effects of implementing a proposed project. An EIR should analyze a project's environmental consequences, identify ways to reduce or avoid a project's potential environmental effects, and identify alternatives to a project that can avoid or reduce impacts.

This EIR provides information to be used in the planning and decision-making process regarding the environmental impacts of a proposed project. It is not the purpose of an EIR to recommend approval or denial of a project.

Before it can approve the project, the City, as the lead agency and decision-making entity, must certify that this EIR has been completed in compliance with CEQA, that the information in the EIR has been considered, and that the EIR reflects the City's independent judgment. CEQA requires decision makers to balance the benefits of a project against its unavoidable environmental consequences. If environmental impacts are identified as significant and unavoidable, the City may still approve the project if it finds that social, economic, or other benefits outweigh the unavoidable impacts. The City would then be required to state in writing the

[2] Under CEQA Guidelines section 15128, the EIR must contain a brief statement indicating the reasons why certain effects were determined not to be significant and, thus, are not studied in detail in the EIR.

specific reasons for approving the project, based on information in the EIR and other information sources in the administrative record. This reasoning is called a "statement of overriding considerations" (Public Resources Code section 21081; CEQA Guidelines section 15093). In addition, the City must adopt a mitigation monitoring and reporting program, describing the measures that were made a condition of project approval to avoid or lessen significant effects on the environment (Public Resources Code section 21081.6; CEQA Guidelines section 15097). The mitigation monitoring and reporting program, which is adopted at the time of project approval, is designed to ensure compliance with the project description and EIR mitigation measures during and after project implementation. If the City decides to approve the project, it will be responsible for verifying that the mitigation monitoring and reporting program for this project is implemented. The EIR will be used primarily by the City during approval of future discretionary actions and permits.

1.D CEQA Environmental Review Process

CEQA Guidelines sections 15080 through 15097 set forth the EIR process, which includes multiple phases involving notification and input from responsible agencies and the public, as described below.

1.D.1 Notice of Preparation of an Environmental Impact Report

In accordance with CEQA Guidelines sections 15063 and 15082, the planning department published and distributed a notice of preparation (NOP) of an EIR for the proposed project and variant on April 27, 2022. The NOP was sent to property owners and residents within 300 feet of the project site, public agencies, neighborhood groups, and interested parties. A virtual public scoping meeting was held on May 9, 2022, at which oral comments from the public were received and transcribed. At the public scoping meeting, eight people commented. Written comments regarding the scope of the EIR were accepted for a standard 30-day period, from April 28, 2022, to May 30, 2022. The NOP included a description of the proposed project and variant and a request for agencies and the public to submit comments on the scope of the environmental issues that should be addressed in this EIR. The NOP is included as Appendix A of this document.

In total, the planning department received comments from two agencies, one organization, and 11 individuals. The comments received in response to the NOP during the public scoping period are included in Appendix A of this document.

1.D.2 Scoping Comments

The planning department has considered the comments made by the public and agencies in preparation of this EIR, as summarized in **Table 1-1**. Comments on the NOP that relate to environmental issues are addressed and analyzed throughout this EIR and initial study (see Appendix B for the initial study). The scoping comments, as summarized in the table below, also indicate areas of controversy known to the lead agency and issues to be resolved, per CEQA Guidelines section 15123.

Table 1-1 Summary of Scoping Comments

Commenter	Summary of Comment	Draft EIR and/or Initial Study Section
AGENCIES		
California Department of Transportation (Mark Leong, District Branch Chief Local Development Review)	• Provide justification to support the exempt status if the project meets the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy	• Draft EIR Section 3.2, *Transportation and Circulation*
	• Include a detailed VMT analysis for projects that do not meet the screening criteria which contains the following: – VMT analysis pursuant to the City's guidelines. – A schematic illustration of walking, biking, and auto conditions at the project site and study area roadways. – The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities, and transit performance should be evaluated.	• Draft EIR Section 3.2, *Transportation and Circulation*
	• Analyze potential impacts to Caltrans Right-of-Way (ROW) from project-related temporary access points. • Identify mitigation for significant impacts due to construction and noise. • Coordinate with Caltrans (if applicable) to develop a Transportation Management Plan to reduce construction traffic impacts to the State Transportation Network. • Provide site plans that show the location of existing and/or proposed utilities if utilities are impacted by the project (may require a Caltrans-issued encroachment permit). • Any permanent work or temporary traffic control that encroaches onto Caltrans ROW requires a Caltrans encroachment permit. • If any Caltrans facilities are impacted by the project, those facilities must meet Americans with Disabilities Act (ADA) Standards after project completion.	• Draft EIR Section 3.2, *Transportation and Circulation* • Draft EIR Section 3.3, *Noise and Vibration*
Native American Heritage Commission (Cody Campagne, Cultural Resources Analyst)	• Comply with AB 52 requirements and complete consultation, if requested. • Follow NAHC recommendations for cultural resources assessments.	• Appendix B, Section E.3, *Cultural Resources* • Appendix B, Section E.4, *Tribal Cultural Resources*
ORGANIZATIONS		
Ingleside Terraces Homes Association (Mark V. Scardina, President)	• Analyze the project's increased traffic demand, effect on traffic congestion on nearby traffic corridors and intersections, and the resulting diversion of Stonestown-bound traffic through nearby neighborhoods.	• Draft EIR Section 3.2, *Transportation and Circulation*

Commenter	Summary of Comment	Draft EIR and/or Initial Study Section
	• Describe mitigation measures to restrict traffic through nearby neighborhoods and divert traffic onto main thoroughfares. • Analyze cumulative traffic impacts.	
	• Address parking impacts.	• Appendix B, Section D.4, *Aesthetics and Parking*
	• Address impacts on scenic vistas and views.	• Appendix B, Section D.4, *Aesthetics and Parking*
	• Consider the growth-inducing impact of the project.	• Draft EIR Chapter 4, *Other CEQA Considerations*
	• Address potential shadow impacts on nearby schools, churches, streets, sidewalks, open spaces, and residences. • Describe mitigation measures to reduce the negative impact of shadows.	• Draft EIR Section 3.6, *Shadow*
	• Analyze potential construction and operational noise impacts on surrounding neighborhoods. • Describe mitigation measures to reduce or eliminate noise impacts.	• Draft EIR Section 3.3, *Noise and Vibration*
	• Analyze potential air quality, wind, and reflective glare impacts. • Describe mitigation measures to eliminate these impacts.	• Draft EIR Section 3.4, *Air Quality* • Draft EIR Section 3.5, *Wind* • Appendix B, Section D.4, *Aesthetics and Parking*
	• Evaluate the proposed architectural style, bulk, and height of new buildings in the context of the architectural and historic character of the surrounding neighborhoods.	• Draft EIR Section 3.1, *Historic Resources*
	• Analyze the impact of the additional load on the City's electric grid, water supply, and sewage infrastructure.	• Draft EIR Section 3.7, *Utilities and Service Systems*
	• Address the increased demand for police and fire protection from the project as well as the cumulative effect of other projects in the area. • Describe mitigation measures to address the need for additional police, fire, and emergency medical personnel, equipment, and infrastructure.	• Appendix B, Section E.13, *Public Services*
	• Analyze the geology of the project site, including soil composition, stability, and support of the new buildings, potential for liquefaction, and how to reduce these hazards.	• Appendix B, Section E.15, *Geology and Soils*

Commenter	Summary of Comment	Draft EIR and/or Initial Study Section
	• Evaluate whether the demolition of existing buildings would result in exposure to hazardous materials.	• Appendix B, Section E.17, *Hazards and Hazardous Materials*
INDIVIDUALS		
Eileen Boken	• Address cumulative impacts from the residential expansions at Park Merced and San Francisco State university.	• Draft EIR Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*
	• Address potential shadow impacts on SFSU student housing.	• Draft EIR Section 3.6, *Shadow*
	• Address contextual design of towers.	• Appendix B, Section D.4, *Aesthetics and Parking* • Appendix B, Section E.1, *Land Use and Planning*
	• Address potential traffic and parking impacts.	• Draft EIR Section 3.2, *Transportation and Circulation*
	• Address how the increased demand for potable water will be met.	• Draft EIR Section 3.7, *Utilities and Service Systems*
	• Address how the project would maintain reliable power.	• Draft EIR Section 3.7, *Utilities and Service Systems*
	• Analyze if any areas of the Lake Merced watershed are included or adjacent to the project site. • Analyze the project in terms of seismic activity, liquefaction, subsidence, slope, and gradient due to its proximity to the West Basin Aquifer.	• Appendix B, Section E.16, *Hydrology and Water Quality* • Appendix B, Section E.15, *Geology and Soils*
	• Analyze how the project will take San Francisco's designation as an urban heat island into account.	• Draft EIR Section 3.4, *Air Quality*
	• Address the Ohlone indigenous peoples that lived near Lake Merced.	• Appendix B, Section E.4, *Tribal Cultural Resources*
	• Address impacts related to transit and transportation taking into consideration the SFMTA and M Ocean View streetcar line extensions.	• Draft EIR Section 3.2, *Transportation and Circulation*
	• Address impacts related to evacuation plans in the event of fire or a seismic event. • Analyze the capability of nearby fire stations to handle increased emergencies.	• Appendix B, Section E.13, *Public Services*
Paul A. Conroy	• Address potential project impacts related to increased traffic flow and congestion, overflow parking, and public vistas.	• Draft EIR Section 3.2, *Transportation and Circulation*

Commenter	Summary of Comment	Draft EIR and/or Initial Study Section
		• Appendix B, Section D.4, *Aesthetics and Parking*
	• Analyze the project's consistency with the Urban Design element specific policies including: – Policy No 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water. – Policy No. 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts. – Policy No. 2.6: Respect the character of older development nearby in the design of new buildings. – Policy No. 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development. – Policy 4.1: Protect residential areas from the noise, pollution and physical danger of excessive traffic.	• Appendix B, Section D.4, *Aesthetics and Parking* • Appendix B, Section C, *Compatibility with Existing Zoning and Plans*
	• Consider an alternative that would not require a change to the existing height limitations of the zoning code.	• Draft EIR Chapter 5, *Alternatives*
	• Analyze the initial purpose of the Stonestown Mall and consider the benefits to the surrounding neighborhoods as expressed in the Planning Department documents governing the establishment of the mall. • Determine the negative impacts caused by the deviation from the parameters originally established for the Stonestown Mall.	• Appendix B, Section E.1, *Land Use and Planning*
Dave Full	• Revise the project description to correct for the inaccuracies and confusing information.	• Draft EIR Chapter 2, *Project Description*
	• Address changes to transportation levels of surface due to the COVID-19 pandemic as well as the change in vehicle trips on 20th Avenue, Winston Drive, Buckingham Way, and 19th Avenue. • Analyze the weekday AM peak hour, weekday PM peak hour, and Saturday peak hour surface traffic. • Analyze how the proposed project will meet the SF Safe Streets Program • Address the ability of the M-Oceanview MUNI Metro Line to accommodate the increase in ridership due to the project. • Analyze the impacts associated with the project's construction related traffic and identify the routes for construction-related vehicles.	• Draft EIR Section 3.2, *Transportation and Circulation*

Commenter	Summary of Comment	Draft EIR and/or Initial Study Section
	• Analyze potential construction-related noise for the project.	• Draft EIR Section 3.3, *Noise and Vibration*
	• Discuss whether Stonestown is eligible to be listed as a cultural resource on the National Register of Historic Places.	• Draft EIR Section 3.1, *Historic Architectural Resources*
	• Analyze the shadows on Ralph Nicol Playground and the Merced manor reservoir from the 90-foot-tall buildings at NW1, NW2, W1, W2, W3, and E5.	• Draft EIR Section 3.6, *Shadow*
	• Analyze cumulative impacts associated with other development in the vicinity of Stonestown, including the development of Park Merced and development at San Francisco State University.	• Draft EIR Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*
Stuart Gardiner	• Address impacts related to aesthetics, especially due to the height of the proposed buildings.	• Appendix B, Section D.4, *Aesthetics and Parking*
Sandy Gandolfo	• Describe the residential use of the project and who the project is intended to serve.	• Draft EIR Chapter 2, *Project Description*
Steve Marzo	• Address impacts related to parking.	• Appendix B, Section D.4, *Aesthetics and Parking*
	• Address impacts related to greenhouse gas emissions and how proximity to public transit can help reduce this.	• Appendix B, Section E.8, *Greenhouse Gas Emissions*
Ramesh Patel	• Address impacts related to traffic for the neighborhood and proposed parking. • Address impacts related to pedestrian safety.	• Appendix B, Section D.4, *Aesthetics and Parking* • Draft EIR Section 3.2, *Transportation and Circulation*
Cory Silver	• Address impacts related to population and housing growth.	• Appendix B, Section E.2, *Population and Housing*
Patrick Skain	• Address impacts related to traffic, specifically regarding the exit from Buckingham eastbound at 19th Avenue and the SamTrans.	• Draft EIR Section 3.2, *Transportation and Circulation*
	• Address impacts related to water and sewer lines being able to adequately serve the project.	• Draft EIR Section 3.7, *Utilities and Service Systems*
John Stacey	• Address project impacts related to the residential traffic.	• Draft EIR Section 3.2, *Transportation and Circulation*
Nikita Yakubovich	• No new housing construction in San Francisco and Bay Area should be developed due to critical water shortages.	• Draft EIR Section 3.7, *Utilities and Service Systems*

1.D.3 Draft EIR and Initial Study Public Review Process

The CEQA Guidelines and San Francisco Administrative Code chapter 31 encourage public participation in the planning and environmental review processes. The planning department provides opportunities for the public to present comments and concerns regarding this EIR and its appendices, including the initial study (Appendix B), throughout the environmental review process. These opportunities include a public review and comment period and a public hearing before the San Francisco Planning Commission (planning commission).

The public review period for the draft EIR is from **December 14, 2022, to February 13, 2023**. The historic preservation commission will hold a public hearing to consider providing its comments on the draft EIR. The historic preservation commission public hearing will be held January 18, 2023, beginning at 12:30 p.m. or later. The planning commission will hold a public hearing during the 60-day public review and comment period for this draft EIR to solicit public comment on the information presented in this draft EIR. The public hearing will be held on **February 9, 2023**, beginning at **1 p.m. or later**. Additional information may be found on the planning department's website at https://sfplanning.org/.

The draft EIR, initial study, and all attachments are available for public review and comment on the planning department's Negative Declarations and EIRs web page (http://www.sf-planning.org/sfceqadocs). A USB or paper copy of the draft EIR will be mailed upon request. Referenced materials will also be made available for review upon request. Contact the EIR coordinator, Florentina Craciun, at CPC.Stonestown@sfgov.org or 628.652.7510, to make a request.

Governmental agencies, interested organizations, and other members of the public are invited to submit written comments on the draft EIR and initial study during the public review period. The comments should address the sufficiency of the document with respect to identifying and analyzing possible significant environmental impacts and determining how they may be avoided or mitigated.

All written comments or questions about the draft EIR should be addressed to:

San Francisco Planning Department
Attention: Florentina Craciun, Environmental Coordinator
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
CPC.Stonestown@sfgov.org

Members of the public are not required to provide personal identifying information when they communicate with the planning commission. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the planning department's website or in other public documents.

1.D.4 Senate Bill 7

The project sponsor intends to submit an application with the Governor's Office of Planning and Research for certification of the proposed project or variant as an environmental leadership development project under the Jobs and Economic Improvement through Environmental Leadership Act of 2021 (Senate Bill [SB] 7).

SB 7[3] provides streamlining benefits under CEQA, as described further below, for environmental leadership development projects and defines an environmental leadership development project as the following:

- The project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature;
- The project, upon completion, will qualify for Leadership in Energy and Environmental Design gold certification or better;
- The project will achieve at least 15 percent greater standard for transportation efficiency than comparable projects;
- The project is located on an infill site;
- For housing development within a metropolitan planning organization's jurisdiction for which a sustainable communities strategy or alternative planning strategy is in effect, the infill project is consistent with the general use designation, density, building intensity and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the California Air Resources Board has accepted that the strategy would achieve the greenhouse gas (GHG) emission reduction targets.[4]

In order for the Governor to certify a leadership project, the project must: (1) result in a minimum investment of $100 million dollars in California upon completion of construction; (2) create high-wage, highly skilled jobs that pay prevailing wages and living wages and provide construction jobs and permanent jobs for Californians, and help reduce unemployment; (3) not result in any net additional GHG emissions; (4) comply with requirements for commercial and organic waste recycling; (5) have a binding agreement with the lead agency establishing the mitigation measure and record of proceeding requirements set forth in Public Resources Code sections 21183(e) and (g); (6) agree to pay the costs of the trial court and the Court of Appeal in hearing and deciding any case; and agree to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project, in a form and manner specified by the lead agency for the project.[5] Multifamily residential projects certified as environmental development leadership projects are also required to provide unbundled parking, such that private vehicle parking spaces are priced and rented or purchased separately from dwelling units.[6]

In accordance with the requirements of SB 7, the planning department provided a record of proceedings for the proposed project and variant that can be accessed and downloaded from the following website: www.stonestownadminrecord.com. The record of proceedings includes the EIR and all other documents and materials submitted to, or relied upon by, the lead agency in the preparation of the EIR or the approval of the project. In addition, a document prepared by the lead agency or submitted by the applicant after the date of the release of the draft EIR that is a part of the record of proceedings, and comments received on the draft EIR, will be made available to the public on this same website in a readily accessible electronic format within the timeframes specified by the act.

[3] California Public Resources Code section 21178 et seq. and Governor's Office of Planning and Research, California Jobs (AB 900), *Governor's Guidelines for Streamlining Judicial Review Under the California Environmental Quality Act Pursuant to AB 900, Updated to Comply with Senate Bill 734 and Assembly Bill 246*, accessed July 22, 2019, http://opr.ca.gov/ceqa/california-jobs.html.
[4] California Public Resources Code section 21180(b).
[5] California Public Resources Code section 21183.
[6] California Public Resources Code section 21184.5(a).

Within 10 days of the governor certifying the proposed project as an environmental leadership development project, the planning department is required to issue a public notice in no less than 12-point type stating the following:

> "THE APPLICANT HAS ELECTED TO PROCEED UNDER CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF DIVISION 13 OF THE PUBLIC RESOURCES CODE, WHICH PROVIDES, AMONG OTHER THINGS, THAT ANY JUDICIAL ACTION CHALLENGING THE CERTIFICATION OF THE ENVIRONMENTAL IMPACT REPORT (EIR) OR THE APPROVAL OF THE PROJECT DESCRIBED IN THE EIR IS SUBJECT TO THE PROCEDURES SET FORTH IN SECTIONS 21185 TO 21186, INCLUSIVE, OF THE PUBLIC RESOURCES CODE. A COPY OF CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF DIVISION 13 OF THE PUBLIC RESOURCES CODE IS INCLUDED BELOW."

As required by Public Resources Code section 21185, the Judicial Council adopted rules of court that establish procedures applicable to actions or proceedings brought to attack, review, set aside, void, or annul the certification of the environmental impact report for an environmental leadership development project (certified by the governor pursuant to this act) or the granting of any project approvals that require the actions or proceedings, including any potential appeals therefrom to the Court of Appeals or the Supreme Court, be resolved, to the extent feasible within 270 days of the filing of the certified record of proceedings with the court. This creates an accelerated timeframe for CEQA litigation. The procedures can be found in California Rules of Court.

The provisions of SB 7 apply to projects that have been certified by the governor as environmental leadership development projects by January 1, 2024, and the project is approved by the lead agency by January 1, 2025. This act remains in effect until January 1, 2026.

1.D.5 Final EIR and EIR Certification

Following the close of the public review and comment period for this draft EIR, the City will prepare and publish a document titled "Responses to Comments." This document will contain all written, email, and recorded oral comments received on this draft EIR and written responses to those comments, along with copies of the letters or emails received, a transcript of the public hearing on the draft EIR, and any necessary revisions to the draft EIR. The draft EIR and the responses to comments document will constitute the final EIR. Not less than 10 days prior to the planning commission hearing to consider certification of the final EIR, the final EIR will be made available to the public and any boards, commissions or departments that will carry out or approve the proposed project or variant.

The planning commission, in an advertised public meeting, will consider the documents and, if found adequate, accurate, and objective, certify the final EIR, provided it (1) was completed in compliance with CEQA; (2) was presented to the San Francisco Planning Commission and the planning commission reviewed and considered the information contained in the final EIR prior to taking an approval action on the proposed project and variant; and (3) reflects the lead agency's independent judgment and analysis, per Chapter 31 of the San Francisco Administrative Code. CEQA requires that agencies shall neither approve a project nor implement a project unless the project's significant environmental impacts have been reduced to a less-than-significant level, thereby essentially eliminating, avoiding, or substantially lessening the potentially significant impacts of the proposed project or variant, except when certain findings are made. If an agency

approves a project that would result in the occurrence of significant adverse impacts that cannot feasibly be mitigated to less-than-significant levels (that is, significant and unavoidable impacts), the agency must state the reasons for its action in writing; demonstrate that mitigation is infeasible based on the EIR or other information in the record; and adopt a statement of overriding considerations.

1.D.6 Mitigation Monitoring and Reporting Program

At the time of project approval, CEQA and the CEQA Guidelines require agencies to adopt a mitigation monitoring and reporting program that it has made a condition of project approval in order to mitigate or avoid significant impacts on the environment (CEQA section 21081.6; CEQA Guidelines section 15097). This EIR identifies and presents mitigation measures that would form the basis of such a mitigation and monitoring and reporting program. Any mitigation and improvement measures adopted by the City as conditions of approval of the proposed project or variant would be included in the mitigation monitoring and reporting program.

1.E Organization of This EIR

Consistent with CEQA Guidelines sections 15120 to 15132, this draft EIR describes the proposed project and variant, required approvals, and existing land use plans and policies applicable to the proposed project and variant; identifies potential environmental impacts of the proposed project and variant, mitigation measures where those impacts are significant, and cumulative adverse impacts to which the proposed project and variant could make a substantial contribution; discusses growth-inducing and significant unavoidable effects of the project; and evaluates alternatives to the proposed project and variant that could avoid or reduce significant impacts while still meeting most of the project's objectives.

This draft EIR has been organized as follows:

- **Summary.** This chapter summarizes the EIR by providing an overview of the proposed project and variant, the environmental impacts that would result from the proposed project and variant, mitigation measures and improvement measures identified to reduce or eliminate the impacts, project alternatives and their comparative environmental effects, and areas of controversy and issues to be resolved.
- **Chapter 1, Introduction.** This chapter includes a discussion of the purpose of the EIR, a discussion of the environmental review process, a summary of the comments received on the scope of the EIR, a summary of changes to the project since publication of the NOP, and a brief outline of the document's organization.
- **Chapter 2, Project Description.** This chapter provides a detailed description of the proposed project and variant, including the project's objectives, the project location, the existing project site's land use characteristics, project components and characteristics, the construction schedule and anticipated activities, and identifies required project approvals.
- **Chapter 3, Environmental Setting, Impacts, and Mitigation Measures.** This chapter provides the analysis for the resource topics identified for further analysis in the initial study (see Appendix A). Each environmental topic is discussed in a separate section within this chapter, and each section describes the existing and/or baseline conditions relative to that resource; the applicable regulatory framework; the significance criteria used to assess the severity of the impacts; the approach to and methodologies used in the impact analysis; and the individually numbered impact statements and associated analysis of

project-specific and cumulative impacts of the proposed project and variant and a determination of the significance of each impact. For impacts determined to be significant, mitigation measures that would reduce or avoid those impacts are presented. This chapter contains the following sub-sections and environmental resource topics: historic architectural resources, transportation and circulation, noise, air quality, wind, shadow, and utilities and service systems.

- **Chapter 4, Other CEQA Issues.** Pursuant to CEQA Guidelines section 15126.2, this chapter summarizes any growth-inducing impacts that could result from the proposed project and variant, irreversible changes to the environment, and significant and unavoidable environmental impacts. This chapter also presents any areas of controversy left to be resolved.
- **Chapter 5, Alternatives.** This chapter presents and evaluates alternatives to the proposed project and variant, including the required No Project Alternative, that could feasibly attain most of the project objectives as well as reduce identified significant adverse impacts of the proposed project and variant. This chapter also compares their environmental effects to those of the proposed project and variant. It also identifies the environmentally superior alternative. Alternatives evaluated in this chapter include the following:
  - Alternative A, No Project Alternative
  - Alternative B, Full Preservation Alternative
  - Alternative C, Partial Preservation and Relocated Parking Alternative
  - Alternative D, Code Compliant Alternative
  - Alternative E, Reduced Density Alternative
- **Chapter 6, Report Preparers.** This chapter lists the EIR authors and consultants; project sponsor and consultants; and agencies and persons consulted.
- **Appendices.** The following appendices are included in this EIR:
  - Appendix A, Notice of Preparation and Comments Received
  - Appendix B, Initial Study
  - Appendix C.1, Historic Resource Evaluation, Part I
  - Appendix C.2, Historic Resource Evaluation Response, Part I
  - Appendix C.3, Historic Resource Evaluation Response for 501 Buckingham Way, Part II
  - Appendix D.1, Travel Demand Memorandum
  - Appendix D.2, Stonestown Galleria Transit Analysis Memorandum
  - Appendix E, Noise Technical Memorandum
  - Appendix F, Air Quality and Health Risk Assessment Results
  - Appendix G, Pedestrian Wind Study
  - Appendix H, Shadow Analysis Report
  - Appendix I, Water Supply Assessment

INTENTIONALLY BLANK

CHAPTER 2
PROJECT DESCRIPTION

2.A Project Overview

The project sponsor (Brookfield Properties Development) would redevelop the approximately 27 acres of surface parking and surrounding structures in the 41-acre Stonestown Galleria shopping mall site into a master-planned, multi-phased, mixed-use community as detailed below. Under the proposed project, approximately 710,000 square feet of the existing mall would remain, with changes to the façade, entrances, and exits. Four structures would be demolished and redeveloped as part of the project: the existing parking garage in the southwest corner of the project site; the vacant theater at the northwest corner of the site; and the CitySports and commercial building at the northeast corner of the site.

Overall, the proposed project would include:

- Up to 2,930 residential units
- Up to 160,000 square feet of new retail sales and service use
- Up to 200,000 square feet of non-retail sales and service use
- Up to 100,000 square feet of hotel use
- Approximately 53,000 square feet of institutional uses, to include an approximately 15,000-square-foot childcare facility and space for community use
- Approximately 4,250 parking spaces
- Approximately 6 acres of open space
- Infrastructure modifications

The EIR includes one variant to the proposed project, which would include the development of the parcel that is currently occupied by Authentic Church (Block/Lot 7295/002) at 3355 19th Avenue, adjacent to the project site between Eucalyptus and Winston drives. Under the variant, in addition to the proposed project, the 0.8-acre Authentic Church parcel would be developed and include approximately 150 additional residential units; approximately 10,000 additional square feet of institutional use; and approximately 200 additional parking spaces in a partially below grade parking structure.

The proposed project would require amendments to the San Francisco General Plan, San Francisco Planning Code and Zoning Map, including the creation of a new SUD. The proposed rezoning would modify the existing applicable height limits of 40 and 65 feet to heights between 90 and 190 feet but would retain the existing height limits on the Stonestown Galleria parcels.

The proposed project also would include transportation, circulation, and utility infrastructure improvements. Transportation and circulation improvements include straightening 20th Avenue between Eucalyptus Drive and Winston Drive. The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be straightened and converted to a two-way connection to 19th

Avenue (Street A). In addition, Street A would become a two-way connection to 19th Avenue. Buckingham Way would be reduced from four travel lanes to two along the west side of the site and Winston Drive would be reduced from four travel lanes to three between 20th Avenue and Buckingham Way. The roadway network changes would be designed to be accessible for all modes of transportation, including vehicles, bicycles, and pedestrians. The proposed project also would upgrade the existing utility infrastructure to provide the proposed uses with potable water, recycled water, emergency water, wastewater collection, stormwater collection and treatment, electricity, and communications.

2.B Project Objectives

The project sponsor seeks to achieve the following objectives[7] by undertaking the proposed project and project variant:

1. Redevelop the underutilized portions of the project site, including surface parking lots, structured parking, and vacant structures surrounding Stonestown Galleria, to create a new neighborhood that reflects excellence in urban design principles; that provides a mix of residential, retail, commercial, hotel, public gathering spaces, and community uses to support a vibrant town center; and that benefits the existing surrounding neighborhoods, Stonestown Galleria, and the future new residents.
2. Contribute to meeting the San Francisco General Plan Housing Element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for San Francisco by maximizing the number of dwelling units throughout the Project site and providing housing in proximity to local and regional public transportation.
3. Build a mixed-income residential community that provides housing at a range of affordability levels, with a wide range of building styles, heights, dwelling unit types, tenure, and supporting on-site amenities; that attracts a diversity of household compositions, including children, adults, and seniors; and that increases business and employment opportunities.
4. Prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to open space and to the existing surrounding residential neighborhood of Merced Manor.
5. Add new residents, open space amenities, and complementary retail to bring more shoppers to the site while supporting the continued operations of the existing Stonestown Galleria and create synergies among uses on the site.
6. Link the retail-centric heart of the project, located around the existing Stonestown Galleria and the new 20th Avenue corridor, to the existing and proposed adjacent residential areas through a network of pedestrian pathways, plazas, and parks.
7. Focus the customer journey by concentrating a variety of retail, restaurant, commercial uses, and supportive parking within the retail-centric heart of the site located around the existing shopping center and the new 20th Avenue corridor in order to optimize foot traffic for retail tenants and maximize cross-shopping opportunities by shoppers and visitors to the project.

[7] The project objectives are numbered for convenience only and do not represent a prioritization of the objectives.

8. Provide space to accommodate other commercial uses, including hotel, small office, medical office, and other neighborhood-serving uses complementary to a town center and to serve project residents as well as visitors of the site.
9. Provide active public gathering spaces adjacent to Stonestown Galleria to promote and improve opportunities for mingling and connection for people of all ages and abilities.
10. Build adequate parking and loading access to serve the needs of project residents, workers, retailers, visitors, and the existing Stonestown Galleria and concentrate parking near the retail centric core of the project site.
11. Create a circulation and transportation system that emphasizes transit-oriented development, maximizes foot traffic to the shopping center, and provides pedestrian and bicycle connections to and from the Project site to adjacent neighborhoods and recreational areas such as Ocean Beach, Rolph Nicol Jr. Playground, Lake Merced, and Stern Grove.
12. Improve the infrastructure at the project site, including new streets and sidewalks, bicycle and pedestrian amenities, multiuse paths, water, sewer, gas/electric utilities, and new fire hydrant infrastructure.
13. Build a neighborhood resilient to sea level rise and earthquakes and demonstrate leadership in sustainable development by constructing improvements intended to reduce the neighborhood's per capita consumption of electricity, natural gas, and potable water, and generation of wastewater.
14. Create a development that is financially feasible and that can fund the project's capital costs and ongoing operation and maintenance costs relating to the redevelopment and long-term operation of the property.

2.C Project Location and Existing Site Characteristics

The proposed Stonestown Development Project is located on an approximately 41-acre site in the Lakeshore area in southwest San Francisco (see **Figure 2-1**). The project site is generally bounded by San Francisco State University (SFSU) Campus to the south; Lowell High School, SFSU housing, and Buckingham Way to the west; Stonestown Family YMCA, commercial uses, and Eucalyptus Drive to the north; and 19th Avenue to the east (see **Figure 2-2**, p. 2-5). The project site is fully developed and comprises the 11-acre Stonestown Galleria, approximately 27 acres of surface parking lots and operational uses, a vacant building, and 3 acres of streets.

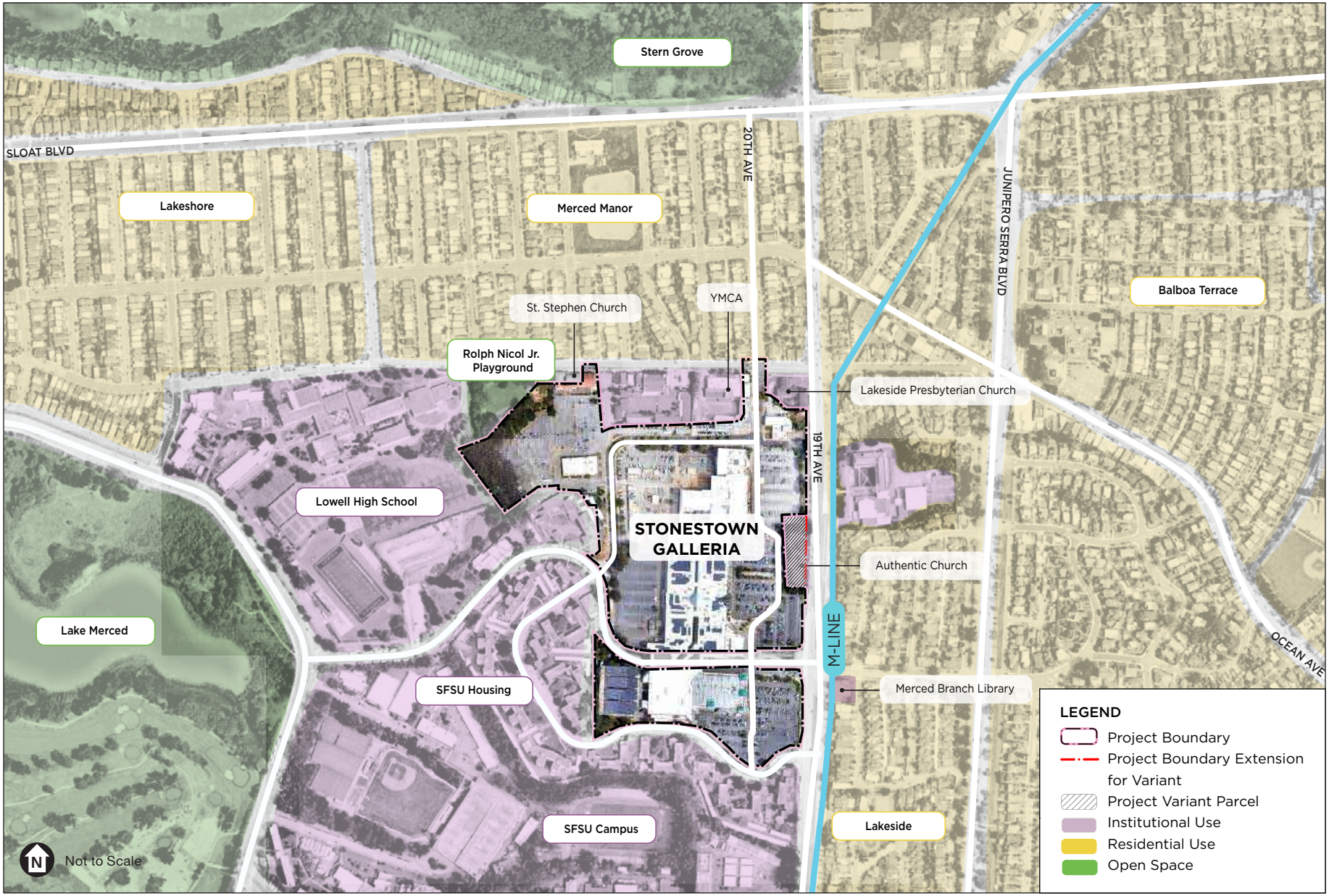
Existing buildings at the project site consist of (i) the approximately 775,000-square-foot Stonestown Galleria, which contains over 100 stores and key anchor tenants including Target, Regal Cinemas, Sports Basement, Trader Joe's, and Whole Foods; (ii) a five-story, 700-space parking garage located in the southwest corner of the site between Buckingham Way and Winston Drive; (iii) an underground parking garage with 250 parking spaces located below the shopping mall; and (iv) the 30,000-square-foot Authentic Church located at 3355 19th Avenue between Eucalyptus and Winston drives.

The 27 acres that would be redeveloped as part of the proposed project contain mainly surface parking areas including approximately 2,450 parking spaces and operational uses such as trash rooms, loading areas, tenant construction staging zones, along with some existing structures, including a one-story vacant theater at the northwest corner of the site, CitySports building, and a two-story commercial building at the northeast

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-1
PROJECT LOCATION



SOURCE: ESA, 2022; Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-2
PROJECT SITE AND ADJACENT LAND USES

corner of 20th Avenue and Buckingham Way currently occupied with a bank, Stonestown Family YMCA Annex for adults and seniors, and a pet supply store. The 3 acres of streets in the project site include privately owned portions of 20th Avenue from Eucalyptus Drive to Buckingham Way and Buckingham Way from 20th Avenue to Winston Drive. Winston Drive is an east-west roadway that is publicly owned and runs through the site from Buckingham Way to 19th Avenue, including an underground portion below the mall known as Winston Tunnel.

The project site is adjacent to 19th Avenue (also known as Highway 1), a major north-south roadway. Other major roadways in the vicinity include the north-south Interstate 280 (I-280) freeway approximately 1.2 miles to the south, and Ocean Avenue and Sloat Boulevard, major east-west roadways approximately 0.15 and 0.3 mile to the north, respectively. The project site is served by the city's transit network and is adjacent to the Muni M-Ocean View light rail and 28-19th Avenue bus stops at the corner of 19th Avenue and Winston Drive. Other Muni bus lines that operate within the project site on Winston Drive and Buckingham Way include the 18-46th Avenue, 29-Sunset, 57-Parkmerced, and 58-Lake Merced. The project site also is served by SamTrans Route 122 with stops on Winston Drive and Buckingham Way.

Primary vehicular access into and out of the project site is at 19th Avenue and Winston Drive. Secondary access points are located at Eucalyptus Drive and 20th Avenue at the north end of the site, Winston Drive and Buckingham Way at the west end of the site, and 19th Avenue and Buckingham Way at the south end of the site. 20th Avenue is a north-south private road through the project site connecting Eucalyptus Drive and Winston Drive. 20th Avenue has four lanes (two lanes in each direction) between Eucalyptus Drive and Buckingham Way, and two lanes (one lane in each direction) between Buckingham Way and Winston Drive.

Buckingham Way encircles the north, west, and south side of the project site and provides connections to 20th Avenue, Winston Drive, and 19th Avenue. It has four lanes (two lanes in each direction) between 20th Avenue and Winston Drive, and two lanes (one lane in each direction) around the south side of the site between Winston Drive and 19th Avenue. Between 19th and 20th avenues, Buckingham Way is a two-lane, one-way off-ramp to 19th Avenue. Winston Drive is an east-west road through the project site connecting 19th Avenue and Buckingham Way. Winston Drive between 19th and 20th avenues has six lanes (three lanes in each direction) and four lanes (two lanes in each direction) between 20th Avenue and Buckingham Way.

2.C.1 Adjacent Land Uses

Adjacent land uses consist primarily of institutional, residential, and open space. Directly north of the project site is Stonestown YMCA, St. Stephen Church and Catholic School, and commercial and medical offices. To the north of the project site, across Eucalyptus Drive is the residential neighborhood of Merced Manor. The 142-acre SFSU Campus is directly south of the project site. San Francisco Fire Department Station 19 is located on the southwest corner of Buckingham Way and Winston Drive approximately 75 feet from the project site's western border. Directly west of the north end of the project site is Lowell High School, a public school, and the 3-acre Rolph Nicol Jr. Playground.

Directly northeast of the project site is the Lakeside Presbyterian Church at the southwest corner of Eucalyptus Drive and 19th Avenue. Directly east of the site between 19th and 20th avenues is the Authentic

Church. To the east of the project site across 19th Avenue is the Lakeside residential neighborhood, Merced Branch Library, and nonoperational campus of the former Mercy High School.[8,9]

2.C.2 Zoning and General Plan Land Use Designations

The project site is within C-2 (Community Business), RH-1(D) (Residential-House, One Family-Detached),and RM-1 (Residential-Mixed, Low Density) Use Districts and located in 40-X and 65-D Height and Bulk Districts (see **Figure 2-3**).

2.D Project Characteristics and Components

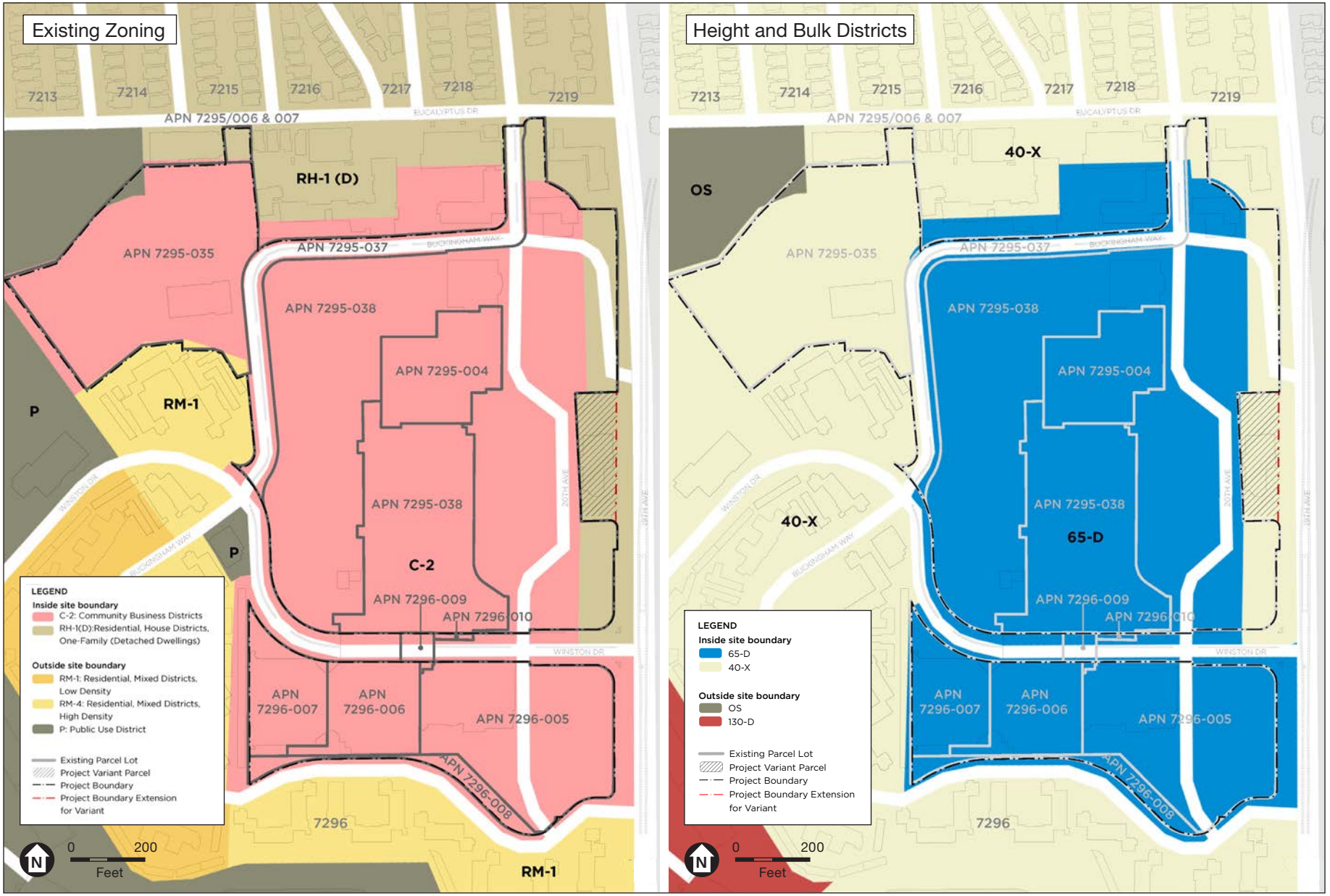
The proposed project would create a new SUD that would rezone the project site and establish development controls for construction of a multi-phased, mixed-use project. The proposed project would include amendments to the general plan and planning code to create the SUD. The SUD would establish land use zoning controls and incorporate design standards and guidelines for the site in a new Design Standards and Guidelines (DSG) document. The proposed project would include residential uses of varying affordability and types; retail sales and service uses; non-retail sales and service uses;[10] a hotel; institutional uses; and parking (see **Figure 2-4**, p. 2-9). The proposed project would include approximately 6 acres of publicly accessible open space in the form of parks, plazas, and parkways throughout the project site. Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives and straightening the northeast portion Buckingham Way (shown as Street A in Figure 2-4). The zoning map would be amended to show changes from the current zoning to the proposed SUD zoning. The existing height limits of 40 to 65 feet would be modified on all parcels other than the mall parcels to allow heights ranging from 30 to 190 feet. The existing height limit applicable to the mall parcels would not be modified (see **Figure 2-5**, p. 2-10).

2.D.1 Variant

The EIR also analyzes a variant, which would include the 0.8-acre parcel containing the Authentic Church (Block/Lot 7295/002), shown in **Figure 2-6**, p. 2-11, in the eastern portion of the site. The existing two-story, 30,000-square-foot church would be demolished and an additional approximately 150 residential units; approximately 10,000 square feet of institutional uses; and approximately 200 parking spaces would be developed on the site. The redevelopment of the 27 acres surrounding the Stonestown Galleria would be the same as the proposed project under this variant. The 90-foot height limit for Block E3 would be extended to encompass the church site (see Figure 2-5, p. 2-10).

Table 2-1, p. 2-12, summarizes the project characteristics of the proposed project and the variant, including the types and amounts of land uses, proposed dwelling units, building heights, vehicle and bicycle parking, and other features.

[8] The Mercy High School campus was purchased by the Chinese American International School (CAIS) and the transfer of the property was completed in December 2021. The CAIS is anticipated to consolidate their operations from other locations in San Francisco at the campus for preschool to eighth grade in the 2023-2024 school year.
[9] CAIS, *19th Avenue Campus FAQs,* 2022, https://www.cais.org/19thAveCampusFAQs, accessed January 10, 2022; Mercy High School, Home Page, 2021, https://www.mercyhs.org/, accessed January 10, 2022.
[10] "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102).

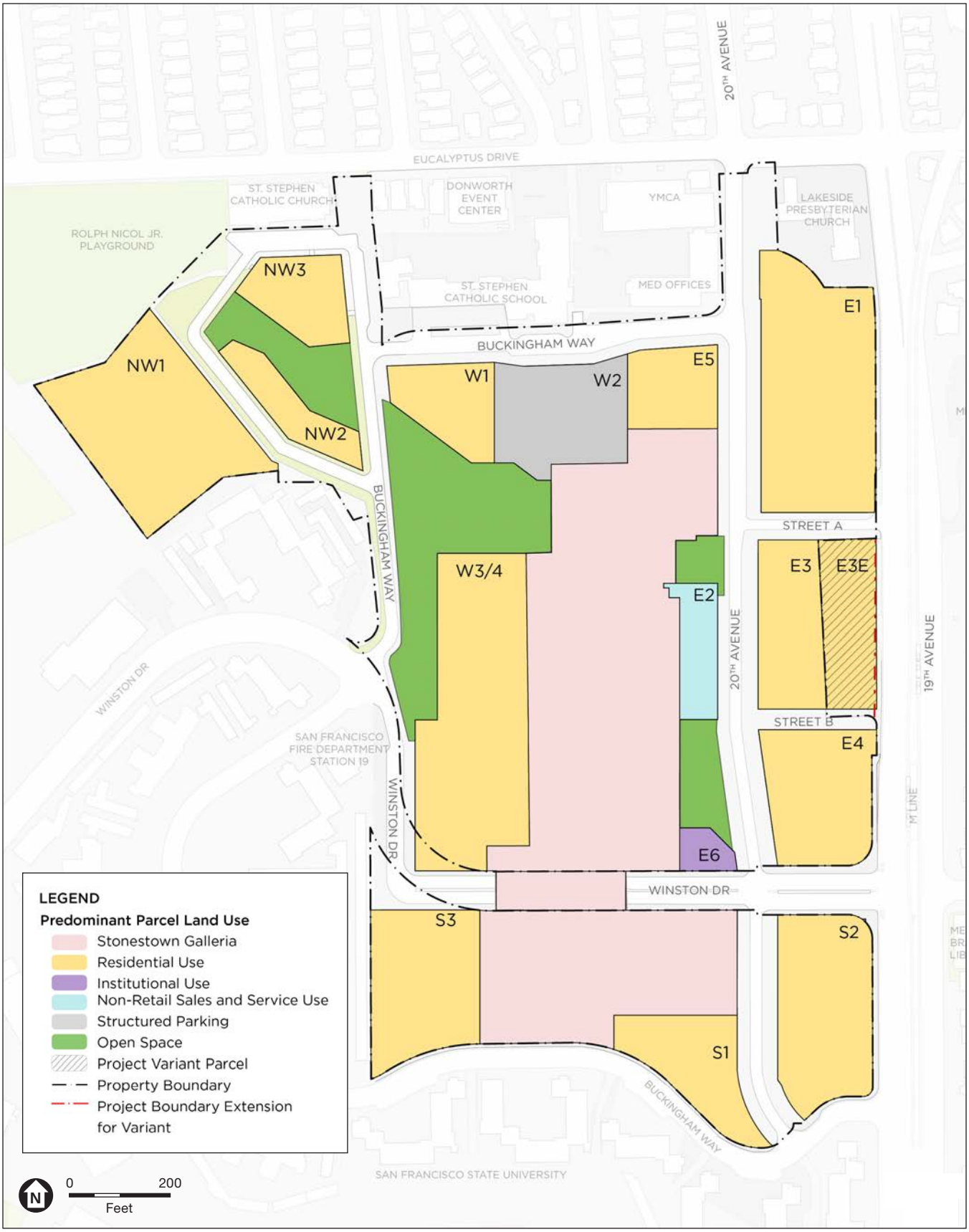


SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-3

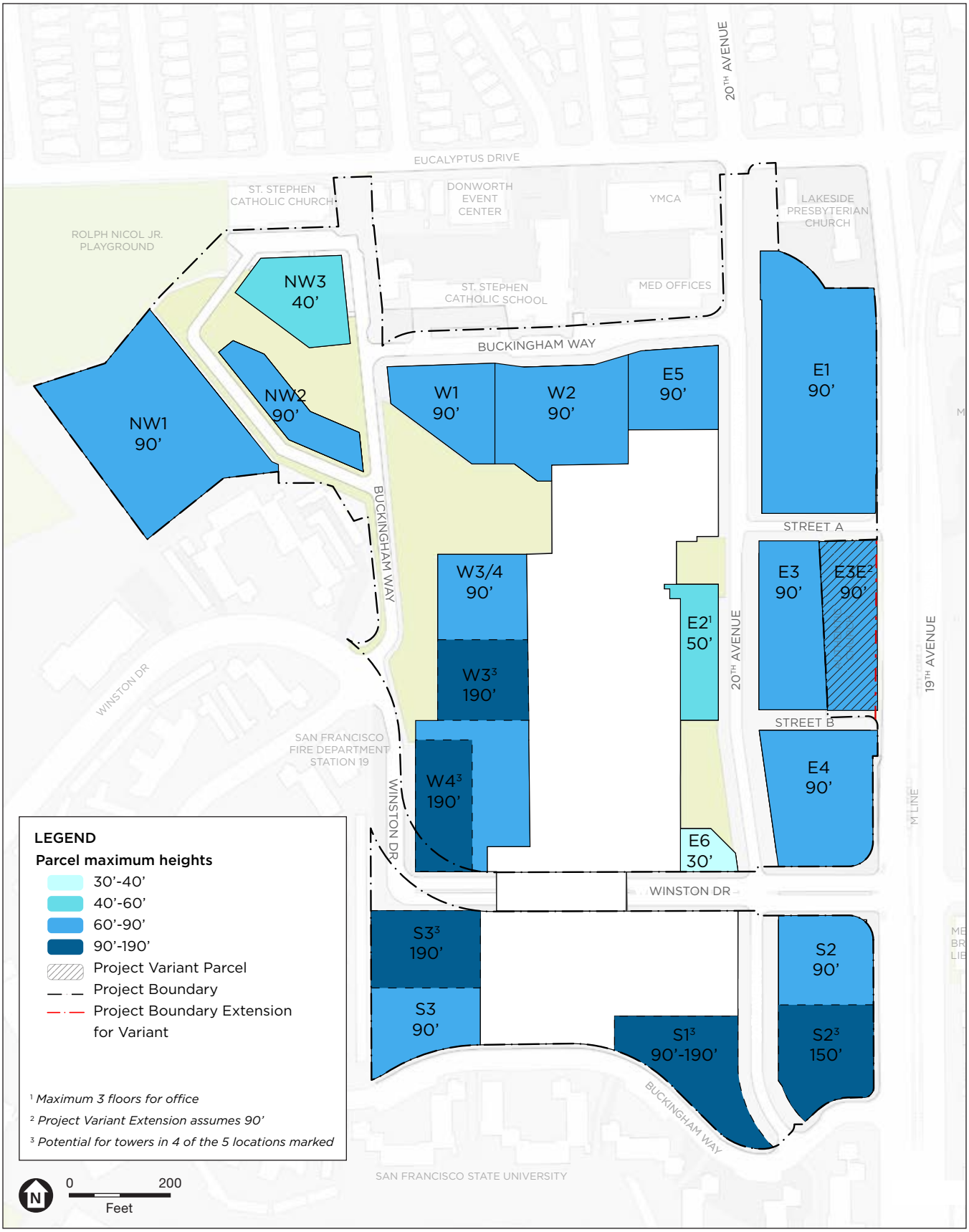
EXISTING ZONING AND HEIGHT AND BULK DISTRICTS ON PROJECT SITE



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-4
PROPOSED LAND USE PLAN



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-5
PROPOSED HEIGHT PLAN

SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-6

CONCEPTUAL AXON DIAGRAM OF THE PROPOSED PROJECT

Table 2-1 Project Characteristics (including the Variant)

Project Characteristics	Existing	Proposed Project		Proposed Project Including Variant	
PROPOSED LAND USE PROGRAM	**AREA (APPROXIMATE SQUARE FEET)**				
Residential Use	0	Up to 3,100,000 new		Up to 3,200,000 new	
Retail Sales and Services Use[a]	760,000 sf mall 13,300 sf, 30-foot-tall vacant theater 15,000 sf, 15- to 30-foot-tall commercial building	**Up to 160,000** 710,000[d] sf of the existing mall retained 13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		**Up to 160,000** 710,000[d] sf of the existing mall retained 13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished 81,700f net new	
Non-Retail Sales and Service Use[b]	0	Up to 200,000 net new		Up to 200,000 net new	
Hotel	0	Up to 100,000 (up to 200 rooms) net new		Up to 100,000 (up to 200 rooms) net new	
Institutional Use[c]	30,000 sf, 30-foot-tall church	**Up to 53,000 net new**		**Up to 63,000** 30,000 sf church demolished 33,000 sf net new	
PROPOSED DWELLING UNITS		**NUMBER (APPROXIMATE)**	**PERCENTAGE (APPROXIMATE)**	**NUMBER (APPROXIMATE)**	**PERCENTAGE (APPROXIMATE)**
Studio	N/A	586	20%	616	20%
1-bedroom	N/A	1,172	40%	1,232	40%
2-bedroom	N/A	879	30%	924	30%
3-bedroom	N/A	293	10%	308	10%
Total Dwelling Units		***2,930***	***100%***	***3,080***	***100%***
PROPOSED PARKING	**NUMBER (APPROXIMATE)**				
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,250** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +190 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining 3,040 spaces distributed throughout site *850 net new spaces*[e]		**4,450** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +190 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining 3,240 spaces distributed throughout site *1,050 net new spaces*[e]	
Car-share parking spaces	0	66		68	

Project Characteristics	Existing	Proposed Project	Proposed Project Including Variant
BICYCLE PARKING	**NUMBER (APPROXIMATE)**		
Bicycle parking class 1	33	885	923
Bicycle parking class 2	67	245	253
Total Bicycle Parking	***100***	***1,130 net new***	***1,176 net new***
OPEN SPACE	**AREA**		
Publicly accessible open space	1.6 acres	Approximately 6 net new acres	
Private residential open space	N/A	Approximately 36 square feet per unit if located on balcony, or approximately 48 square feet per unit if commonly accessible to residents, or as otherwise refined in the planning code.	
BUILDING CHARACTERISTICS			
Stories	1 to 3 stories	3 to 18 stories	
Height	15 to 65 feet	30 to 190 feet	
Ground floor	Retail sales and service	All blocks would include ground floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street	

NOTES

[a] "Retail Sales and Service Use" is a use category that includes, but not limited to: the sale of goods, typically in small quantities, or services directly to the ultimate consumer or end user with some space for retail service on site, excluding Retail Entertainment Arts and Recreation, and Retail Automobile Uses and including, but not limited to: Adult Business, Animal Hospital, Bar, Cannabis Retail, Chair and Foot Massage, Tourist Oriented Gift Store, General Grocery, Specialty Grocery, Gym 2 Hotel, Jewelry Store, Kennel, Laundromat, Liquor Store, Massage Establishment, Mortuary (Columbarium), Motel, Non-Auto Sales, Pharmacy, Restaurant, Limited Restaurant, General Retail Sales and Service, Financial Service, Fringe Financial Service, Limited Financial Service, Health Service, Personal Service, Retail Professional Service, Self-Storage, Tobacco Paraphernalia Establishment, and Trade Shop (planning code section 102).

[b] "Non-Retail Sales and Service Use" includes the sale of goods or services to other businesses rather than the end user, or that does not provide for direct sales to the consumer on site. Uses in this category include, but are not limited to: Business Services, Catering, Commercial Storage, Design Professional, General Office, Laboratory, Life Science, Non-Retail Professional Service, Trade Office, Wholesale Sales, and Wholesale Storage (planning code section 102).

[c] "Institutional Use" includes Child Care Facility, Community Facility, Private Community Facility, Hospital, Job Training, Medical Cannabis Dispensary, Religious Institution, Residential Care Facility, Social Service or Philanthropic Facility, Post-Secondary Educational Institution, Public Facility, School, and Trade School (planning code section 102).

[d] The 50,000 sf CitySports building would be demolished and is subtracted from the existing mall square footage to be retained.

[e] The proposed project and variant would both retain the 250 spaces below shopping mall. 4,250 proposed project spaces - 250 retained spaces = 4,000 new project spaces. 4,000 spaces – 3,150 existing spaces to be removed = 850 net new spaces for the proposed project; 4,450 variant spaces – 250 retained spaces = 4,200 new variant spaces. 4,200 variant spaces – 3,150 existing spaces to be removed = 1,050 net new spaces for the variant.

2.D.2 Proposed Land Use Plan

Figure 2-4, p. 2-9, and Figure 2-6, p. 2-11, present the land use plan for the proposed project and variant. The proposed project would include up to approximately 3.6 million square feet of new construction on 17 blocks. The proposed project would provide up to approximately 2,930 residential units totaling approximately 3.1 million square feet. The new units would include a mix of rental and for-sale market-rate and affordable housing in varying affordability and in a variety of housing types from townhomes to mid- and high-rise buildings. The majority of the blocks would be designated "Residential" and would include ground-floor retail, institutional uses, commercial or residential frontages along the streets. Block E6 would be designated "Institutional." Block W2 would be designated "Structured Parking" and would be an accessory parking structure to the existing and proposed non-residential uses. Block E2 would be designated

"Non-Retail Sales and Service." Areas designated "Open Space" would be located throughout the project site to provide connections within the site and to adjacent areas.

The proposed project would provide up to 160,000 square feet of new retail to complement the existing shopping mall. Most of the retail uses would be located on 20th Avenue, with neighborhood-scale retail such as cafes and shops located throughout the project site. Up to approximately 200,000 square feet of Non-Retail Sales and Service use is proposed that would cater to small neighborhood-serving businesses such as design studios, accounting practices, medical, and dental offices. Other proposed uses include approximately 100,000 square feet of hotel (up to 200 rooms), and approximately 53,000 square feet of cultural, institutional, and educational uses, including approximately 15,000 square feet of childcare use and community use.

2.D.3 Height

Figure 2-5, p. 2-10 presents the proposed height district plan for the proposed project and variant, respectively. The proposed zoning map amendment would modify the existing applicable height limits of 40 and 65 feet to 90 feet on all parcels other than the mall parcels, with the tower parcels (Blocks W3, W4, S1, S2, and S3) up to 190 feet. The existing height applicable to the mall parcels will not be modified. However, some buildings would only have development heights between 30 to 90 feet. As shown in Figure 2-5, the heights of the proposed buildings would generally step up from the west, north, and east to the south and would vary from 30 to 190 feet.

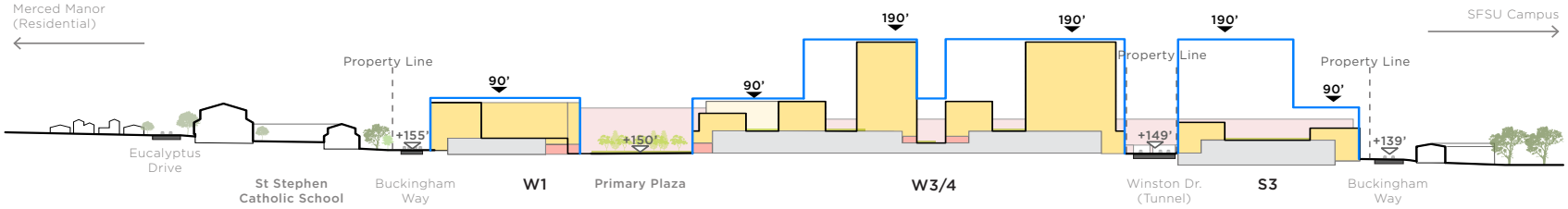
Figure 2-6, p. 2-11, shows the axon diagram of the proposed project and variant, which illustrates the conceptual massing for each block. **Figure 2-7** to **Figure 2-9**, p. 2-17, include representative north–south and east–west sections of the site.

2.D.4 Design for Development

The proposed project would be rezoned from C-2 (Community Business Districts) to a Special Use District (SUD) to establish land use controls and incorporate Design Standards and Guidelines (DSGs) to govern future development. The DSG would establish the project vision and set forth standards and guidelines for building design, land uses, streets and circulation, open space, signage, wayfinding, and the public realm. DSG guidelines and standards would govern topics such as maximum allowable development, street frontage, site coverage, setbacks, height, building separation, bulk and massing controls, vehicle parking, bicycle parking, loading, buildings, streetscape, open space, and overall land use program. Future development at the project site, whether constructed by the project sponsor, project sponsor's affiliates, or third-party developers would be governed by the DSG. The proposed DSGs are intended to address compatibility of new development within the project site within the SUD. The planning department would evaluate any future development proposals within the project site for conformity with the DSG.

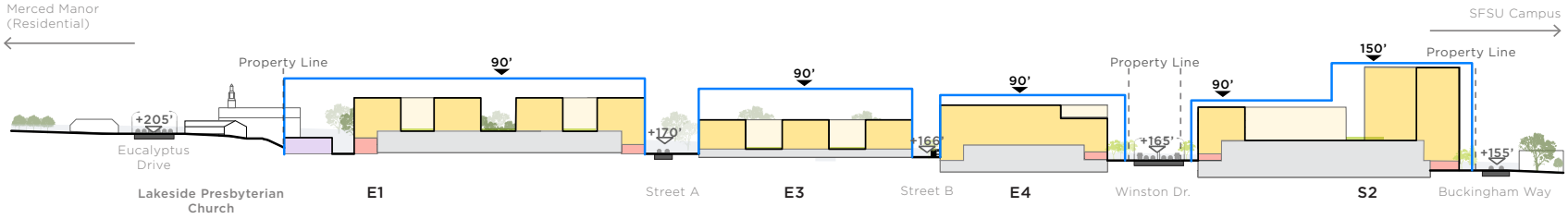
Section A

Section Through West Parcels - Looking East



Section B

Section Through East Parcels - Looking East



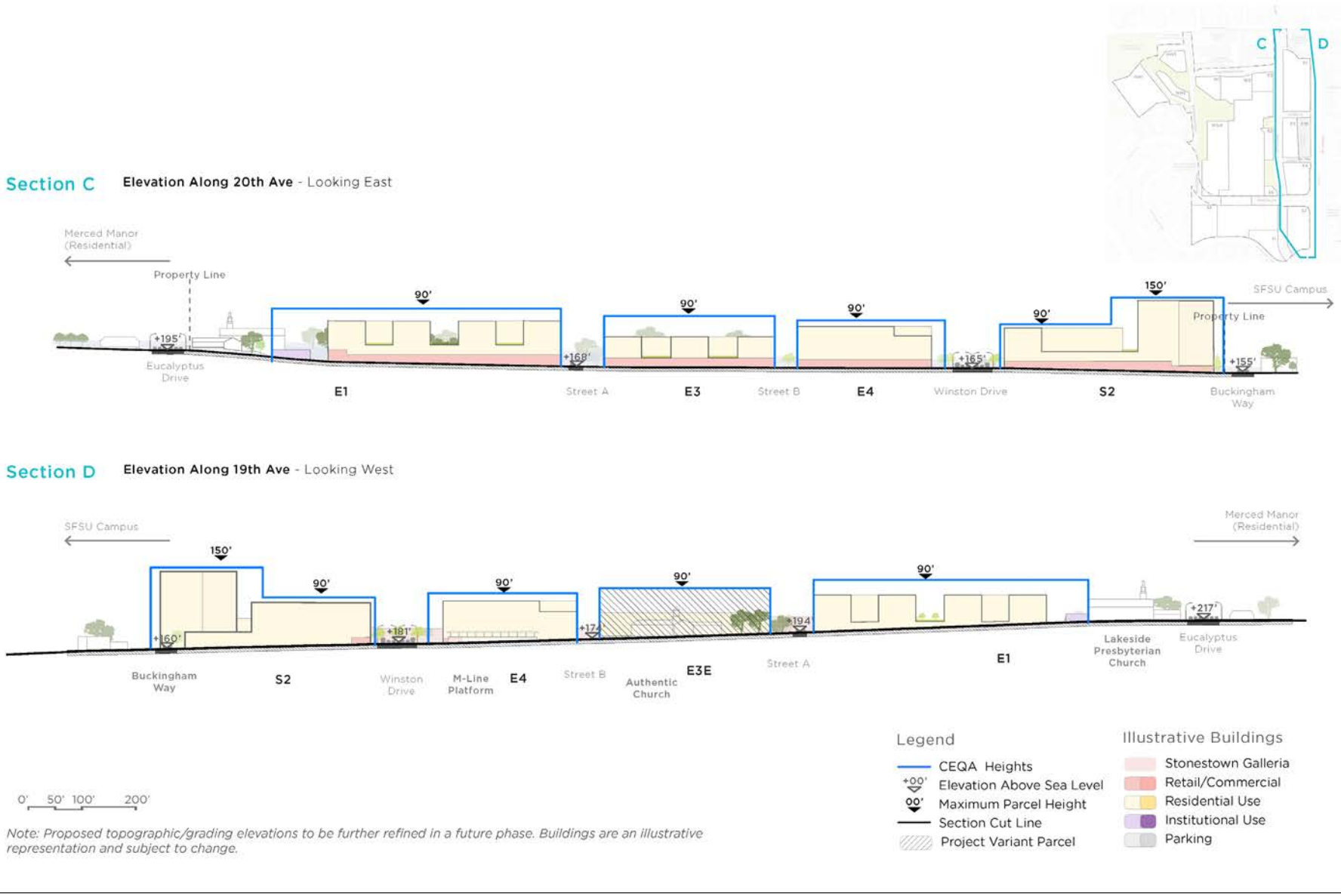
Note: Proposed topographic/grading elevations to be further refined in a future phase. Buildings are an illustrative representation and subject to change.

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-7

PROPOSED SITE SECTIONS THROUGH WEST AND EAST PARCELS

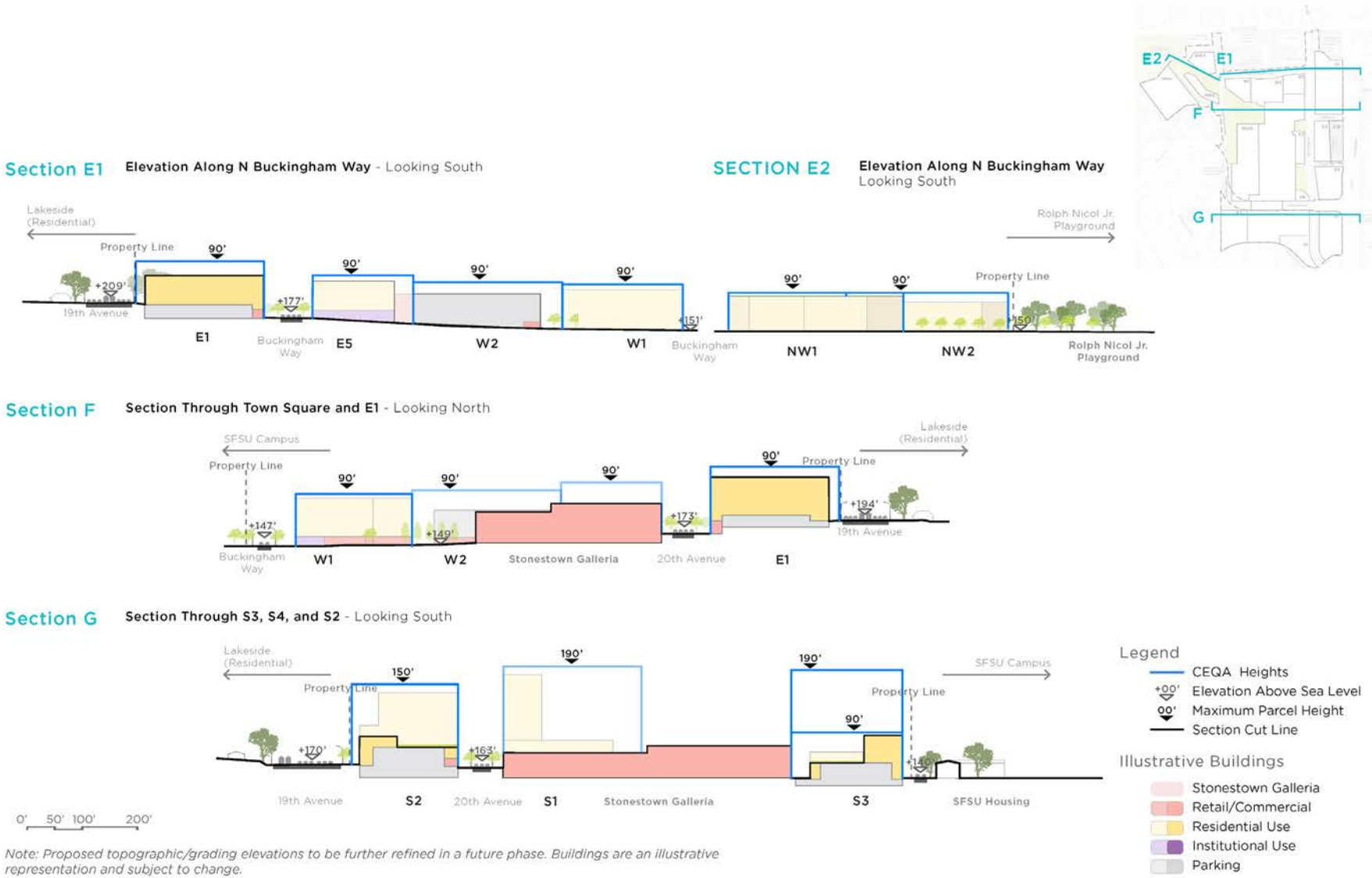


SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-8

PROPOSED SITE SECTIONS ALONG 19TH AVENUE



Note: Proposed topographic/grading elevations to be further refined in a future phase. Buildings are an illustrative representation and subject to change.

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-9

PROPOSED SITE SECTIONS THROUGH NORTH AND SOUTH PARCELS

2.D.5 Open Space Improvements

As shown in **Figure 2-10**, the proposed project would provide approximately 6 acres of publicly accessible open space. The open spaces would be comprised of parks, plazas, and green spaces integrated into the project site ranging from 0.2 to 1 acre each and would provide connections between the project site and adjacent uses. Two primary public plazas would be located directly adjacent to the main Stonestown Galleria entrances by Blocks E6 near the corner of Winston Street and 20th Avenue and W3 on the west side of the mall adjacent to Buckingham Way (see Figure 2-10). Secondary plazas would be located along 20th Avenue.

Potential programming for the primary public plazas could include flexible space for music, art, events, farmer's markets, outdoor café seating, and recreation space. Parkways would consist of linear landscaped spaces along Buckingham Way, the northwest portion of the project site, and along the 19th Avenue frontage. Potential programming for the parkways could include dedicated walking paths, dog parks, gardens, residential common spaces, and space for informal activities such as picnic and play areas. Landscaped alleys between buildings and gardens also would be provided to accommodate a range of uses. The open space improvements would be the same under the variant.

2.D.6 Vehicle Parking

As shown in **Table 2-2**, p. 2-20, the proposed project would provide up to 4,250 off-street vehicle parking spaces. With the variant, 4,450 off-street vehicle parking spaces would be provided at the project site. Under both the proposed project and with the variant, the existing underground garage below the shopping mall would be retained and expanded west under Blocks W3 and W4 between the west side of the shopping mall and Buckingham Way. This would provide approximately 290 retail parking spaces, which would provide a total of 540 parking spaces in the expanded underground garage. A new five-story public parking garage containing approximately 770 parking spaces would be constructed on Block W2 at the north end of the site and would be an accessory parking structure to the existing and proposed non-residential uses (see **Figure 2-11**, p. 2-21). In addition to the expanded 540-space parking garage below the shopping mall and the new 770-space parking garage, the proposed project would provide 2,940 vehicle parking spaces embedded within the proposed building podiums and/or below grade throughout the site (see Figure 2-11). With the variant, 3,140 vehicle parking spaces would be embedded within the proposed building podiums and/or below grade throughout the site, including an additional 200 parking spaces on Block E3.

Each residential building would have a different parking ratio, but in total residential parking for the project would not exceed one parking space per unit. In addition, the proposed project would include off-street freight loading spaces, truck loading parking spaces, accessible parking spaces, and passenger loading areas. All residential parking would be unbundled.[11] The proposed project would include approximately 66 car-share parking spaces and additional electric vehicle (EV) charging stations located throughout the site.

[11] Unbundled parking spaces are leased or sold separately from the rental or for-sale units so that residents or tenants have the option of renting or buying a parking space at an additional cost.

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-10
PROPOSED OPEN SPACE

Table 2-2 Proposed Project and Variant Parking Spaces

Block	Proposed Project Parking Spaces	Proposed Project Including Variant Parking Spaces
W2 Public Parking Garage	770	770
W3 and W4 Expanded Parking Garage Below Shopping Mall	540	540
Parking spaces in remaining block podiums and/or below grade parking	2,940	3,140
Total	***4,250***	***4,450***

2.D.7 Bicycle Parking

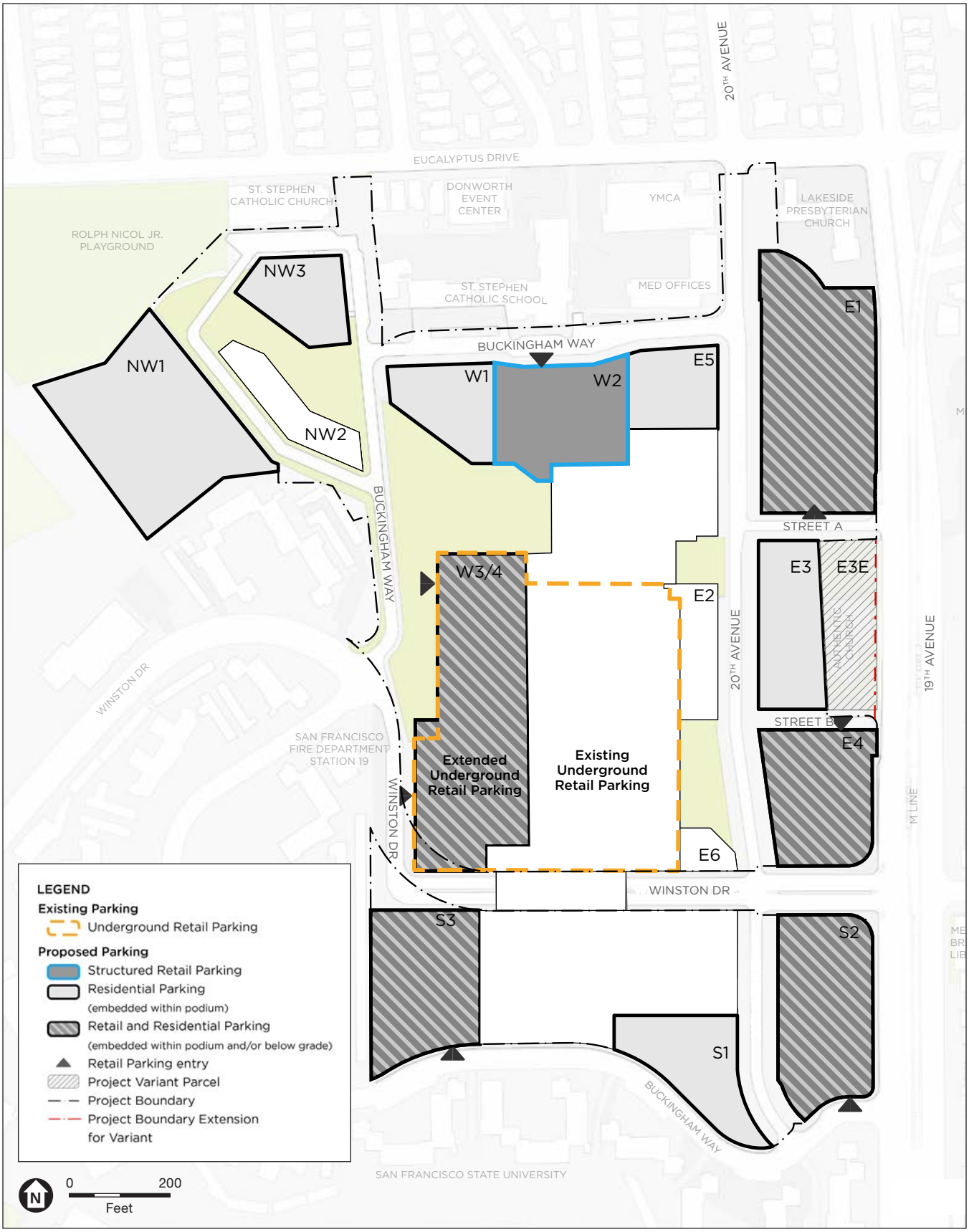
The proposed project or variant would provide class 1 bicycle parking spaces located either on the ground floor of each residential building or in the first below-grade level of each residential building in the locations compliant with the planning code;[12] and class 2 bicycle parking spaces, all of which would be located in the right-of-way adjacent to each building or in publicly accessible open space areas.[13] The proposed project would provide 885 class 1 and 245 class 2 bicycle parking spaces. The variant would provide 923 class 1 and 253 class 2 bicycle parking spaces.

2.D.8 Transportation and Circulation Plan

Figure 2-12[14] and **Figure 2-13**, pp. 2-23 and 2-23, show the proposed street plan and proposed intersection controls, respectively, which would be the same under the proposed project and variant. The primary and secondary access points to the project site would continue to be at 19th Avenue at Winston Drive, and Eucalyptus Drive at 20th Avenue, respectively. Changes to the existing streets would be designed according to the principles of the Better Streets Plan.[15] The design would provide for sidewalks, street trees, and other streetscape elements to encourage walking and the use of bicycles to access adjacent public transit. The roadway network changes would be designed to be accessible for all modes of transportation, including transit, vehicles, bicycles, and pedestrians. The following changes are proposed for the roadways in the project site:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened, would have two travel lanes (one lane in each direction), and would range between 25 and 35 feet in width. The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 2-17**, pp. 2-24 to 2-27.

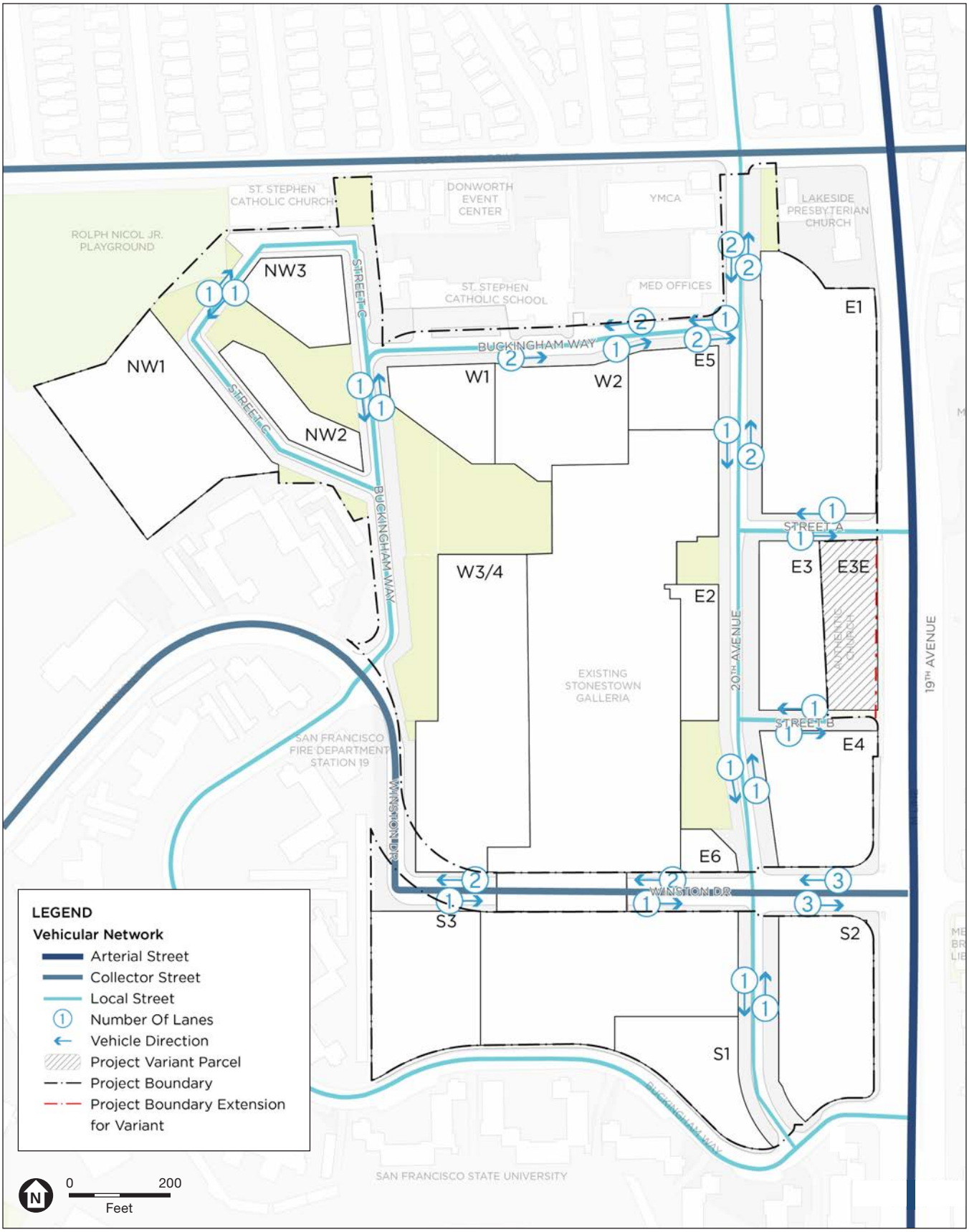
[12] Section 155.1(a) of the planning code defines class 1 bicycle spaces as "spaces in secure, weather-protected facilities intended for use as long-term, overnight, and work-day bicycle storage by dwelling unit residents, nonresidential occupants, and employees."
[13] Section 155.1(a) of the planning code defines class 2 bicycle spaces as "spaces located in a publicly accessible, highly visible location intended for transient or short-term use by visitors, guests, and patrons to the building or use."
[14] Arterial streets are cross-town thoroughfares whose primary function is to link districts within the city and to distribute traffic from and to the freeways; these are routes generally of citywide significance; of varying capacity depending on the travel demand for the specific direction and adjacent land uses. Collector streets are relatively low-capacity streets serving local distribution functions primarily in large, low-density areas, connecting to major and secondary arterials. Local streets are all other streets intended for access to abutting residential and other land uses, rather than for through traffic; generally of lowest capacity.
[15] City and County of San Francisco, *Better Streets Plan,* December 2010.



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

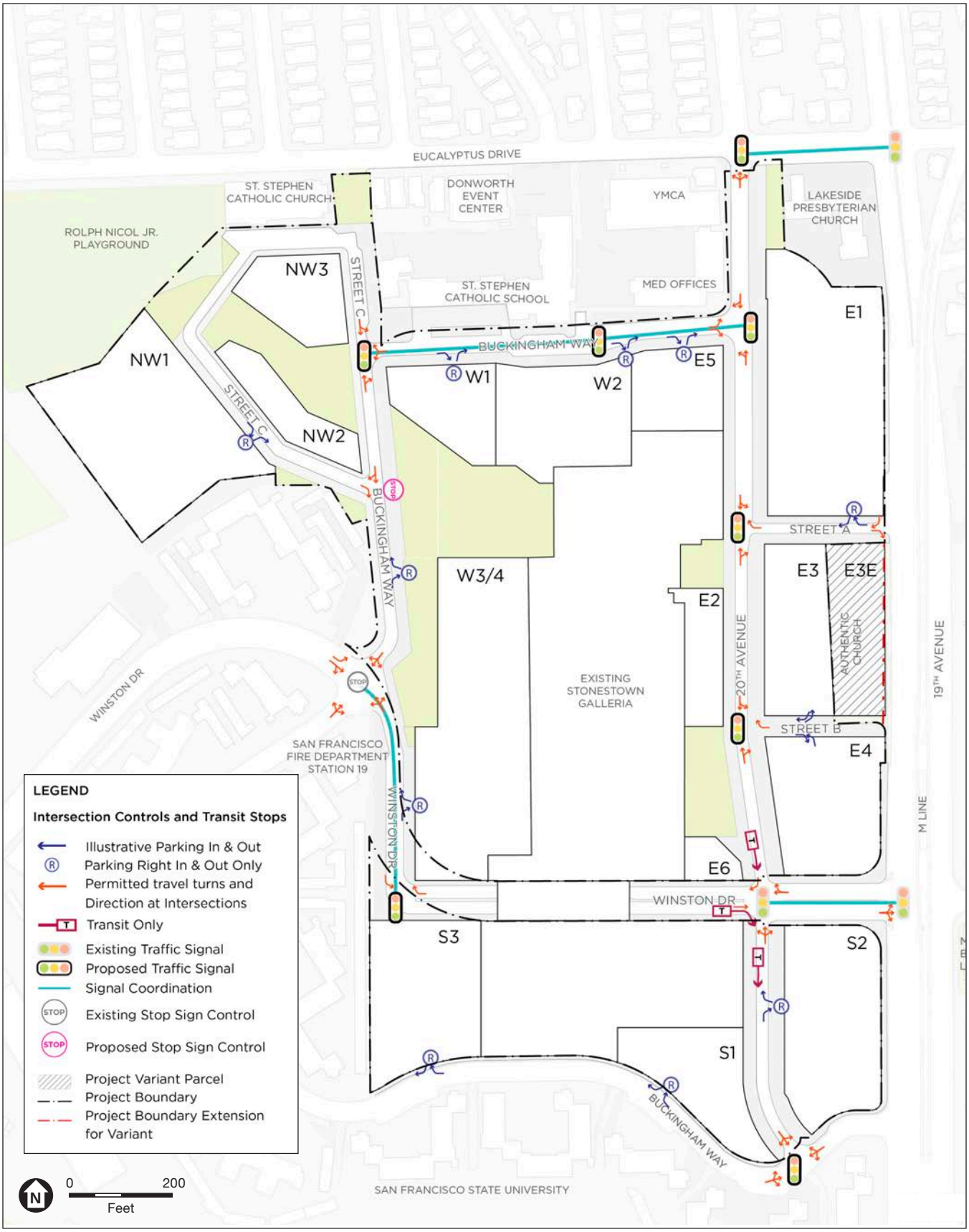
FIGURE 2-11
PROPOSED PARKING PLAN



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

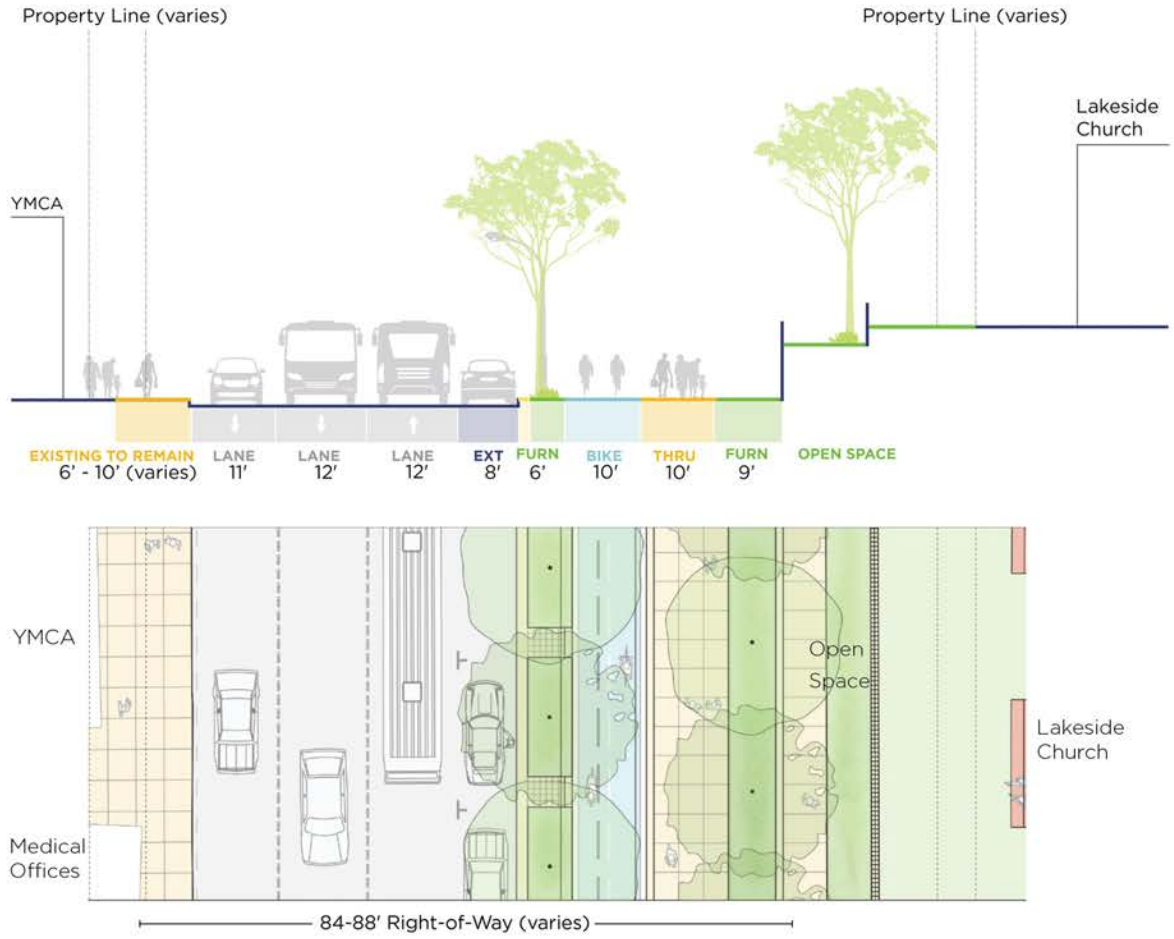
FIGURE 2-12
PROPOSED STREET PLAN



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

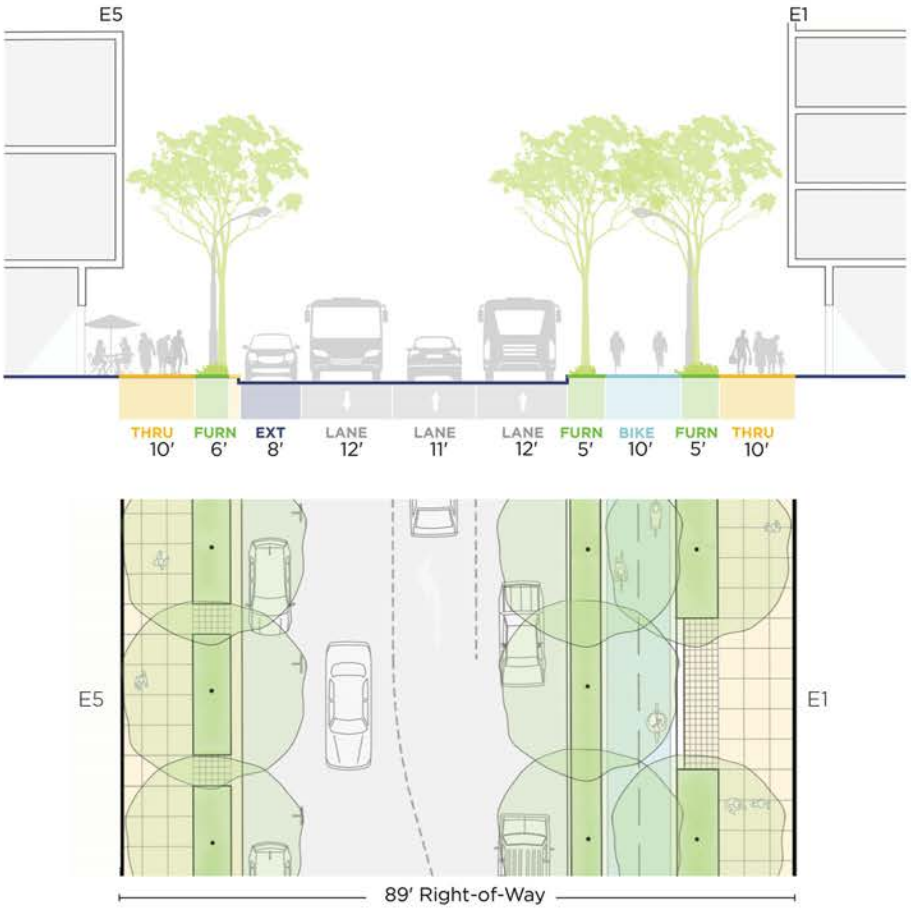
FIGURE 2-13
PROPOSED INTERSECTION CONTROLS



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

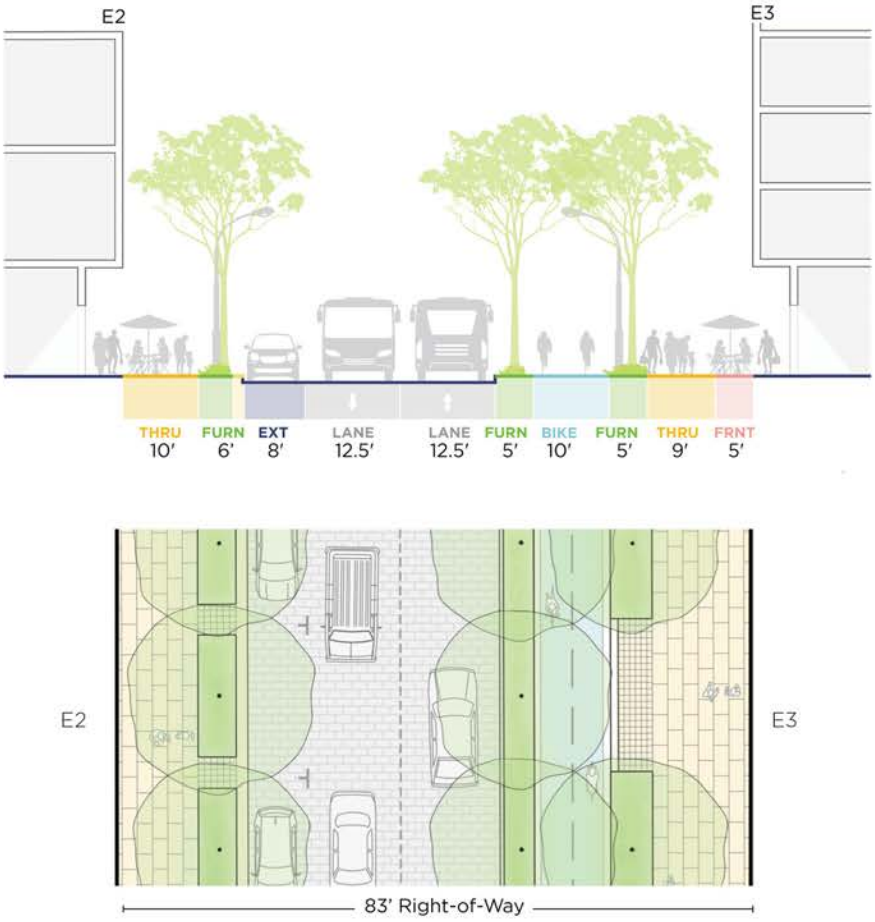
FIGURE 2-14
20TH AVENUE ILLUSTRATIVE SECTION A



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

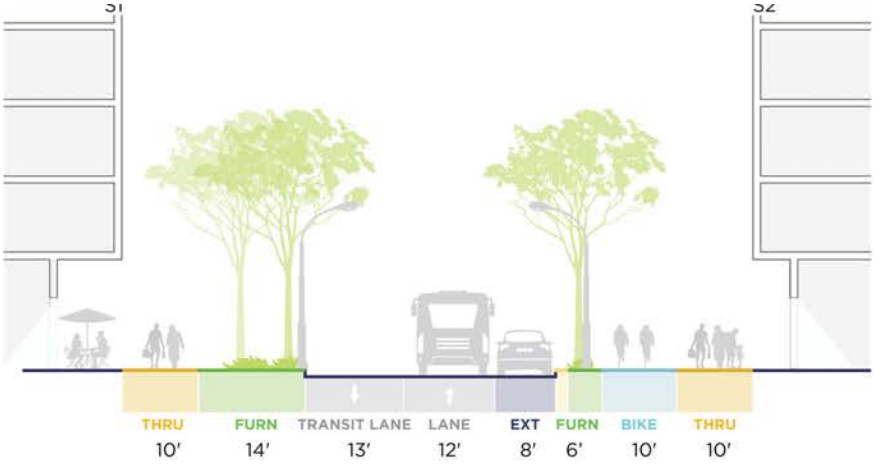
FIGURE 2-15
20TH AVENUE ILLUSTRATIVE SECTION B

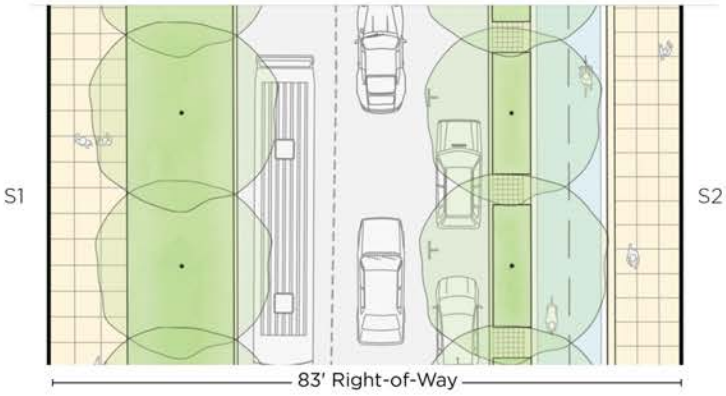


SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-16
20TH AVENUE ILLUSTRATIVE SECTION C





SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-17
20TH AVENUE ILLUSTRATIVE SECTION D

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to two lanes (one lane in each direction) between 20th Avenue and Winston Drive. The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.
- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be straightened and converted to a two-way connection to 19th Avenue (shown as Street A on Figure 2-12). Street A would be approximately 20 feet wide.
- **Winston Drive.** Winston Drive between Block S3 and 20th Avenue would be reduced from four travel lanes (two lanes in each direction) to three lanes (two lanes westbound, one lane eastbound). The curved portion of Winston Drive at Block S3 would be converted to a 90-degree corner. The six travel lanes (three lanes in each direction) between 19th and 20th avenues would be maintained. Winston Drive would be 46 to 66 feet wide. Conceptual illustrative street sections for Winston Drive are shown in **Figure 2-19** and **Figure 2-20**, pp. 2-30 and 2-31.
- **Street B.** A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4, however it would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately 26 feet wide.
- **Street C.** A new street with two lanes (one lane in each direction) would loop around Blocks NW1, NW2, and NW3 and connect to Buckingham Way. Street C would be approximately 20 to 25 feet wide.

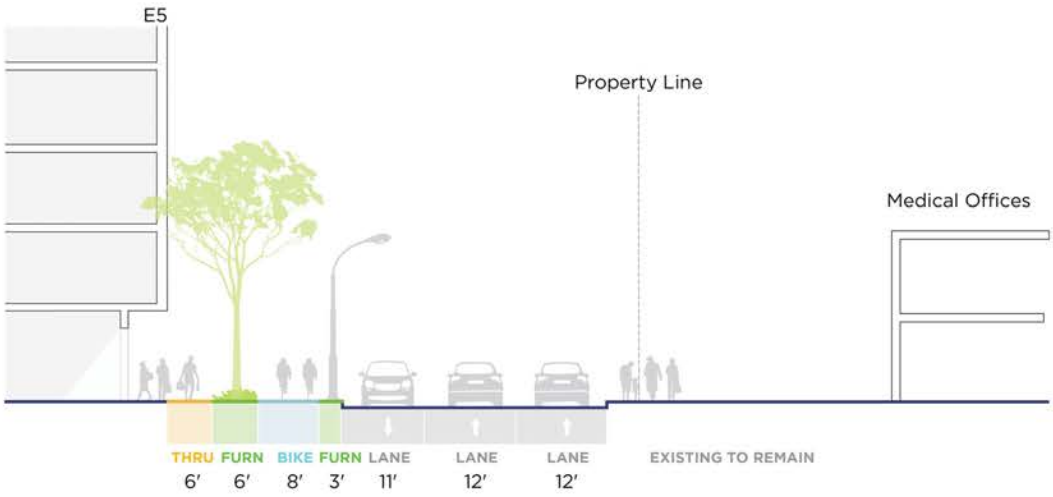
The proposed project would include a Transportation Demand Management (TDM) program that would implement measures to reduce vehicle trips and encourage walking, biking, and transit.

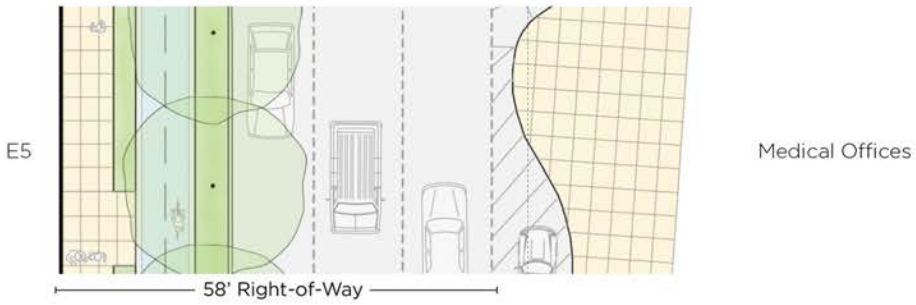
Additionally, new traffic signals would be installed at the intersections of Eucalyptus Drive and 20th Avenue, Buckingham Way adjacent to block NW3, Buckingham Way and 20th Avenue, 20th Avenue and Street A, 20th Avenue and Street B, mid-block on Buckingham Way near Block W2, Buckingham Way and Winston Drive, and Winston Drive at the corner of Block W4 (see Figure 2-13, p. 2-23).

Changes to turn lanes would be made at the following intersections:

- **19th Avenue/Winston Drive.** The southbound channelized[16] right-turn lane from 19th Avenue to Winston Drive would be closed and the right-turn pocket would be maintained. The eastbound channelized right-turn lane from Winston Drive to 19th Avenue would be closed and the eastbound through/right-turn lane would be maintained.
- **20th Avenue/Eucalyptus Drive.** The northbound channelized right-turn lane from 20th Avenue to Eucalyptus Drive would be closed and the northbound lanes would be reconfigured to northbound through/left-turn and northbound right-turn lanes.
- **20th Avenue/Winston Drive.** The westbound channelized right-turn lane on Winston Drive to 20th Avenue would be closed and the three westbound lanes would be reconfigured to right/through/left lanes.

[16] Channelized turn lanes are a common treatment at signalized intersections intended to allow heavy right-turning movements to bypass the main intersection.

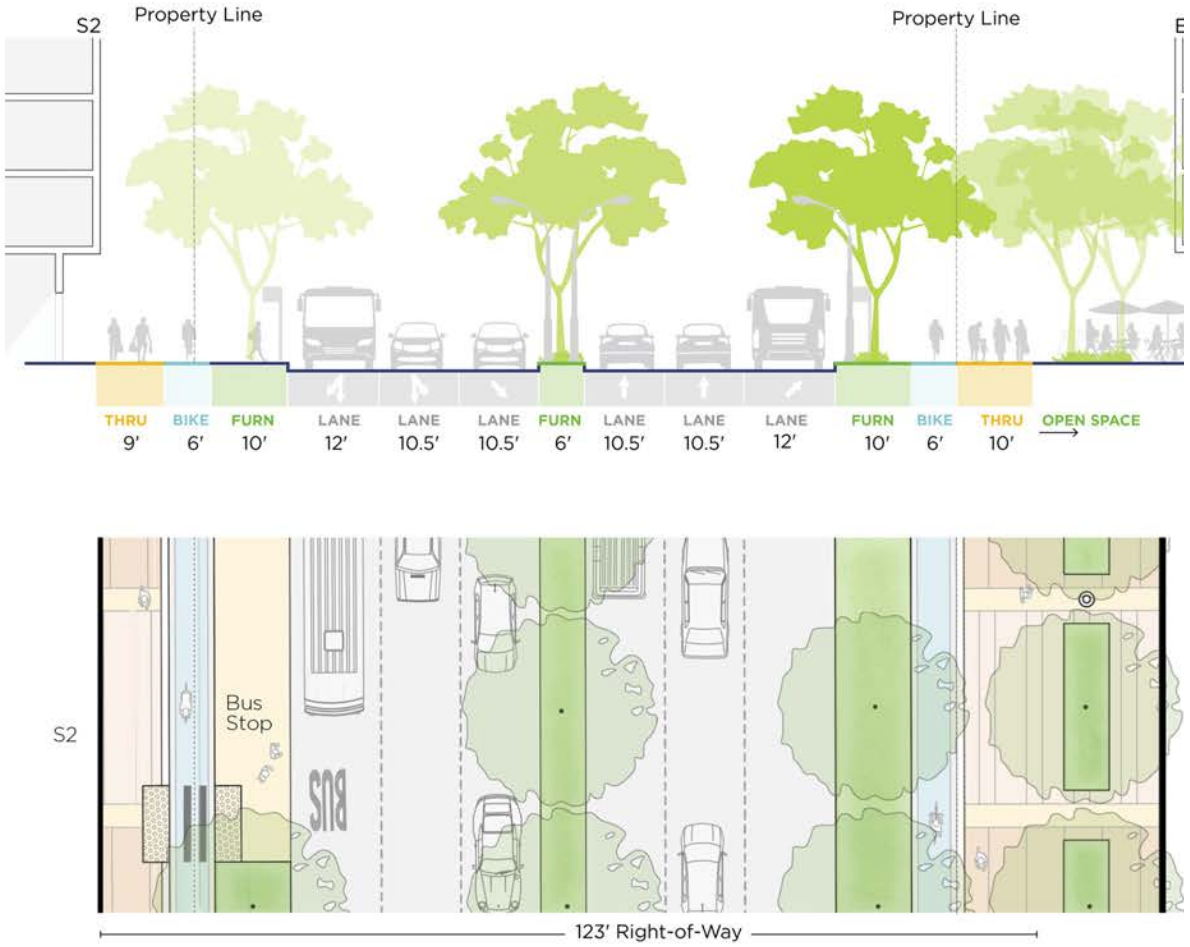




SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

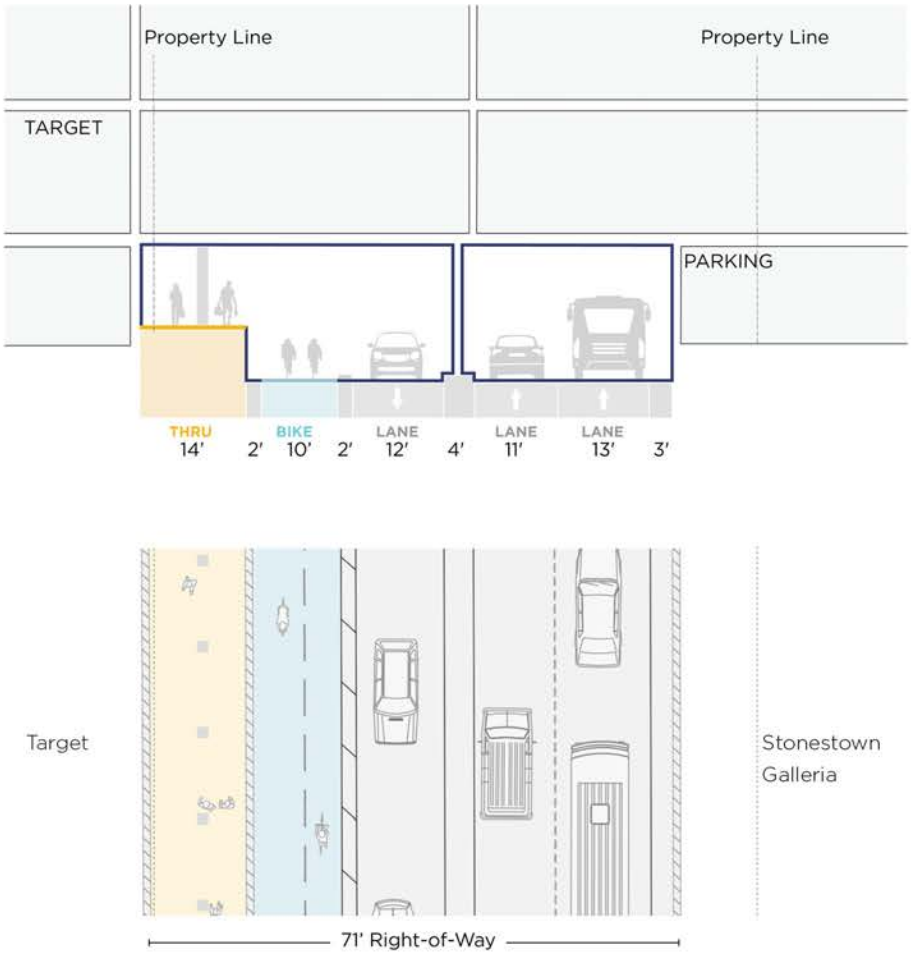
FIGURE 2-18
BUCKINGHAM WAY NORTH ILLUSTRATIVE SECTION



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-19
WINSTON DRIVE ILLUSTRATIVE SECTION A



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-20
WINSTON DRIVE ILLUSTRATIVE SECTION B

TRANSIT

The project site would continue to be served by public transit and the proposed project or variant would include a transit stop relocation as well as revised signal timing. The proposed project or variant would include wayfinding throughout the project site.

PEDESTRIAN AND BICYCLE NETWORK

Pedestrian and bicycle access would be provided through the northwest portion of the project site, connecting to Rolph Nicol Jr. Playground as shown in **Figure 2-21** and **Figure 2-22**, p. 2-34, respectively.

Two-way class IV bicycle facilities (protected bike lanes) are proposed on Buckingham Way, 20th Avenue, and Winston Drive.[17] Pedestrian accessibility from the project site to surrounding areas and within the site would be improved by providing wider sidewalks, accessible ramps, additional crosswalks, new pathways and additional crosswalks and improvements to the existing east-west connection through the shopping mall. The proposed project or variant would provide continuous sidewalks along all project frontages ranging between 6 and 40 feet in width.

TRANSPORTATION DEMAND MANAGEMENT

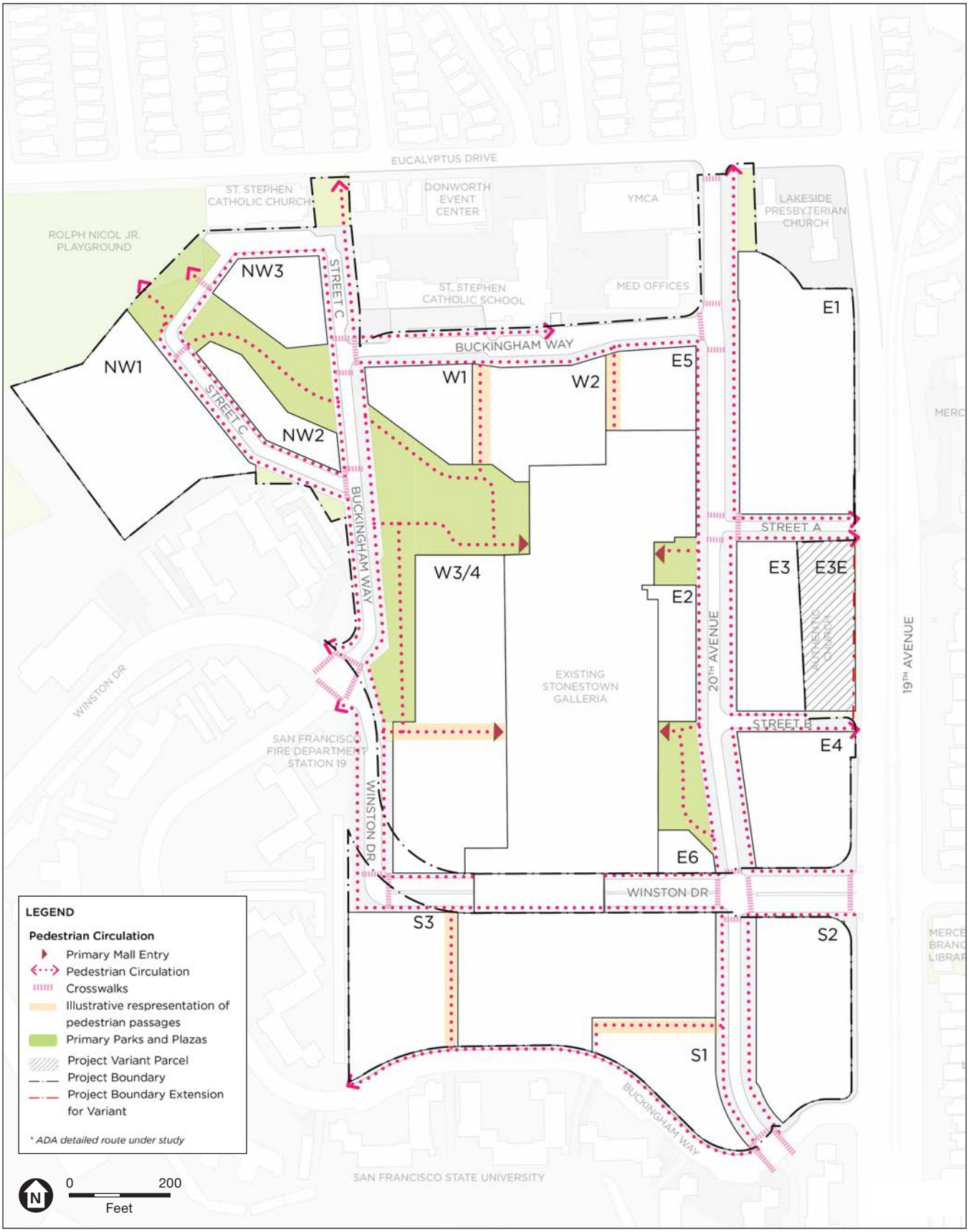
The proposed project or variant would include a Transportation Demand Management (TDM) program that would implement measures to reduce vehicle trips and encourage walking, biking, and transit. Key strategies in the TDM program could include providing a bike sharing station, bicycle parking to encourage bicycle use, unbundled parking, car-share parking spaces, and other approaches to discourage use of single-occupant private vehicles. The proposed project or variant could also implement amenities and education strategies regarding transportation choices, including real-time occupancy data for shared parking facilities and marketing campaigns to encourage the use of sustainable transportation modes.

2.D.9 Infrastructure and Utilities

The proposed project or variant would upgrade the existing infrastructure and utility systems to support the proposed uses at the project site.[18] Service to the existing shopping mall would be maintained during construction. This would include potable water, recycled water, non-potable water, high-pressure water, wastewater, stormwater, electricity, natural gas, and telecommunications, as described in more detail below.

- **Potable Water.** The proposed project would construct potable water distribution pipelines to serve the new uses. **Figure 2-23**, p. 2-35, illustrates the potable[19] water distribution system that would serve the proposed project and variant from the City's existing water supply system. The existing potable water pipeline in the segments of 20th Avenue, Buckingham Way, and Winston Drive (adjacent to Blocks SW and W4) would be relocated to the proposed alignments of these streets. The existing potable water pipeline at the northwest portion of the mall would be relocated within Buckingham Way, which would connect to new pipelines serving Blocks NW1, NW2, and NW3. To reduce potable water demand, high-efficiency fixtures and appliances would be installed in new buildings.

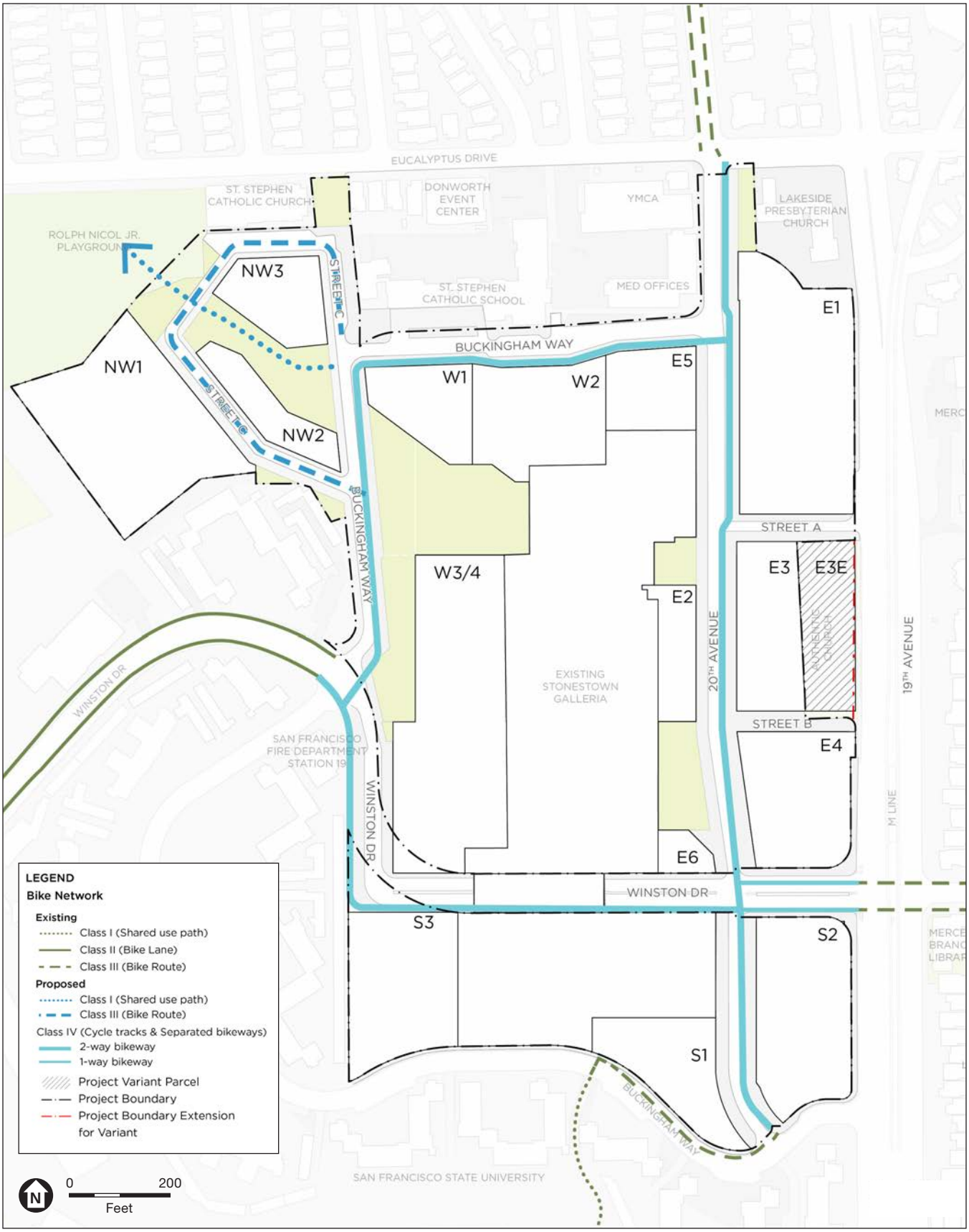
[17] Class IV bikeways are separated bikeways, or protected bike lanes for the exclusive use of bicycles and physically separated from vehicle traffic with a vertical feature. The separation may include, but not limited to, grade separation, flexible posts, inflexible barriers, or on-street parking.
[18] CBG, Utility Summary, Stonestown, San Francisco, California, December 21, 2021.
[19] Potable water is water that is safe for drinking or for food preparation.



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

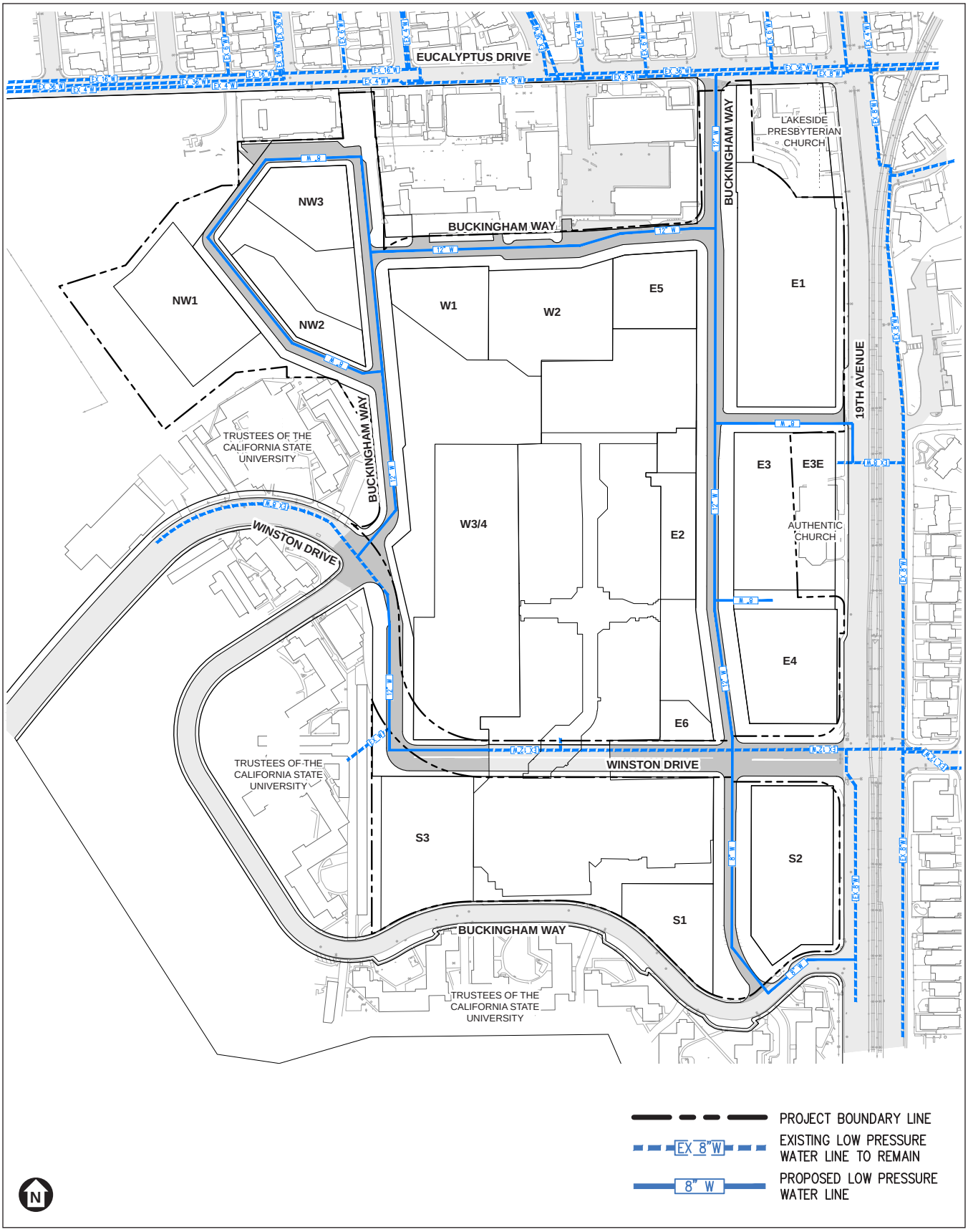
FIGURE 2-21
PROPOSED PEDESTRIAN NETWORK



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-22
PROPOSED BICYCLE NETWORK



SOURCE: CBG, 2022

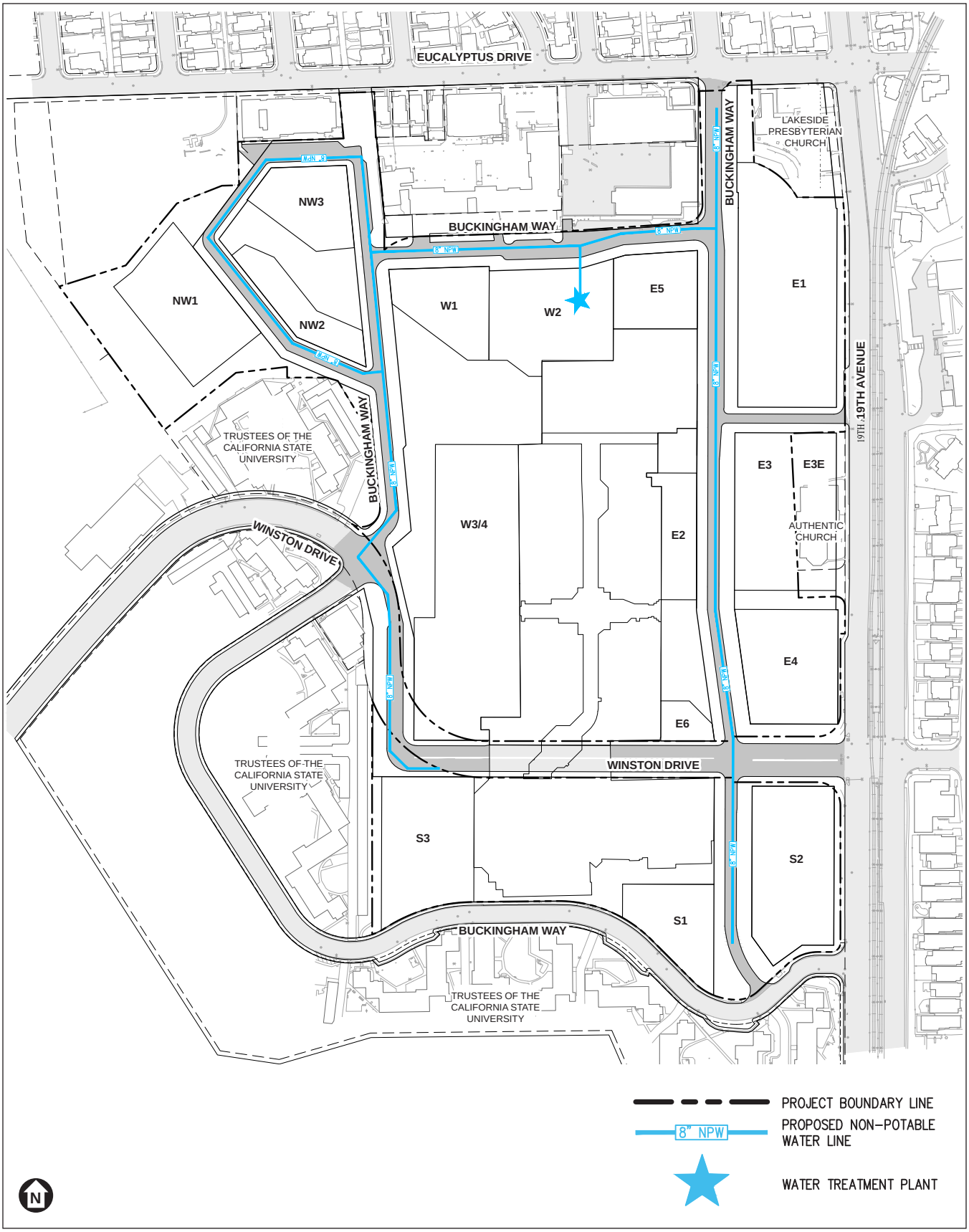
Stonestown Development Project

FIGURE 2-23

PROPOSED POTABLE WATER PLAN

- **Recycled Water.** The project site is located within a designated recycled water use area, and the proposed project would provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance.
- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or decentralized treatment facilities located within certain buildings as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.
- **Combined Sewer System.** Wastewater from the project site is currently collected and conveyed in the existing combined sewer system within a network of pipelines and treated at the Oceanside Water Pollution Control Plant. The proposed project would include construction of new combined sewer system lines throughout the site to serve the new buildings as shown in **Figure 2-26**, p. 2-39. The proposed combined sewer system facilities would be integrated with the proposed green infrastructure to achieve stormwater management requirements to reduce peak flows and volumes from the site prior to discharge to the downstream existing system. The wastewater from the project site north of Winston Drive would continue to be discharged to the City's existing facility past Lowell High School, and portions south of Winston Drive would be discharged through existing facilities within Buckingham Way.
- **Stormwater Management.** The proposed project would include a stormwater management system that would meet the City's stormwater management ordinance. The system would incorporate green infrastructure, including infiltration basins, galleries, and pervious surfaces that would promote infiltration, throughout the project street and open space network. Additional stormwater reductions would be achieved by implementing rainwater reuse building systems and green roofs, where feasible.
- **Electricity and Telecommunications.** The project site has existing electrical, natural gas, and telecommunications service from lines under the existing roads and surface parking lots. The proposed project would reconfigure the existing facilities in the proposed street network. The electric and telecommunication lines would be installed in joint trenches located in the proposed street network to provide service to the new buildings. All new construction would comply with the City's All-Electric New Construction Ordinance.
- **Emergency Backup Generators.** Twelve emergency backup diesel generators are proposed to serve each residential block.

[20] Graywater is wastewater generated from wastewater sources, excluding toilets, which can be diverted, treated, and reused for non-potable water purposes.
[21] Blackwater is wastewater generated from wastewater sources including toilets, urinals, kitchen sinks, and utility sinks, which can be diverted, treated, and reused for non-potable water purposes.

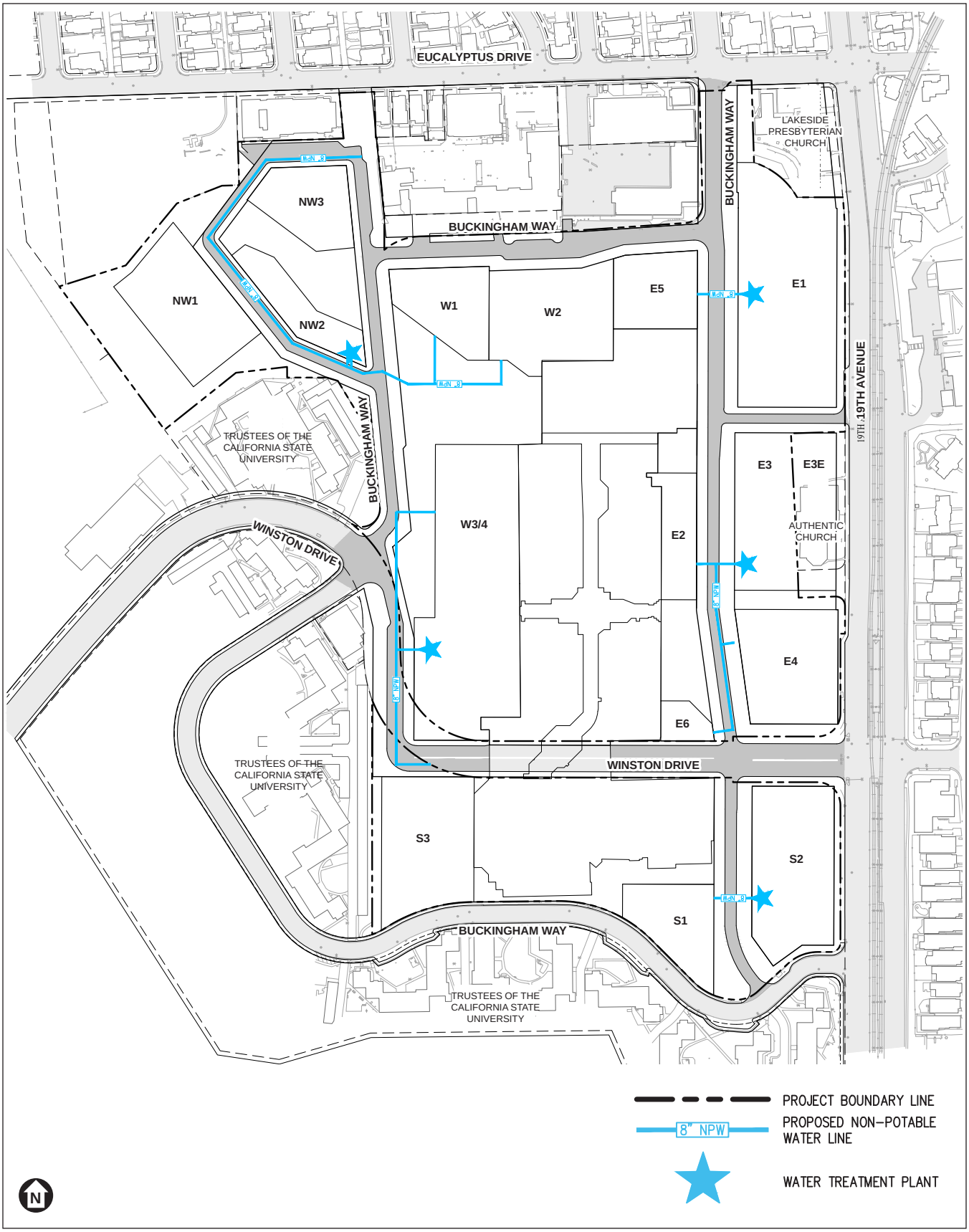


SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-24

PROPOSED NON-POTABLE WATER PLAN (CENTRALIZED TREATMENT OPTION)

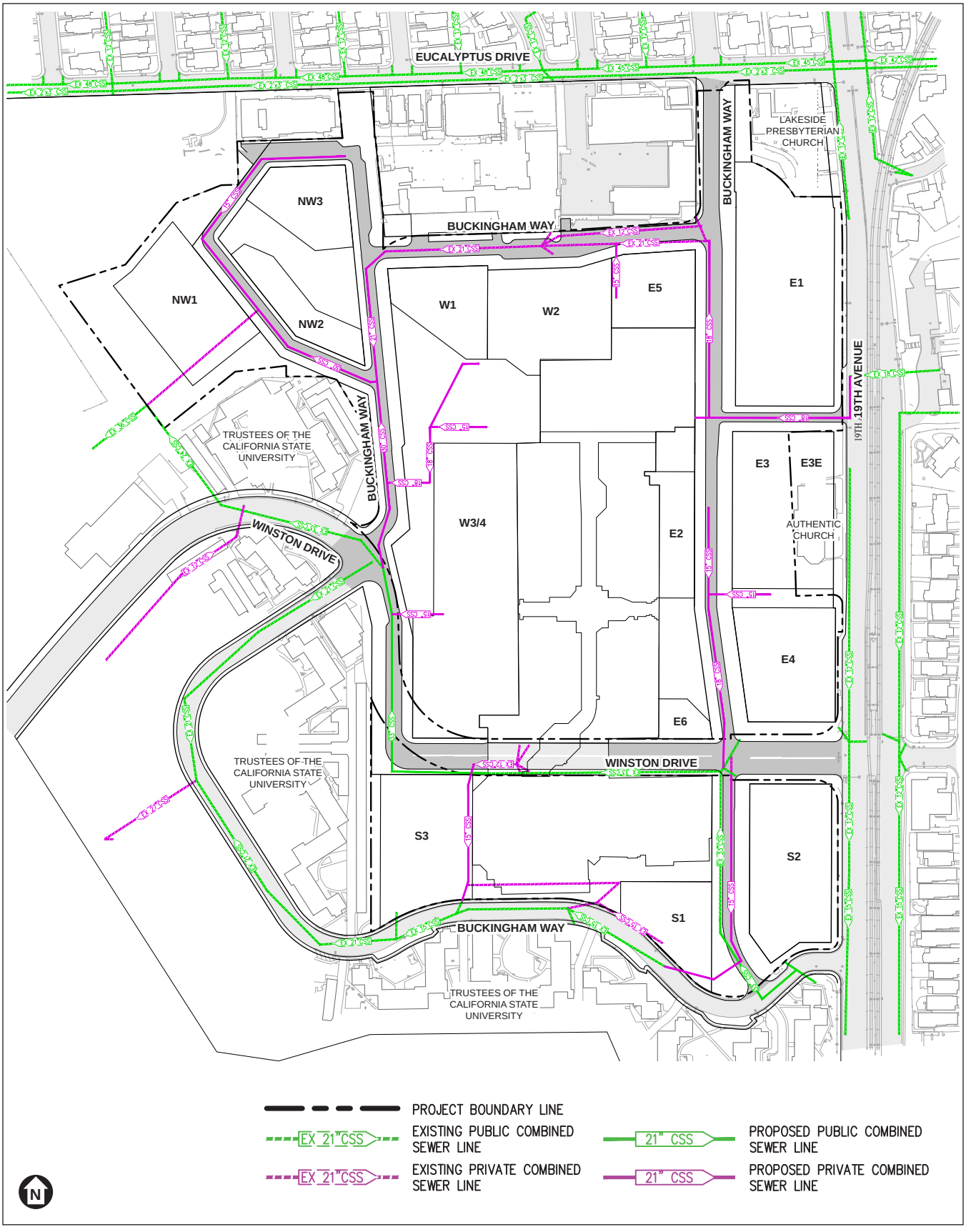


SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-25

PROPOSED NON-POTABLE WATER PLAN (DECENTRALIZED TREATMENT OPTION)



SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-26

PROPOSED COMBINED SEWER SYSTEM PLAN

2.D.10 Sustainability Plan

The proposed project would establish a sustainability plan that outlines performance and monitoring criteria for its operation. The proposed project would comply with the state's Title 24 and San Francisco Green Building Code requirements for energy efficiency, renewable energy, and solar and living roofs. The project sponsor would evaluate on-site renewable energy approaches as part of the sustainability plan to be included in the proposed project.

2.E Project Construction

2.E.1 Construction Schedule

For this EIR, it was assumed that project construction would take place over approximately eight years. Project construction would likely occur in six overlapping phases (refer to **Table 2-3** and **Figure 2-27**). The first phase of construction is anticipated to start on the northwest portion of the project site, near Eucalyptus Drive, and the last phase of construction is anticipated to end in the south portion of the project site, near Buckingham Way and 19th Avenue. Project construction could occur over a longer period, depending on market conditions and permitting requirements.

Table 2-3 Preliminary Estimated Construction Schedule

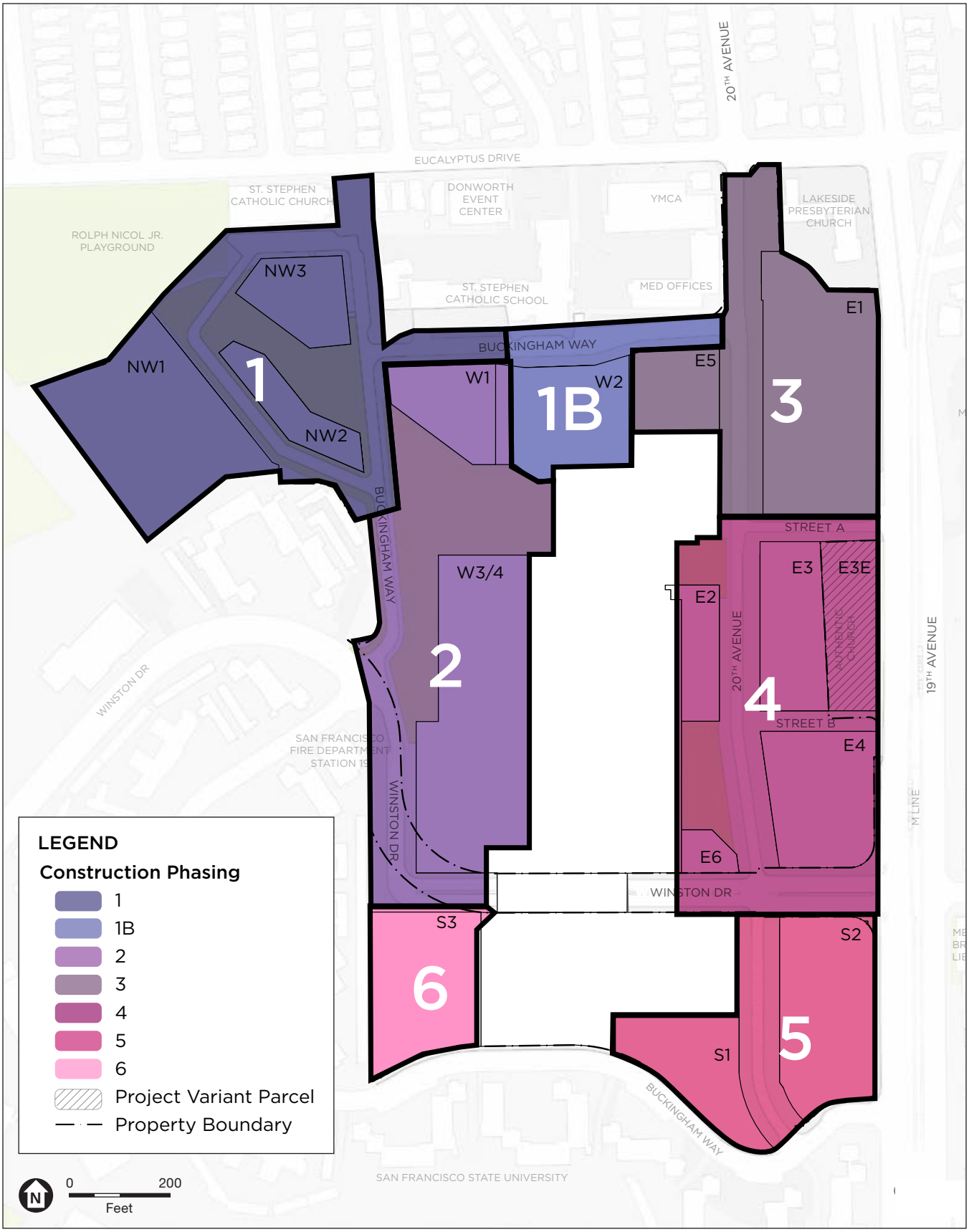
Construction Phase	Start	Finish	Duration (Months)
Phase 1 and 1B	Month 1	Month 45	45
Phase 2	Month 12	Month 56	44
Phase 3	Month 26	Month 54	28
Phase 4[a]	Month 36	Month 80	44
Phase 5	Month 48	Month 91	43
Phase 6	Month 60	Month 96	36
Total	***Month 1***	***Month 96***	***96***

SOURCE: Brookfield Properties Development 2022

NOTE:

[a] The construction of the Authentic Church parcel under the variant would be accommodated within Phase 4.

Each phase would include demolition, site preparation, grading, excavation, infrastructure modifications, and building construction, with some phases potentially overlapping. The project or variant does not propose any impact or vibratory pile driving. The construction duration for each phase would range from three to four years, with construction occurring between the hours of 7 a.m. and 8 p.m., five days a week. The proposed project or variant would require construction activities that would extend beyond normal hours (i.e., between 8 p.m. and 7 a.m.), which could include concrete pours, utility work, site maintenance activities and material delivery and handling. Nighttime and weekend construction would occur on an as-needed basis.



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-27
PROPOSED CONSTRUCTION PHASING PLAN

2.E.2 Soil Excavation, Grading, and Demolition

The proposed project would demolish the vacant theater at the northwest corner of the project site, the two-story commercial building at the northeast corner of 20th Avenue and Buckingham Way, the five-story parking garage at the southwest corner of the site, and the surface parking. The proposed grading plan would maintain the existing drainage patterns of the project site, with elevations sloping east to west towards Buckingham Way.

Over the course of construction, the proposed project would require approximately 205,000 cubic yards of excavation over an approximately 27-acre area, and approximately 65,000 cubic yards of fill. The proposed project would require excavation for below-grade parking and preparation of the building foundations. The excavation depths would range between 0 and 30 feet below ground surface.

2.E.3 Construction Equipment and Staging

A variety of mobile and stationary construction equipment would be used at the project site during construction. It is expected that drill rigs would be used at the project site for auger-cast or micro pile installation for the foundations. Cranes would be used for building construction, including but not limited to, steel and precast erection, and building façades. Other mobile equipment such as excavators, dozers, graders, backhoes, loaders, tractors, scrapers, dump trucks, compactors, pavers, and forklifts would be used at the project site for a range of other construction tasks on the project site, including demolition, site preparation, grading, shoring, excavation, and building construction. The construction equipment and materials would be staged within the project site or within each phasing area.

Project construction would also generate offsite truck trips for deliveries of concrete and other building materials, transportation of construction equipment to and from the site, hauling soils and debris from the site, and street sweepers. A variety of other, smaller, mechanical equipment would also be used at the project site during the construction period, such as jackhammers/pavement breakers, concrete/industrial saws, stud impact guns, impact drills, torque wrenches, welding machines, and air compressors.

2.F Graphic Exhibits of Proposed Project

A number of conceptual drawings of the proposed project are presented in **Figure 2-28** to **Figure 2-31**, p. 2-46, at the end of this chapter. These figures are conceptual drawings and do not represent the final design of the individual buildings. Detailed drawings and visual renderings of the buildings showing the proposed SUD massing controls, associated zoning map amendments, and design standards and guidelines for the site would be prepared for subsequent project approvals.

20TH AVENUE

THE COMMONS OPEN SPACE

SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-28
VIEW OF 20TH AVENUE AND THE COMMONS OPEN SPACE

SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-29
VIEW OF TOWN SQUARE LOOKING WEST

SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-30

VIEW OF WINSTON GATEWAY FROM 19TH AVENUE AND WINSTON DRIVE LOOKING WEST

SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-31
VIEW OF THE GREENWAY LOOKING EAST

2.G Required Project Approvals

The proposed project and variant are subject to review and approvals by several state, regional, and local agencies, including but not limited to the following:

2.G.1 State and Regional Agencies

CALIFORNIA DEPARTMENT OF TRANSPORTATION

- Approval of proposed modifications to 19th Avenue
- Encroachment permit

REGIONAL WATER QUALITY CONTROL BOARD – SAN FRANCISCO BAY REGION

- Approval of Section 401 water quality certification
- General Construction Stormwater Permit

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

- Approval of any necessary air quality permits (e.g., Authority to Construct and Permit to Operate) for individual air pollution sources, such as emergency diesel generators
- Approval of asbestos dust mitigation plan for construction and grading operations.

2.G.2 Local Agencies

Any and all necessary permits, actions, approvals, or entitlements within the jurisdiction of the board of supervisors, planning commission, recreation and parks commission, and other city agencies, including but not limited to those described below.

SAN FRANCISCO BOARD OF SUPERVISORS

- Adoption of findings under CEQA
- Adoption of findings of consistency with the general plan and priority policies of planning code section 101.1
- Approval of development agreement
- Approval of amendments to the general plan, planning code, and zoning map
- Approval of final subdivision map and condominium map applications
- Approval of street vacations, major street encroachments, changes to public right-of-way and acceptance of public improvements

SAN FRANCISCO PLANNING COMMISSION

- Certification of Final EIR
- Adoption of CEQA findings

- Adoption of findings of consistency with the general plan and priority policies of planning code section 101.1
- Recommendation to the Board of Supervisors to approve a development agreement
- Recommendation to the Board of Supervisors to approve amendments to the general plan
- Recommendation to the Board of Supervisors to approve planning code amendments and zoning map amendments
- Approval of the design standards and guidelines (DSG)
- Adoption of findings with the recommendation of Recreation and Park Commission that the proposed project or variant would have no adverse impact on publicly accessible open space under the jurisdiction of the San Francisco Recreation and Park Commission (planning code section 295)
- General plan referral to the Board of Supervisors for a Major Encroachment Permit
- Office Development Authorization (Proposition M)

JOINT ACTION BY THE PLANNING COMMISSION AND THE RECREATION AND PARK COMMISSION

- Determination that the proposed project would have no adverse impact on publicly accessible open space under the jurisdiction of the Recreation and Park Commission after consultation with the Recreation and Parks Commission (planning code section 295)[22]

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

- Approval of the stormwater and wastewater plans
- Review and approval of erosion and sediment control plan per article 4.1 of the public works code
- Review and approval of any changes to sewer laterals (connections to the City sewer system)
- Review and approval of any changes to existing publicly owned fire hydrants, water service laterals, water meters, and/or water mains
- Review and approval of the size and location of new fire, standard, and/or irrigation water service laterals
- Review and approval of post-construction stormwater design guidelines including a stormwater control plan, in accordance with City's 2016 Stormwater Management Requirements and Design Guidelines
- Review and approval of the landscape plan per the water-efficient irrigation ordinance
- Approval of the use of dewatering wells per article 12B of the health code (joint approval by the health department)
- Review and approval of documentation for non-potable water reuse system per the non-potable water ordinance
- Approval of color curb program
- Consent to the development agreement

[22] This determination would only be necessary if the proposed project would shadow a park with a shadow budget.

SAN FRANCISCO PUBLIC WORKS

- Approval of tentative subdivision map and condominium map application and any minor encroachment permits, or recommendations on any major encroachment permits
- Approval of permits to remove and replace street trees and to remove protected trees on the project site within 10 feet of the public right-of-way
- Approval of permits for streetscape improvements in the public right-of-way
- Approval of street space permit from the Bureau of Street Use and Mapping if sidewalk(s) are used for construction staging and pedestrian walkways are constructed in the curb lane(s)
- Recommendation to the Board of Supervisors for vacations, dedications and realignments, sidewalk widening and improvements in the public right-of-way, including street and bicycle network changes
- Issuance of street improvement permits
- Consent to the development agreement

SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY

- Approval of transit improvements, public improvements, and infrastructure, including certain roadway improvements, bicycle infrastructure and loading zones, and other actions and approvals related to its jurisdictional authority.
- Approval of special traffic permit from the Sustainable Streets Division if sidewalk(s) are used for construction staging and pedestrian walkways are constructed in the curb lane(s)
- Approval of construction within public right-of-way (e.g., bulb-outs and sidewalk extensions) to ensure consistency with the Better Streets Plan
- Approval of placement of bicycle racks on the perimeter sidewalks and within the project site
- Consent to the development agreement

SAN FRANCISCO FIRE DEPARTMENT

- Consent to development agreement

SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION

- Review and approval of demolition, grading, and site/building permits
- Review and approval of construction permit for non-potable water system
- Approval of permit for nighttime construction if any night construction work is proposed that would result in noise greater than 5 dBA above ambient noise levels, as applicable
- Review and approval of plumbing plans for non-potable water reuse system per the Non-potable Water Ordinance

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

- Approval of use of dewatering wells per San Fan Francisco Health Code article 12B
- Approval of a site mitigation plan per San Francisco Health Code article 22A (Maher Ordinance)

- Approval of a construction dust control plan per San Francisco Health Code article 22B
- Approval of an enhanced ventilation proposal per San Francisco Health Code article 38
- Review and approval of design and engineering plans for non-potable reuse system and testing prior to issuance of permit to operate

CHAPTER 3
ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Introduction to the Analysis

This chapter provides a project-level impact analysis of the potentially significant, physical environmental impacts of implementing the proposed project and variant as described in Chapter 2, Project Description. Included in Chapter 3 are separate Sections 3.A through 3.G, each presenting the impact analysis for the key resource topics identified in the initial study, as described below. Sections 3.A through 3.G in this chapter each includes descriptions of the environmental setting and regulatory framework; assessments of project impacts (i.e., offsite, onsite, construction-related, operational, direct, and indirect impacts) and cumulative impacts; and identification of mitigation measures that would reduce or avoid identified significant environmental impacts. This impact overview section describes the scope of analysis in the initial study and EIR and explains the format and basis for the impact analysis for all resource topics, including the cumulative impact analysis.

Scope of Analysis

INITIAL STUDY

As described in Chapter 1, Introduction, the planning department determined that an EIR is required for the proposed project in compliance with the California Environmental Quality Act (CEQA) and published a Notice of Preparation (NOP) (see Appendix A). As part of the preparation for the EIR, the planning department identified resource topics that could be adequately addressed in an initial study. The initial study prepared for this EIR (Appendix B) concludes that many of the physical environmental impacts of the proposed project and variant would result in no impact or less-than-significant impacts, and that mitigation measures agreed to by the project sponsor and required as conditions of approval of the proposed project and variant would reduce most significant impacts to a less-than-significant level. CEQA does not require further assessment of a project's less-than-significant impacts or those that can be reduced to less than significant with mitigation; thus, those issues are not included in this chapter. The issues addressed in the initial study are listed below. Also shown are the corresponding initial study sections and abbreviations for each relevant resource topic:

- Section E.1, Land Use and Planning (LU)
- Section E.2, Population and Housing (PH)
- Section E.3, Cultural Resources (CR) (archeological resources and human remains)
- Section E.4, Tribal Cultural Resources (TCR)
- Section E.8, Greenhouse Gas Emissions (GG)
- Section E.11, Recreation (RE)
- Section E.13, Public Services (PS)
- Section E.14, Biological Resources (BI)
- Section E.15, Geology and Soils (GE)

- Section E.16, Hydrology and Water Quality (HY)
- Section E.17, Hazards and Hazardous Materials (HZ)
- Section E.18, Mineral Resources (MR)
- Section E.19, Energy Resources (EN)
- Section E.20, Agriculture and Forestry Resources (AG)
- Section E.21, Wildfire (WF)

Refer to the initial study in Appendix B for a discussion and the impact analysis of the proposed project and variant with respect to these resource topics.

EIR TOPICS

The resource topic areas addressed in this chapter of the draft EIR are listed below, and the abbreviation for the resource topic used in the naming of impact statements and mitigation measures are shown in parenthesis:

- Section 3.A, Historic Architectural Resources (CR)
- Section 3.B, Transportation and Circulation (TR)
- Section 3.C, Noise (NO)
- Section 3.D, Air Quality (AQ)
- Section 3.E, Wind (WI)
- Section 3.F, Shadow (SH)
- Section 3.G, Utilities and Service Systems (UT)

Overall Approach to Impact Analysis

CEQA Guidelines section 15151 describes standards for the preparation of an adequate EIR. The specific standards under section 15151 are listed below:

- An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information that enables them to make a decision that intelligently takes into account environmental consequences of the project.
- An evaluation of the environmental impacts of a project need not be exhaustive; rather, the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible.
- Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.

In practice, the above points indicate that EIR preparers should adopt a reasonable methodology upon which to estimate impacts. This approach means making reasonable assumptions using the best information available.

Scope and Organization of This Chapter

The environmental topics analyzed in this chapter include the following subsections:

- **Introduction.** This subsection includes a brief description of the types of impacts that are analyzed as well as a summary of the impacts that were scoped out in the initial study (e.g., impacts that were determined to result in a less-than-significant impact or no impact).
- **Regulatory Framework.** This subsection describes the relevant federal, state, and local regulatory requirements that are directly applicable to the environmental topic being analyzed.
- **Environmental Setting.** This subsection presents a description of existing baseline physical conditions on the project site and in the surroundings at the time of issuance of the NOP, with enough detail and breadth to allow a general understanding of the environmental impacts of the proposed project and variant.
- **Impacts and Mitigation Measures.** This subsection describes the physical environmental impacts (e.g., the changes to baseline physical environmental conditions) that could result from implementation of the proposed project and variant, as well as any mitigation measures that could avoid, eliminate, or reduce identified significant impacts. The analysis includes construction and operation of the proposed project and variant. Each subsection provides the criteria that have been developed by the planning department for use in determining whether an impact is significant. Environmental topic sections also include an "Approach to Analysis" subsection. This discussion explains the parameters, assumptions, and data used in the analysis.

  Under the "Impact Evaluation" discussion, the impact analysis begins with an impact statement that reflects one or more of the applicable significance criteria. Some significance criteria may be combined in a single impact statement, if appropriate. Each impact statement is keyed to a subject area abbreviation (e.g., NO for Noise) and an impact number (e.g., 1, 2, 3) for a combined alpha-numeric code (e.g., Impact NO-1, Impact NO-2, etc.). Both project-level and cumulative impacts are analyzed. Project-level impacts could result from actions related to implementation of the proposed project or the variant. Cumulative impacts could result from implementation of the proposed project or the variant in combination with other cumulative projects in the study area. As discussed under "Cumulative Setting," below, the projects listed in Table 3-1, Cumulative Projects within a 0.50-Mile Radius of the Project Site, p. 3-7, in conjunction with the proposed project or the variant, are considered the cumulative scenario for the analysis of cumulative impacts.

  When potentially significant impacts are identified, mitigation measures are identified, that would avoid, eliminate, or reduce significant adverse impacts of the proposed project and variant. All mitigation measures will be required as conditions of project approval. Each mitigation measure corresponds to the impact statement and has an "M" in front to signify it is a mitigation measure (e.g., Mitigation Measure M-NO-1 for a mitigation measure that corresponds to Impact NO-1). If there is more than one mitigation measure for the same impact statement, the mitigation measures are numbered with a lowercase letter suffix (e.g., Mitigation Measures M-NO-1a and M-NO-1b).

  Pursuant to CEQA Guidelines section 15126.4, mitigation measures are not required for environmental impacts that are not found to be significant. Therefore, for resource topics where this EIR finds the physical environmental impact of the proposed project or variant to be less than significant, but for which the planning department has identified measures that would further lessen the project's already less-than significant impacts, these measures have been identified as "improvement measures." These

improvement measures can be imposed as conditions of approval by the decision makers approving the proposed project or variant.

Significance Determinations

A "significant effect" is defined by CEQA Guidelines section 15382 as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

The significance criteria used in this draft EIR are based on the planning department's thresholds of significance for assessing the severity of the environmental impacts of the proposed project and variant. The planning department's guidance is based on CEQA Guidelines Appendix G, with some modifications. The level of significance of the impact is indicated in parentheses at the end of the impact statement based on the following terms:

- **No Impact** – No adverse physical changes (or impacts) to the environment are expected.
- **Less than Significant** – Impact that would not exceed the defined significance criteria or would be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations.
- **Less than Significant with Mitigation** – Impact that is reduced to a less-than-significant level through implementation of the identified mitigation measure or measures.
- **Significant and Unavoidable with Mitigation** – Impact that exceeds the defined significance criteria and cannot be reduced to less-than-significant levels through compliance with existing local, state, and federal laws and regulations and/or implementation of all feasible mitigation measures.
- **Significant and Unavoidable** – Impact that exceeds the defined significance criteria and cannot be eliminated or reduced to a less-than-significant level through compliance with existing local, state, and federal laws and regulations and for which there are no feasible mitigation measures.

CEQA Guidelines section 15125 states that the "environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." The environmental setting typically includes the existing physical conditions on the project site and vicinity at the time of NOP publication, including projects that are under construction. The environmental analysis then presents existing and existing-plus-project and variant scenarios to identify environmental impacts that would occur from implementation of the proposed project and variant. With the exception of the transportation analysis as described in Section 3.B, Transportation and Circulation, under Approach to Analysis, p. 3.B-23, the analysis in this draft EIR uses the existing environmental setting at the time of NOP publication, as the baseline physical conditions to determine whether an impact is significant.

CEQA Requirements and Approach to Cumulative Impact Analysis

CEQA REQUIREMENTS FOR CUMULATIVE IMPACT ANALYSIS

Cumulative impacts, as defined in CEQA Guidelines section 15355, refer to two or more individual effects that, when taken together, are "considerable" or that compound or increase other environmental impacts. A cumulative impact from several projects is the change in the environment that would result from the incremental impact of the project added to the impacts of other reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in CEQA Guidelines section 15130:

- An EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (e.g., the incremental effects of an individual project are considerable when viewed in connection with the effects of other reasonably foreseeable projects, including those outside the control of the lead agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- A project's contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.
- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

The cumulative impact analysis for each individual resource topic is described in each resource section immediately following the description of the direct project impacts and identified mitigation measures.

APPROACH TO CUMULATIVE IMPACT ANALYSIS

Two approaches to a cumulative impact analysis are provided in CEQA Guidelines section 15130(b)(1):

- The analysis can be based on a list of present and probable future projects producing related or cumulative impacts; or
- A summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The following factors were used to determine an appropriate list of projects to be considered in the near-term cumulative impact analysis:
  - **Similar Environmental Impacts.** A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project or plan is defined as one that is "reasonably foreseeable," such as a proposed project for which an application has been filed with the approving agency or has approved funding, or an approved plan that amended the land use controls applicable to an adjacent neighborhood.
  - **Geographic Scope and Location.** A relevant project is located within the defined geographic scope for the cumulative effect.

- **Timing and Duration of Implementation.** Effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with the effects of the proposed project.

The analyses in this draft EIR and initial study employ a list-based approach and projections-based approach, depending on the environmental topic analyzed. For instance, the cumulative analysis for noise considers individual projects that are anticipated to occur in the project site vicinity that may affect noise sensitive receptors also affected by the proposed project (list-based approach). By comparison, the cumulative utilities analysis relies on a projection of overall citywide growth and other reasonably foreseeable projects, which is the typical methodology the planning department applies to analysis of utilities impacts (projections-based approach).

CUMULATIVE SETTING

Cumulative projects within a 0.50-mile radius of the project site are listed below in **Table 3-1** and mapped on **Figure 3-1**, p. 3-9. These cumulative projects are projects that are currently under review by the planning department or a building permit is on file or has been approved by the San Francisco Department of Building Inspection (building department).

Table 3-1 Cumulative Projects within a 0.50-Mile Radius of the Project Site

Key No.	Project Name (Case File No.)	Status as of NOP	Dwelling Units	Retail Sales and Services (gsf)	Non-Retail Sales and Services (gsf)	Institutional (gsf)	Public Open Space (acres)	Students	Construction Schedule
1	**460 West Portal Avenue (2017-014374PRJ)** Conversion of an existing 2-story, 3-bedroom single-family residence to provide administrative office, meeting, and guest faculty housing spaces to support the existing Educational Uses at the adjacent property located at 470 West Portal Avenue, the San Francisco Waldorf High School.	Planning Application Approved				1,400			
2	**Parkmerced (2008.0021ENV)** Subsequent phases of the Parkmerced project would add up to 5,679 new residential units to the 152-acre site's existing 3,221 housing units. It would also provide new commercial and retail services and open space. The transportation plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood and would include rerouting of the M-line light rail through the development and five major intersection improvements (including State Route 1/19th Ave), and structured underground parking beneath each block. The full project has a 15- to 30-year construction horizon, and would include demolition of existing buildings an. At buildout, the project would consist of approximately 8,900 dwelling units (including approximately 5,679 new units), approximately 6,252 net new spaces, 310,000 gross square feet of commercial use, 25,000 square feet of educational use, and 164,000 gross square feet of other uses (100,000 square feet of building and maintenance use, and 64,000 square feet of recreation/fitness center/community center).	Building Permits Issued for Phase 1[a]	5,679 (net new)	310,000	164,000	25,000			2018–2040

Key No.	Project Name (Case File No.)	Status as of NOP	Dwelling Units	Retail Sales and Services (gsf)	Non-Retail Sales and Services (gsf)	Institutional (gsf)	Public Open Space (acres)	Students	Construction Schedule
3	**San Francisco State University Future State 2035 (Future State 2035)** Future State 2035 is a long-term planning document of projects to be implemented over a 15-year time period to upgrade campus structures and infrastructure improvements.	Planning stage	9,970[b]			1.5 million (net new)[c]	3.6 acres	5,000 (net new full-time equivalent)	2020–2035
4[d]	**Lake Merced Boulevard Quick-Build Pedestrian Safety Improvements (SFMTA)** The Lake Merced Boulevard Quick-Build Pedestrian Safety Improvements Project will build on the Lake Merced Bikeway Feasibility Study and Lake Merced Pedestrian Safety Study through a quick-build project on Lake Merced Boulevard from Skyline Boulevard to John Muir Drive. Spot improvements may include improvements such striping and crosswalk upgrades, additional signage, narrowing of traffic lanes, traffic beacons, and pedestrian refuge islands. Corridor-wide improvements may include road lane reductions and new protected bike facilities.								2022–2023

SOURCES: San Francisco Planning Department, 460 West Portal Avenue (2017-014374PRJ), https://sfplanninggis.org/pim/, accessed May 16, 2022;
City and County of San Francisco, *Development Agreement by and between the City and County of San Francisco and Parkmerced Investors Properties LLC Relative to the Development Known as the Parkmerced Development Project*, https://default.sfplanning.org/publications_reports/parkmerced/Parkmerced_Development_Agreement_As_Recorded.pdf, accessed June 2, 2022;
San Francisco Planning Department, Quarter 4, 2021 Pipeline Report, https://data.sfgov.org/Housing-and-Buildings/SF-Development-Pipeline-2021-Q4/9r2x-93qm, accessed May 12, 2022;
San Francisco State University, *Future State 2035 San Francisco State University Campus Vision Plan*, September 14, 2018, https://plan.sfsu.edu/sites/default/files/documents/futurestate_draft.pdf, accessed June 1, 2022;
San Francisco Municipal Transportation Agency, Lake Merced Quick-Build Project, https://www.sfmta.com/projects/lake-merced-quick-build-project, accessed June 1, 2022

NOTES:

[a] Building permits have been approved for 1,013 unit under Phase I of the Parkmerced project. This includes 89 units at 300 Arballo Drive (2014.1370GEN_04), 64 units at 199 Vidal Drive (2014.1370GEN_06), 248 units at 455 Serrano Drive and 850 Gonzalez Drive (2014.1370GEN), 299 units at 1188-1198 Junipero Serra Boulevard (2014.1370GEN_03), and 313 units at 21 and 25 Chumasero Drive (2014.1370GEN_02).
[b] 9,100 new student housing units and 870 apartments
[c] Includes academic, student life and support, shared uses, administration, and service center uses.
[d] Transportation network improvements are not included in this table as they primarily relate to EIR Section 3.B, Transportation and Circulation, and are therefore addressed in that section.

SOURCE: Esri, 2021; San Francisco Planning Department, 2021; ESA, 2022

Stonestown Development Project

FIGURE 3-1

CUMULATIVE PROJECTS WITHIN 0.5-MILE OF THE PROJECT SITE

INTENTIONALLY BLANK

3.A Historic Architectural Resources

3.A.1 Introduction

This section assesses impacts of the proposed project on historic architectural resources. It outlines the regulatory framework, describes the existing environmental setting as it relates to historic architectural resources, identifies potential historic architectural resources near the project site, evaluates potential direct and indirect impacts on historic architectural resources that could result from implementation of the proposed project or variant, and identifies mitigation measures to reduce potential adverse impacts. Project-related impacts on archeological resources, human remains, and tribal cultural resources are addressed in Appendix B, Initial Study, of this EIR.

DEFINITIONS AND DATA SOURCES

A historical resource is defined in CEQA Guidelines section 15064.5(a) as one that is listed in, or determined to be eligible for listing in, the California Register of Historical Resources (California Register). In addition, a resource that (i) is identified as significant in a local register of historical resources, such as San Francisco Planning Code article 10 and/or article 11, or (ii) is deemed significant due to its identification in a historical resources survey meeting the requirements of California Public Resources Code section 5024.1(g) is presumed to be a historical resource "unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant." CEQA section 21084.1 also permits a lead agency to determine that a resource constitutes a historical resource even if the resource does not meet the foregoing criteria.

For the purposes of this analysis, the term *historic architectural resource* is used to distinguish such resources from archeological resources, which may also be considered historical resources under CEQA. Archeological resources, including archeological resources that are potentially historical resources under CEQA Guidelines section 15064.5, are addressed in the initial study (see Appendix B).

The information and analysis included in this section are based on the *Stonestown Galleria Complex Historic Resource Evaluation, Part 1*; the *Historic Resource Evaluation Response for 501 Buckingham Way, Part I* (HRER Part I); the *Historic Resource Evaluation Response for 501 Buckingham Way, Part II* (HRER Part II); and *Memorandum to File Regarding Properties Adjacent to Stonestown*.[23] The historic resource evaluation and responses are included in Appendix C.1 to C.3 of this EIR.

3.A.2 Regulatory Framework

The following section summarizes federal, state, and local plans and policies that have regulatory authority over historical resources.

[23] Page & Turnbull, *Stonestown Galleria Complex Historic Resource Evaluation, Part I*, prepared for San Francisco Planning Department, Final, May 24, 2022; San Francisco Planning Department, *Historic Resource Evaluation Response for 501 Buckingham Way, Part I,* March 31, 2022; San Francisco Planning Department, *Historic Resource Evaluation Response for 501 Buckingham Way, Part II,* June 17, 2022; Justin Greving, Senior Preservation Planner, San Francisco Planning Department, Memorandum to File correspondence with Florentina Craciun, Senior Environmental Planner, San Francisco Planning Department, October 24, 2022.

FEDERAL REGULATIONS

Although the proposed project is not anticipated to require compliance with National Historic Preservation Act section 106, the federal guidelines related to the treatment of cultural resources are relevant for the purposes of determining whether cultural resources, as defined under CEQA, are present and guiding the treatment of such resources. The sections below summarize the relevant federal regulations and guidelines.

NATIONAL HISTORIC PRESERVATION ACT

The National Historic Preservation Act of 1966 was passed primarily to acknowledge the importance of protecting our nation's heritage from rampant federal development. The National Historic Preservation Act:

- Sets the federal policy for preserving our nation's heritage;
- Establishes a federal-state and federal-tribal partnership;
- Establishes the National Register of Historic Places and National Historic Landmarks Programs;
- Mandates the selection of qualified State Historic Preservation Officers;
- Establishes the Advisory Council on Historic Preservation;
- Charges federal agencies with responsible stewardship; and
- Establishes the role of Certified Local Governments within the States.

While the National Historic Preservation Act sets federal policy for historic preservation, the actual regulations can be found in 36 Code of Federal Regulations part 800, Protection of Historic Properties. This provides guidelines on how to follow the policy set forth in the National Historic Preservation Act.

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places (National Register) is the nation's master inventory of cultural resources worthy of preservation. Administered by the National Park Service, the National Register includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archeological, or cultural significance at the national, state, or local level. Typically, a resource that is more than 50 years of age is eligible for listing in the National Register if it meets any one of the four eligibility criteria and retains sufficient historical integrity. A resource less than 50 years old may be eligible if it can be demonstrated that it is of "exceptional importance" or a contributor to a historic district. National Register criteria are defined in *National Register Bulletin Number 15: How to Apply the National Register Criteria for Evaluation*.[24]

A structure, site, building, district, or object would be eligible for listing in the National Register if it can be demonstrated that it meets at least one of the following four evaluative criteria:

- **Criterion A (Event):** Properties associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion B (Person):** Properties associated with the lives of persons significant in our past;

[24] U.S. Department of the Interior, National Park Service, *National Register Bulletin,* 1997, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf, accessed May 10, 2021.

- **Criterion C (Design/Construction):** Properties that embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant distinguishable entity whose components lack individual distinction; and
- **Criterion D (Information Potential):** Properties that have yielded, or may be likely to yield, information important in prehistory or history.

Although there are exceptions, certain kinds of resources are not usually considered for listing in the National Register: these include religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

In addition to meeting at least one of the four criteria, a property or district must retain integrity, meaning that it must have the ability to convey its significance through the retention of seven aspects, or qualities, that in various combinations define integrity:

- *Location:* Place where the historic property was constructed;
- *Design:* Combination of elements that create the form, plans, space, structure, and style of the property;
- *Setting:* The physical environment of the historic property, inclusive of the landscape and spatial relationships of the buildings;
- *Materials:* The physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property;
- *Workmanship:* Physical evidence of the crafts of a particular culture or people during any given period in history;
- *Feeling:* The property's expression of the aesthetic or historic sense of a particular period of time; and
- *Association:* Direct link between an important historic event or person and an historic property.

Properties that are listed in the National Register, as well as properties that are formally determined to be eligible for listing in the National Register, are automatically listed in the California Register and therefore are considered historical resources under CEQA.[25]

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

The *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Secretary's Standards) were published and codified as 36 Code of Federal Regulations 68 in 1995 and updated in 2017.[26] The Secretary's Standards for rehabilitation have been adopted by local government bodies across the country, including the City and County of San Francisco, for reviewing proposed work on historic properties under local preservation

[25] *California Code of Regulations*, title 14, section 4851, Historical Resources Eligible for Listing in the California Register of Historical Resources, https://casetext.com/regulation/california-code-of-regulations/title-14-natural-resources/division-3-department-of-parks-and-recreation/chapter-115-california-register-of-historical-resources/section-4851-historical-resources-eligible-for-listing-in-the-california-register-of-historical-resources, accessed August 30, 2022.
[26] U.S. Department of the Interior, National Park Service (Kay D. Weeks and Anne E. Grimmer), *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstruction Historic Buildings*, revised 2017, http://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf, accessed August 30, 2022.

ordinances. The Secretary's Standards provide a useful analytical tool for understanding and describing the potential impacts of changes to historic resources and are used to inform CEQA review. Developed by the National Park Service for reviewing certified rehabilitation tax credit projects, the rehabilitation standards provide guidance for reviewing work on historic properties. The rehabilitation standards are as follows:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale, and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Conformance with all rehabilitation standards does not determine whether a project would cause a substantial adverse change in the significance of a historic resource under CEQA. Rather, projects that comply with the standards benefit from a regulatory presumption that they would have a less-than-significant adverse impact on a historic resource. Projects that do not comply with the rehabilitation standards may or may not cause a substantial adverse change in the significance of a historical resource and would require further analysis to determine whether the historical resource would be "materially impaired" by the project under CEQA Guidelines section 15064.5(b).

STATE REGULATIONS

California implements the National Historic Preservation Act through its statewide comprehensive cultural resource preservation programs. The California Office of Historic Preservation, an office of the California Department of Parks and Recreation, implements the policies of the National Historic Preservation Act on a statewide level. The California Office of Historic Preservation also maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the state's jurisdiction.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA, as codified in Public Resources Code section 21000 et seq. and implemented by the CEQA Guidelines (14 CCR section 15000 et seq.), is the principal statute governing environmental review of projects in California. As stated above, CEQA defines a historical resource as a property listed in, or eligible for listing in, the California Register; included in a qualifying local register; or determined by the lead agency to be historically significant. In order to be considered a historical resource, a property must generally be at least 50 years old; when acting as the CEQA lead agency, the San Francisco Planning Department (planning department) uses a threshold of 45 years. A "historical resource" is defined in CEQA Guidelines section 15064.5 as a cultural resource (i.e., a built-environment resource, archeological resource, or human remains) that meets at least one of the following criteria:

1. A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in, the California Register.
2. A resource included in a local register of historic resources, as defined in Public Resources Code section 5020.1(k) or identified as significant in a historic resource survey meeting the requirements of Public Resources Code section 5024.1(g), shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historic resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register.
4. The fact that a resource is not listed in, or determined to be eligible for listing in the California Register, not included in a local register of historic resources (pursuant to Public Resources Code section 5020.1(k)), or identified in a historic resources survey (meeting the criteria in Public Resources Code section 5024.1(g)) does not preclude a lead agency from determining that the resource may be a historic resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

Therefore, under the CEQA Guidelines, even if a resource is not included in any local, state, or federal register, or identified in a qualifying historical resources survey, a lead agency may still determine that any resource is a historical resource for the purposes of CEQA if there is substantial evidence supporting such a determination. A lead agency must consider a resource to be historically significant if it finds that the resource meets the criteria for listing in the California Register.

CEQA requires a lead agency to determine if a proposed project would have a significant effect on important historical resources or unique archeological resources. If a resource is neither a unique archeological resource nor a historical resource, the CEQA Guidelines note that the effects of the project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines section 15064.5(c)(4)). As noted above, projects that comply with the Secretary's Standards benefit from a regulatory presumption under CEQA that they would have a less-than-significant impact on a historical resource. Projects that do not comply with the Secretary's Standards may or may not cause a substantial adverse change in the significance of a historical resource and must be subject to further analysis to assess whether they would result in material impairment of a historical resource's significance.

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

The California Register, administered by the California Office of Historic Preservation, is the authoritative guide to historical and archeological resources that are significant within the context of California's history. Criteria for eligibility for inclusion in the California Register are based on and correspond to the National Register criteria. Certain resources are determined under CEQA to be automatically included in the California Register, including California properties formally eligible for or listed in the National Register. These resources are considered historical resources by the planning department for the purposes of CEQA. The evaluative criteria used for determining eligibility for listing in the California Register closely parallel those developed by the National Park Service for the National Register but include relevance to California history. To be eligible for listing in the California Register as a historical resource, a resource must meet at least one of the following criteria (Public Resources Code section 5024.1(c)):

- *Criterion 1 (Event):* Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;
- *Criterion 2 (Person):* Resources that are associated with the lives of persons important to local, California, or national history;
- *Criterion 3 (Design/Construction):* Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master or possesses high artistic values; or
- *Criterion 4 (Information Potential):* Resources that have yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

A historical resource must also possess integrity in addition to meeting the significance criteria to be considered eligible for listing in the California Register. Consideration of integrity for evaluation of California Register eligibility closely follows the seven aspects of integrity that apply to the National Register (listed above).

LOCAL REGULATIONS, PLANS, AND POLICIES

SAN FRANCISCO GENERAL PLAN

The San Francisco General Plan (general plan) Urban Design, Recreation and Open Space, and Housing Elements address issues related to historic preservation by providing policies that emphasize preservation of notable landmarks and historic features, remodeling older buildings, and respecting the character of older

buildings adjacent to new development. Policies in the general plan relevant to historic resources are identified below.[27]

URBAN DESIGN ELEMENT

The Urban Design Element of the general plan includes the following policies related to historic preservation:

- *Policy 2.4:* Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.
- *Policy 2.5:* Use care in remodeling of older buildings in order to enhance rather than weaken the original character of such buildings.
- *Policy 2.6:* Respect the character of older development nearby in the design of new buildings.

RECREATION AND OPEN SPACE ELEMENT

The Recreation and Open Space Element includes the following policies related to historic preservation:

- *Policy 1.12:* Preserve historic and culturally significant landscapes, sites, structures, buildings, and objects.
- *Policy 1.13:* Preserve and protect character-defining features of historical resources in City parks when it is necessary to make alterations to accommodate new needs or uses.

HOUSING ELEMENT

The Housing Element[28] of the general plan includes the following policy related to historic preservation:

- *Policy 11.7:* Respect San Francisco's historic fabric, by preserving landmark buildings and ensuring consistency with historic districts.

SAN FRANCISCO PLANNING CODE

The City's commitment to historic preservation is codified in San Francisco Planning Code section 101.1(b), which establishes eight general plan priority policies. Priority Policy 7 of planning code section 101.1(b) addresses the City's desire to preserve landmarks and historic buildings and states "that landmarks and historic buildings be preserved."

SAN FRANCISCO HISTORIC PRESERVATION COMMISSION

The San Francisco Historic Preservation Commission (HPC) is a seven-member body that makes recommendations directly to the San Francisco Board of Supervisors regarding the designation of landmark buildings, historic districts, and significant buildings. The HPC approves certificates of appropriateness for individual landmarks and landmark districts designated under article 10 and permits to alter for individual properties and conservation districts listed under article 11. The HPC reviews and comments on CEQA

[27] San Francisco Planning Department, *San Francisco General Plan*, https://generalplan.sfplanning.org/, accessed August 19, 2022.
[28] The San Francisco Housing Element 2022 Update is currently underway. The housing element update includes policies designed to improve housing affordability and advance racial and social equity and would shift an increased share of the city's future housing growth to transit corridors and low-density residential districts within certain areas of the city. It would not include specific changes to existing land use controls (e.g., zoning) or approve any physical development, but the EIR will evaluate the potential physical environmental impacts that could result from future actions regarding implementation of the policies proposed under the housing element.

documents for projects that affect historic resources as well as projects that are subject to review under National Historic Preservation Act section 106.

Article 10 Landmarks

Planning code article 10, Preservation of Historical, Architectural and Aesthetic Landmarks, provides for official designation of landmarks and historic districts that have "a special character or special historical, architectural or aesthetic interest or value." Landmarks can be buildings, sites, or landscape features. Landmark status provides the greatest level of protection for historic resources in San Francisco; in general, alteration of a landmark requires approval by the HPC with a certificate of appropriateness.

None of the buildings on the project site are an article 10 landmark and the project site is not located in an article 10 historic district.

Article 11 Buildings and Conservation Districts

Planning code article 11, Preservation of Buildings and Districts of Architectural, Historical, and Aesthetic Importance in the C-3 Districts, governs approximately 430 downtown buildings. There are five ratings for buildings under article 11. Category I and II buildings ("Significant Buildings") are the most important. Contributory Buildings have a lesser level of significance and are classified as Category III or Category IV, depending on whether they are within an identified conservation district. Buildings in Categories I through IV are considered historical resources under CEQA. Unrated or non-contributory buildings are assigned to Category V. An important provision of article 11 is the establishment of conservation districts, defined as "substantial concentrations of buildings that together create subareas of special architectural and aesthetic importance." Alteration of an article 11 building requires approval by the HPC with a permit to alter.

The project site is not located in nor adjacent to a C-3 District and therefore is not within an article 11 conservation district.

SAN FRANCISCO PLANNING DEPARTMENT CEQA REVIEW PROCEDURES FOR HISTORICAL RESOURCES

The planning department prepared the *CEQA Review Procedures for Historic Resources* to provide guidance in determining whether a resource is considered a historical resource as defined by CEQA.[29] Three categories of properties are defined, as follows:

- *Category A.* Category A has two subcategories:
  - *Category A.1.* Resources listed in or formally determined to be eligible for the California Register.
  - *Category A.2.* Resources listed in adopted local registers, or properties that appear eligible, or may become eligible, for the California Register.
- *Category B.* Properties requiring further consultation and review.
- *Category C.* Properties determined not to be historical resources, or properties for which the City has no information indicating that the property is a historical resource.

[29] San Francisco Planning Department, *Preservation Bulletin No. 16, CEQA Review Procedures for Historic Resources, Draft*, March 31, 2008, https://sfplanning.org/sites/default/files/documents/preserv/bulletins/HistPres_Bulletin_16.PDF, accessed August 30, 2022.

To determine if a property is eligible as a historical resource for the purposes of CEQA, the planning department evaluates a property's individual significance for listing in the California Register and a property's relationship to any eligible historic district.

To assess impacts within historic districts, the planning department examines several factors including, but not limited to, size and significance of a historic district, number and location of contributing features/non-contributing features, character defining features, district integrity, district boundaries, and details of the proposed project. Assessments within historic districts are examined on a case-by-case basis, due to the wide variety and unique nature of historic resources and historic districts.

LEGACY BUSINESS REGISTRY

In March 2015, the Board of Supervisors approved Ordinance No. 29-15 amending the administrative code to direct the Small Business Commission to establish a Legacy Business Registry. The Legacy Business Registry works to save longstanding, community-serving businesses that so often serve as valuable cultural assets. The City intends that the registry be a tool for providing educational and promotional assistance to legacy businesses to encourage their continued viability and success. In November 2015, voters approved Local Measure J, establishing the Legacy Business Historic Preservation Fund. Measure J also expanded the definition of a legacy business to include those that have operated in San Francisco for more than 20 years, are at risk of displacement, and meet all other requirements of the registry.[30]

While it may occupy a building that is considered to be a historic resource, a legacy business on its own is not considered to be a historic resource for the purposes of CEQA.

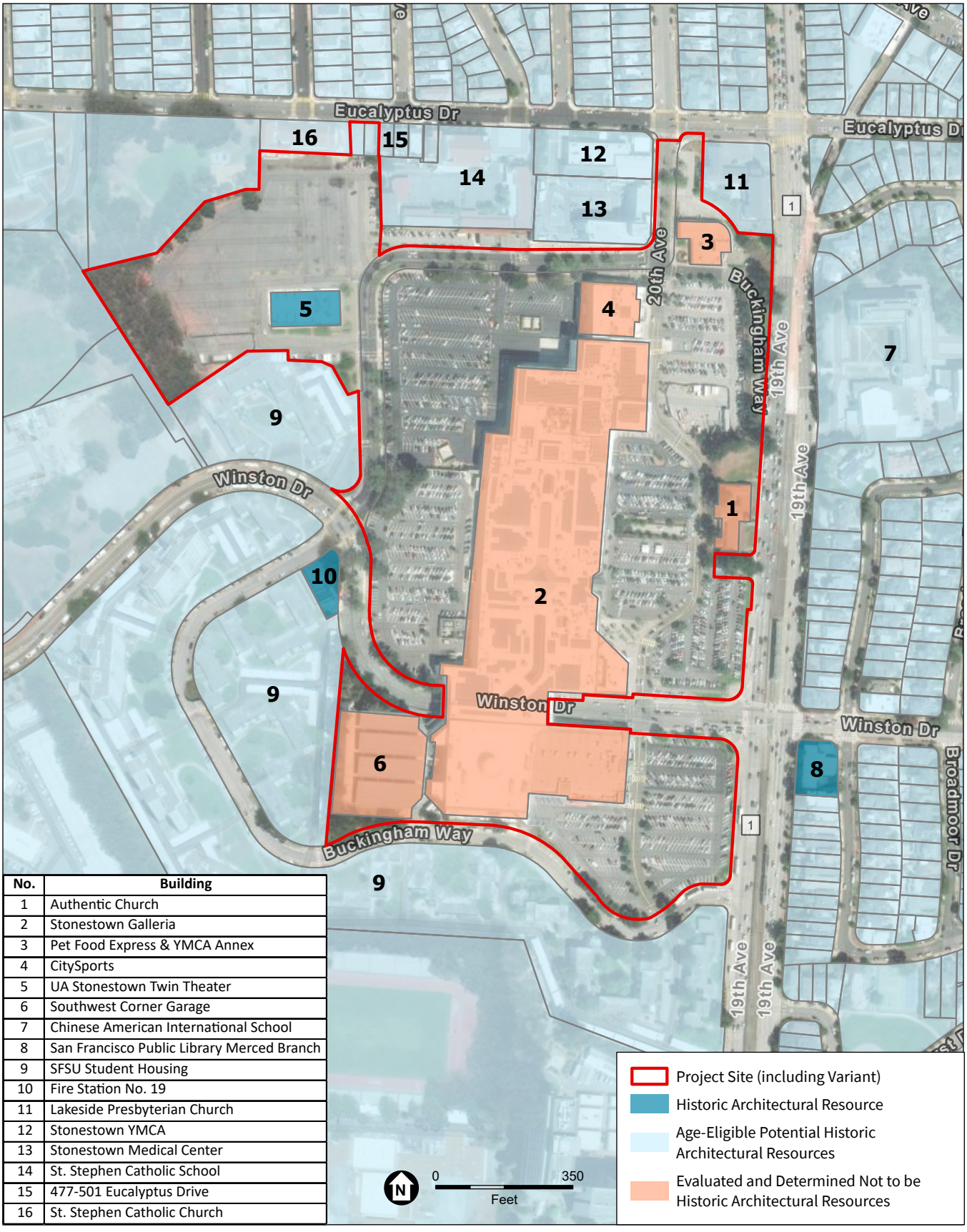
3.A.3 Environmental Setting

The project site is located in the Lakeshore area in southwest San Francisco. The project site is generally bounded by the Stonestown Family YMCA and other commercial and institutional uses, and Eucalyptus Drive to the north; 19th Avenue to the east; San Francisco State University (SFSU) campus to the south; and Lowell High School, SFSU housing, and Buckingham Way to the west. Potential historic and identified historic resources in the project vicinity and within the project site are shown in **Figure 3.A-1** and described below. Potential historic resources currently are identified with a Category B historic resource status rating by the planning department, which is applied to properties that are at least 45 years old and require further consultation and review. Category A properties are considered historic resources as they have been listed in or formally determined to be eligible for listing in the California Register, or are properties that are listed in adopted local registers, or appear to be eligible, or may become eligible for listing in the California Register.

ADJACENT NEIGHBORHOOD AND PROPERTIES

Properties east of the project site, across 19th Avenue, include a variety of single-family homes and institutional buildings. Single-family homes are located across 19th Avenue, between Eucalyptus Drive and continuing southeast of the project site to the intersection of Denslow Drive and 19th Avenue. All of these single-family homes are currently Category B properties and were predominantly built in the 1950s. Other properties include the Chinese American International School (formerly Mercy High School) located at 3250

[30] San Francisco Planning Department, "Cultural Heritage," https://sfplanning.org/cultural-heritage, accessed August 30, 2022.



No.	Building
1	Authentic Church
2	Stonestown Galleria
3	Pet Food Express & YMCA Annex
4	CitySports
5	UA Stonestown Twin Theater
6	Southwest Corner Garage
7	Chinese American International School
8	San Francisco Public Library Merced Branch
9	SFSU Student Housing
10	Fire Station No. 19
11	Lakeside Presbyterian Church
12	Stonestown YMCA
13	Stonestown Medical Center
14	St. Stephen Catholic School
15	477-501 Eucalyptus Drive
16	St. Stephen Catholic Church

SOURCE: Maxar, 2021; ESA, 2022

Stonestown Development Project

FIGURE 3.A-1
POTENTIAL HISTORIC AND HISTORIC ARCHITECTURAL RESOURCES IN THE PROJECT VICINITY

19th Avenue (a Category B property constructed in 1952). The San Francisco Public Library Merced Branch, located at 155 Winston Drive is a historic resource (Category A, constructed in1957).[31]

Properties south of the project site include the SFSU campus and residential dorms located along Buckingham Way and Winston Drive located on streets that curve around the south and west of the project site. Based on planning department records, the SFSU campus has not been evaluated for California Register eligibility, although some individual buildings on campus have been preliminarily determined to have potential individual significance as distinguished examples of Brutalist architecture. While the core of the SFSU campus includes larger institutional buildings, the residential dorms that line Winston Drive and Buckingham Way include a range of low-scale 2- and 3-story modernist apartment buildings and taller 10-story blocks of apartment buildings that were originally constructed as part of the residential portion of Stonestown. According to current planning department records, the SFSU dorm buildings were constructed in the early 1950s and are currently Category B properties.[32]

The only known historic resource to the west of the project site is Fire Station No. 19 at 390 Buckingham Way (Category A property constructed 1953). This fire station is a contributor to the California Register-eligible San Francisco 1952 Firehouse Bond Thematic historic district.[33]

Properties north of the project site include single family homes just north of Eucalyptus Avenue, and commercial and institutional properties located between Eucalyptus Drive and the project site. The Stonestown YMCA at 333 Eucalyptus Drive (Category B, constructed in 1953) and Stonestown Medical Building 595 Buckingham Way (Category B, constructed in 1948) are located at the southwest corner of Eucalyptus Drive and 20th Avenue. Further east is the Lakeside Presbyterian Church at 201 Eucalyptus Drive located at the southwest corner of Eucalyptus Drive and 19th Avenue (Category B property constructed 1952).[34] Just west of the YMCA is the St. Stephen Catholic School at 401 Eucalyptus Drive, a Category B property with an unknown construction date. Further west are other Category B properties including four single-family homes at 477–501 Eucalyptus Drive (constructed in the late 1940s) and St. Stephen Catholic Church at 601 Eucalyptus Drive (constructed in 1963).

STONESTOWN GALLERIA COMPLEX

Within the project site, six buildings and structures are considered potential historic architectural resources as they are at least 45 years old, and each was evaluated in the 2022 historic resource evaluation. The six buildings and structures include: the Authentic Church (3355 19th Avenue), Stonestown Galleria (400 Winston Drive), YMCA Annex and Pet Food Express (3140–3160 20th Avenue), City Sports (3201 20th Avenue), the southwest corner parking garage (285 Winston Drive), and the former United Artists (UA) Stonestown Twin Theater (501 Buckingham Way). None of these six buildings or structures are currently listed in the National Register or California Register, and none are listed in the Built Environment Resource Directory (BERD) for San Francisco County that is maintained by the California Office of Historic Preservation. Additionally, none were included in the 1976 Department of City Planning Architectural Quality Survey.[35]

[31] Greving, Justin, Senior Preservation Planner, San Francisco Planning Department, Memorandum to File correspondence with Florentina Craciun, Senior Environmental Planner, San Francisco Planning Department, October 24, 2022, pp. 1 and 2.
[32] Ibid., p. 2.
[33] Ibid.
[34] Ibid.
[35] Page & Turnbull, pp. 3–4.

Of the six buildings and structures within the project site evaluated in the 2022 historic resource evaluation, the planning department agreed with the findings of the historic resource elevation that determined only the former UA Stonestown Twin Theater at 501 Buckingham Way is individually eligible for listing on the California Register, and no eligible historic district was identified (see Figure 3.A-1). The other five age-eligible buildings within the project site were determined to not qualify as historic resources under CEQA. Therefore, only the theater at 501 Buckingham Way within the project site is considered to be a historic resource under CEQA. The property description below and historic context on the following pages are specific to the theater.

Boudin Bakery has been identified as a legacy business (see Section 3.A.2, Regulatory Framework) and operates one location within the Stonestown Galleria shopping center (3251 20th Avenue).[36] However, according to the legacy business application for Boudin Bakery, none of the physical features that qualify Boudin Bakery as a legacy business relate to its retail location in Stonestown.[37] As noted above, the Stonestown Galleria shopping mall was determined to not qualify as a historic resource. Therefore, the retail location of this legacy business within Stonestown is not considered a historic resource under CEQA.

PROPERTY DESCRIPTION[38]

The former UA Stonestown Twin Theater is located at 501 Buckingham Way within Block/Lot 7295/022. Built in 1970, the theater is an example of the New Formalism style of architecture, which is described in more detail below. The one-story building has a roughly rectangular footprint, is of reinforced concrete construction with a concrete slab foundation, capped by a flat roof covered with built-up roofing. The building's overall mass comprises three distinct components: a New Formalism-style colonnaded entrance and lobby on the east end, an undecorated stucco-clad volume on the west end that contains two auditoriums, and a stucco-clad hyphen in the center that connects the east and west components.

The primary façade faces east and features a New Formalism-style colonnade that wraps partially around the north and south façades. Within the colonnade of round, *groin-vaulted*[39] arches is a glazed wall system with bronze anodized aluminum-frame windows. Pairs of glazed, aluminum-frame doors are located on the north, east, and south façades. An internal box office and a secondary office occupy the westernmost bays of the lobby that are adjacent to the hyphen on the north and south façades, respectively. The taller rear portion of the building (which contains the auditoriums) features two pairs of flush metal doors on the north and south façades and a continuous, recessed channel below the roofline.

The building occupies a sloped site and is separated from Buckingham Way by a sunken entrance plaza with sloped surfaces, concrete stairs, and curbs. Metal handrails are located along the stairs and curbs. The plaza is paved with a rough aggregate concrete and features several cast-in-place concrete planters, one of which contains a metal-frame illuminated sign. Surface parking lots surround the building on the north, west, and south sides.

The lobby of the UA Stonestown Twin Theater features a floor covered variously with carpet and tile, a textured plaster ceiling, chandeliers with glass globe lights, and a concessions counter at the west end that is flanked by restrooms. The groin vaulting visible on the exterior continues around the perimeter of the lobby. The two

[36] San Francisco Planning Department, "Cultural Heritage," https://sfplanning.org/cultural-heritage, accessed August 30, 2022.
[37] Legacy Business Resolution no. 010-17-LBR for Boudin Bakery.
[38] The property description of 501 Buckingham Way is adapted from Page & Turnbull, pp. 101–104.
[39] A *groin vault* is produced by the intersection at right angles of two barrel vaults.

auditoriums at the west end of the building are characterized by unpainted, paneled wood doors with original wood handles and replacement bronze handles, tiered seating, and large screens on the west walls.

HISTORIC CONTEXT

The historic context of the site prior to the development of the Stonestown Shopping Center is discussed in Section E.3, Cultural Resources, and Section E.4, Tribal Cultural Resources, in Appendix B, Initial Study, of this draft EIR.

DEVELOPMENT OF THE STONESTOWN SHOPPING CENTER AND GALLERIA COMPLEX

The Stonestown Shopping Center was originally developed by the San Francisco-based Stonestown Development Company. In 1948, the company purchased a 65-acre tract located west of 19th Avenue in the Lakeshore neighborhood to create a large, mixed-use development that would include a shopping center, four 10-story mid-rise apartment buildings, and 10 three-story, low-density garden apartment buildings. The residential components were designed by San Francisco architect Angus McSweeney, and construction began in 1948.[40]

The Stonestown Shopping Center was designed by Los Angeles-based architecture firm Welton Becket and Associates, and construction began in 1950. The 40-acre shopping center, which was described as "the most extensive commercial center in California," was anchored by the 300,000-square-foot The Emporium department store and also featured a movie theater, medical building, restaurant, gas station, bank, and smaller retail stores. The design of the sprawling center reflected contemporary retail theories and trends in shopping and travel. When it opened in 1952, the Stonestown Shopping Center competed with and threatened the historic commercial centers along Mission Street in and around Union Square and in the downtown area.[41]

The stated goal of the shopping center was to provide shopping facilities and services to meet every need of the consumer, and it was designed to "service and supply" the estimated local population of 250,000. Services within the development included the five-story Stonestown Medical and Dental Center (extant and located at 553–599 Buckingham Way north of the project site), which opened in 1953 and was designed in the Midcentury Modern style.[42] During the 1980s, the main portion of the shopping center was remodeled as an enclosed mall structure and renamed the Stonestown Galleria.[43] While remnants of the original site and building designs remain, particularly near the intersection of 20th Avenue and Buckingham Way, only a few buildings retain high integrity (e.g., the UA Stonestown Twin Theater).[44]

UNITED CALIFORNIA THEATERS

United California Theaters was founded in the 1940s by Michael Naify of T & D Jr. Enterprises through the merger of three independent theater companies on the west coast: T & D, Golden State Theaters, and San Francisco Theaters. In the late 1940s, United California Theaters merged with United Artists Theater Circuit, and the Naify family became the majority shareholder. In 1988, the United Artists Theater chain was bought by Tele-wood Communications Inc., and in 2002, after filing for bankruptcy, the theater chain was consolidated as part of the Regal Entertainment Group.[45]

[40] Page & Turnbull, p. 26.
[41] Ibid., pp. 26–27, 30–31.
[42] Ibid., p. 31.
[43] Ibid., pp. 36–37.
[44] San Francisco Planning Department, *Historic Resource Evaluation Response for 501 Buckingham Way, Part I*, March 31, 2022.
[45] Ibid.

GEORGE K. RAAD, ARCHITECT

Jerusalem-born George K. Raad (1924–2016) emigrated to the United States in 1947 to earn his master's degree in architecture from the University of California, Berkeley. He settled in San Francisco and, after becoming a licensed architect in 1957, opened his architectural practice, George K. Raad and Associates, the same year. Raad appears to have worked predominately on residential and commercial projects in the San Francisco Bay Area, and he also designed movie theaters throughout California, Texas, and Illinois. A longtime resident of Telegraph Hill, Raad served as the president of the Telegraph Hill Dwellers in the 1960s and was an outspoken opponent of Golden Gate Freeway, which was never constructed.[46]

Of Raad's known completed theaters listed in the historic resource evaluation, Cinema 150 in Santa Clara (built in 1966, demolished); UA Cinema in Oak Brook, Illinois (built in 1968, demolished); and the UA Cine I & II in Dallas, Texas (built in 1972, demolished), were practically identical to the UA Stonestown Twin Theater. All were designed in the New Formalism style and featured colonnaded façades, glazed lobbies, and chandeliers with glass globe lights. Raad also designed a number of nearly identical New Formalism-style stores for Cost Plus (now World Market) across northern California.[47]

NEW FORMALISM STYLE OF ARCHITECTURE (1950s–1970s)

While the International Style dominated modern architecture in the early 1950s, Edward Durrell Stone's 1954 design of the American Embassy in New Delhi and Minoru Yamasaki's 1955 design for the McGregor Memorial Conference Center in Detroit introduced a more ceremonial modern style based on classical (i.e., Greek and Roman) architecture and utilizing materials and technologies of the International Style. These and subsequent New Formalism-style buildings celebrated monumental forms and featured patterned concrete block screens, free-standing slender columns, and interior courtyards.[48]

The New Formalism style is commonly characterized by a symmetrical façade with regularly spaced columns or arched or vaulted columnar supports. The style updated classically inspired forms and was both visibly and theoretically distinct from the Neoclassical style. The overall massiveness of the style is achieved through the use of a blocky structure set on an elevated podium and typically capped with a flat slab roof. Walls are commonly clad in smooth and unadorned stone, brick, or marble, and columns are generally slender. New Formalism was typically used for civic and commercial buildings and was occasionally employed in residential architecture.[49]

Character-defining features[50] of the New Formalism style include:

- Symmetrical façade
- Flat, projecting rooflines
- Smooth, unadorned wall surfaces

[46] Page & Turnbull, pp. 114–116.
[47] Ibid.
[48] Page & Turnbull, p. *107*.
[49] Ibid.
[50] Character-defining features are essential physical features that enable the property to convey its historic identity. These distinctive character-defining features are the physical traits that commonly recur in property types and/or architectural styles. To be eligible for national or state designation, a property must clearly contain enough of those characteristics to be considered a true representative of a particular type, period, or method of construction, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials.

- Modern building materials and construction techniques
- Columnar supports and full-height colonnades[51]

Compared to many other midcentury modern styles of architecture defined in the *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, New Formalism buildings in San Francisco are relatively rare. This style was most often applied to banks designed from 1963 into the 1970s, including the buildings at 275 Ellis Street (built in 1963, extant), 4947 Third Street (built in 1964, extant), and 2500 Mission Street (built in 1968, extant).[52] Larger-scale examples of institutional buildings in San Francisco designed in the New Formalism style include Kendrick Hall at the University of San Francisco (2100 Fulton Street, built in 1962, extant) and St. Mark's Urban Life Center (1031 Franklin Street, built in 1965, extant).[53] Architects associated with the New Formalism style in San Francisco include George K. Raad (who designed the UA Stonestown Twin Theater at 501 Buckingham Way); Wurster, Bernardi & Emmons; and Milton Pflueger.[54]

CONSTRUCTION AND OCCUPANCY HISTORY OF 501 BUCKINGHAM WAY

Prior to its construction in 1970, the site of the UA Stonestown Twin Theater was occupied by an automobile service station constructed in 1954 and later demolished to make way for the theater. The *San Francisco Examiner* announced plans to construct the new theater in 1965 in conjunction with the Cinema 150 Theater in Santa Clara (no longer extant). Initially, the Stonestown theater was to be designed by William David (a registered building designer, but not a licensed architect, who previously designed many Art Deco- and Streamline Moderne-style theaters across Northern California), while the theater in Santa Clara was to be designed by George K. Raad and Associates. The 1965 building permit application for the Stonestown theater was denied due to neighborhood opposition, and the project was postponed for nearly five years. During that time, United California Theaters hired George K. Raad to design the Stonestown theater based on his nearly identical design for the Santa Clara theater.[55]

The building functioned continuously as the UA Stonestown Twin Theater from 1970 to 2020, and it has been minimally altered. In 1973, the original single auditorium was bisected to create two smaller auditoriums. In 1998, amenities including a drinking fountain and public telephone were added, and renovations including new auditorium doors and improved restrooms were completed. That same year, the primary (east) façade was altered to include a new accessible entrance. Most recently, the roof was covered with built-up roofing in 2016.[56]

The theater operated until March 2020 when it was closed due to the City of San Francisco's Covid-19 shelter-in-place order and was not reopened.[57]

EVALUATION OF HISTORICAL SIGNIFICANCE

In May 2022, the planning department prepared an historic resource evaluation response, which outlined the significance of the project site with respect to the four criteria of the California Register. Of the six buildings and structures evaluated in the 2022 historic resource evaluation, only the former UA Stonestown Twin

[51] Ibid.
[52] San Francisco Planning Department, *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, January 2011, pp. 130 and 134.
[53] Ibid., pp. 67 and 134.
[54] Ibid., pp. 67 and 130.
[55] Page & Turnbull, p. 104.
[56] Ibid., p. 105.
[57] Ibid., p. 101.

Theater at 501 Buckingham Way is considered a historical resource under CEQA. The following provides a summary of the California Register eligibility evaluation presented in the historic resource evaluation response.

CRITERION 1 (EVENTS)

Movie theaters were typical features of midcentury shopping centers, and a movie theater was included in the 1952 master plan for the Stonestown Shopping Center but was never constructed as planned. The UA Stonestown Twin Theater was eventually constructed in 1970, nearly two decades after the center's initial development, and no important events are known to have occurred there. For these reasons, the building was not found to be significantly associated with an event important to local, regional, state, or national history and is not eligible for listing under Criterion 1 either as an individual resource or as a part of an eligible historic district.

CRITERION 2 (PEOPLE)

No individuals of historical significance are associated with the UA Stonestown Twin Theater. None of the building's owners and occupants were found to be important to local, California, or national history, and the building is not eligible for listing under Criterion 2 either as an individual resource or as a part of an eligible historic district.

CRITERION 3 (DESIGN/CONSTRUCTION)

The subject property was constructed in 1970 and is an excellent example of the New Formalism architectural style in San Francisco, comparable to other local properties that exemplify the style. Elements of the design of 501 Buckingham Way that embody the distinctive characteristics of the New Formalism style include the groin-vaulted colonnade and lobby, sunken entry plaza, flat roof, and smooth, unadorned walls. New Formalism is a relatively rare architectural style within San Francisco and was typically used for the design of bank buildings.

As outlined above, the theater was designed by local architect George K. Raad. Although Raad successfully adapted the style to a more modest use and size for the UA Stonestown Twin Theater, his overall body of work failed to garner recognition and distinction, and his completed projects are not listed in architectural archives or databases such as the Pacific Coast Architectural Database. As such, archival research does not indicate that Raad rose to the level of an architect of merit and the building's association with him does not justify inclusion in the California Register under Criterion 3, as described above under Section 3.A.2, Regulatory Framework.[58] Despite the architect not being identified as an architect of merit, 501 Buckingham Way is eligible for listing in the California Register as an excellent example of an architectural style.

In conclusion, 501 Buckingham Way is a superior example of the New Formalism style within San Francisco and is therefore individually eligible for listing in the California Register under Criterion 3.

CRITERION 4 (INFORMATION POTENTIAL)

To be eligible for listing in the California Register under Criterion 4, a property must have the potential to yield information important in prehistory or history. Criterion 4 is generally understood to apply primarily to archeological resources. Criterion 4 may apply to historic architectural resources under limited circumstances where study of the physical fabric of a building, structure, or landscape may yield important

[58] While the National Register uses the term "work of a master," the planning department uses the term "architect of merit."

scientific and historic information that is not otherwise available in the documentary record. The building at 501 Buckingham Way does not represent a local construction type that would yield information important to the prehistory or history San Francisco. Therefore, it is not eligible for listing under Criterion 4 either as an individual resource or as part of an eligible historic district.

Archeological resources, human remains, and tribal cultural resources are addressed in Appendix B, Initial Study, of this draft EIR.

PERIOD OF SIGNIFICANCE

The period of significance for 501 Buckingham Way is 1970, the year of the building's construction.

OVERVIEW OF INTEGRITY EVALUATION

The historic resource evaluation response concludes that the property retains a high degree of all seven aspects of integrity, as described in Section 3.A.2 above. The building was minimally altered since its construction in1970. Minor alterations included the replacement of an original door with an Americans with Disabilities Act-compliant door, painting of some exterior metal railings, and reroofing the building. Even with these minimal alterations, the building continues to convey its architectural significance as a superior example of the New Formalist style of architecture within San Francisco.

CHARACTER-DEFINING FEATURES

The historic resource evaluation response identifies the following character-defining features for the property, and shown in **Figure 3.A-2** through **Figure 3.A-4**:

- Symmetrical façade of the one-story front (eastern) portion of the building
- Groin-vaulted colonnade at the primary (east) façade
- Groin vaults with glazing and blind arches in the lobby
- Flat roof
- Sunken entry plaza with a large aggregate concrete surface in square sections
- Smooth, unadorned wall surfaces
- Overall massing of the auditoriums and hyphen at the rear (west) of the building
- Chandeliers with glass globe lights in the building's interior

SOURCE: Page & Turnbull, 2022

Stonestown Development Project

FIGURE 3.A-2
CHARACTER-DEFINING FEATURES EXTERIOR VIEW

SOURCE: Page & Turnbull, 2022

Stonestown Development Project

FIGURE 3.A-3
CHARACTER-DEFINING FEATURES EXTERIOR VIEW

SOURCE: Page & Turnbull, 2022

Stonestown Development Project

FIGURE 3.A-4
CHARACTER-DEFINING FEATURES INTERIOR VIEW

3.A.4 Impacts and Mitigation Measures

This section analyzes impacts from the proposed project or variant on historic architectural resources. It describes the methods used to determine the impacts of the proposed project and lists the criteria used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany the discussion of each identified significant impact.

SIGNIFICANCE CRITERIA

The proposed project or variant would have a significant impact on historic architectural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code.

A "substantial adverse change" is defined by CEQA Guidelines section 15064.5 as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired." The significance of a historic architectural resource is "materially impaired," according to CEQA Guidelines section 15064.5(b)(2), when a project "demolishes or materially alters in an adverse manner those physical characteristics" of the resource that:

(A) Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(B) Account for its inclusion in a local register of historic resources pursuant to Public Resources Code section 5020.1(k) or its identification in a historic resources survey meeting the requirements of Public Resources Code section 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

As noted above, a project that would comply with the Secretary's Standards is considered to have mitigated its impact to a less-than-significant level (CEQA Guidelines section 15064.5(b)(3)). However, CEQA Guidelines section 15126.4(b)(2) states that, "[i]n some circumstances, documentation of a historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur." In such cases, the demolition or substantial alteration of a historic architectural resource would remain a significant and unavoidable impact on the environment even after the historical documentation has been completed.

APPROACH TO ANALYSIS

Potential impacts on historic architectural resources are assessed by identifying any activities (either during construction or operation) that could affect resources that have been identified as historical resources for the purposes of CEQA. Once a resource is identified, it then must be determined whether the proposed project

would "cause a substantial adverse change in the significance" of the resource, as described above. As such, per CEQA Guidelines section 15064.5(b)(2), the following analysis considers the potential for the proposed project to materially impair the significance of a historic architectural resource by causing direct or indirect changes to the physical characteristics of the resource that convey its historical or architectural significance.

IMPACT EVALUATION

Impact CR-1: The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code. ***(Significant and Unavoidable with Mitigation)***

The theater at 501 Buckingham Way was determined individually eligible for listing on the California Register under Criterion 3 (design/construction) as "a superior example of the New Formalism style within San Francisco."[59] The period of significance is 1970, the year the building was constructed.

The proposed project or variant would demolish the building at 501 Buckingham Way. Demolition of the building would materially impair the historic architectural resource and it would no longer retain the ability to convey its significance as a New Formalist-style theater, resulting in a significant and unavoidable impact on a historical resource. To reduce this impact, the project sponsor would be required to implement **Mitigation Measures M-CR-1a through M-CR-1c**.

> **Mitigation Measure M-CR-1a: Documentation of Historic Resources.** Prior to issuance of demolition permits for the historic resource, the project sponsor shall undertake Historic American Buildings Survey/Historic American Landscapes Survey/Historic American Engineering Record-like (HABS/HALS/HAER-like) documentation of the historic resource's features. The documentation shall be undertaken by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History, History, or Architecture (as appropriate) to prepare written and photographic documentation of the UA Stonestown Twin Theater. The specific scope of the documentation shall be reviewed and approved by the planning department, but shall include the following elements:
>
> - *Measured Drawings* – A set of measured drawings shall be prepared that depict the existing size, scale, and dimension of the historic resource. Planning department staff will accept the original architectural drawings or an as-built set of architectural drawings (e.g., plans, sections, elevations). Planning department staff will assist the consultant in determining the appropriate level of measured drawings.
> - *HABS/HALS/HAER-like Photographs* – Either HABS/HALS/HAER standard large-format or digital photography shall be used. The scope of the digital photographs shall be reviewed by planning department staff for concurrence, and all digital photography shall be conducted according to the latest National Park Service (NPS) standards. The photography shall be undertaken by a qualified professional with demonstrated experience in HABS/HALS/HAER photography. Photograph views for the data set shall include contextual views; views of all side of the resource; oblique views of the resource; and detail views of character-defining features including certain interior spaces. All views shall be referenced on a photographic key. This photographic

[59] San Francisco Planning Department, *Historic Resource Evaluation Response for 501 Buckingham Way, Part I*, May 31, 2022.

key shall be on a map of the property and shall show the photograph number with an arrow to indicate the direction of the view. Historical photographs shall also be collected, reproduced, and included in the data set.

- *Written Historical and Descriptive Data* – A written historical narrative and report shall be prepared in accordance with the HABS/HALS/HAER Historical Report Guidelines. The report shall follow an outline format that begins with a statement of significance supported by the development of the architectural/engineering and historical context in which the historic resource was constructed. The report shall also include a physical description and bibliographic information.
- *Video Recordation* – Video recordation shall be undertaken before demolition or site permits are issued for the historic resource. The project sponsor shall undertake video documentation of the affected historic resource and its setting. The documentation shall be conducted by a professional videographer, one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations Part 61). The documentation shall include detailed information—using visuals in combination with narration—about the materials, construction methods, current condition, historic use, and historic context of the historic resource.
- *Softcover Book* – A print-on-demand softcover book shall be produced that includes the content from previous historical reports, historical photographs, documentation photography, measured drawings, and field notes. The Print-on-Demand book shall be made available to the public for distribution.

The project sponsor shall transmit the above documentation to the History Room of the San Francisco Public Library, San Francisco Architectural Heritage, California Historical Society, the planning department, the Northwest Information Center, nearby neighborhood or community group repositories that request copies, and no more than two additional repositories as directed by the planning department. The documentation scope will determine the requested documentation type for each facility, and the project sponsor will conduct outreach to identify other interested groups. Drafts of all documentation will be reviewed and approved by the planning department's staff before any demolition permit is granted for the affected historic resource.

Mitigation Measure M-CR-1b: Salvage Plan. The project sponsor shall make a good faith effort to salvage character-defining features or materials of historical interest to be utilized as part of the interpretative program or to be donated to community or art groups. A salvage plan, which may include materials of historical interest if community or arts groups expressed an interest in such items and commit to relocating them at their own expense, will be reviewed and approved by the planning department's staff before any removal of character-defining features. Planning department preservation staff will coordinate with the project sponsor on implementation of the salvage plan and the project sponsor will provide documentation of the completion of the salvage plan prior to issuance of occupancy permits.

Mitigation Measure M-CR-1c: Public Interpretive Plan. The project sponsor shall facilitate the development of an interpretive program focused on the history of the project site, including an

overview of the site history and Native American land acknowledgement, and its identified historic resource. The interpretive program should be developed and implemented by a qualified preservation professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner.

The primary goal of the interpretive program is to educate the public about the historic resource and lost character defining features within broader historical, social, and physical landscape contexts. This interpretive plan shall be subject to review and approval by planning department staff. The proposal shall include the proposed format and the publicly accessible location of the interpretive content, as well as high-quality graphics and written narratives. The proposal prepared by the qualified consultant describing the general parameters of the interpretive program shall be approved by planning department staff prior to issuance of demolition permits for the historic resource. The detailed content, media, and other characteristics of such an interpretive program including installation and maintenance schedules for all interpretative components shall be approved by planning department staff prior to issuance of a Final Certificate of Occupancy for the building to be constructed at the location of the historic resource and/or immediately adjacent public open space.

The interpretative program shall include but not be limited to the installation of permanent on-site interpretive displays in publicly accessible locations, including the exterior of a building. Historical and current photographs, including some of the photographs required by the Documentation of Historic Resources Mitigation Measure, may be used to illustrate the site's history. Features salvaged from the theater as part of the salvage plan should be considered in the design of the interpretative program.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measures M-CR-1a through M-CR-1c would document the historic architectural resource, require the preparation of a salvage plan, and create an interpretive program. The identified mitigation would partially compensate for impacts associated with the proposed project through comprehensive documentation and memorialization of the historic architectural resource. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level, and this mitigation measure would not reduce impacts to that degree. As such, the impact on historic architectural resources would remain ***significant and unavoidable with mitigation***.

Impact CR-2: The proposed project or variant would not cause a substantial adverse change in the significance of an adjacent historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code. ***(Less than Significant)***

The San Francisco Public Library Merced Branch located at 155 Winston Drive was determined to be eligible for listing on the California Register under Criterion 3 (design/construction).[60] However, due to the width of 19th Avenue, which is approximately six lanes wide in addition to two aboveground Muni tracks that run down the middle of the street, properties located east of the project site are sufficiently distanced such that the potential for impacts to identified historic architectural resources along the east side of 19th Avenue

[60] San Francisco Planning Department, Historic Resource Evaluation Response for 155 Winston Drive, Part I, June 4, 2009.

would be less than significant.[61] Therefore, even though the Merced Branch of the San Francisco Public Library system was identified as a historic resource, the new construction associated with the proposed project or variant across 19th Avenue would not significantly impact the setting of the library.[62]

As described above, one other California Register-eligible historic resource, Fire Station No. 19 at 390 Buckingham Way, is located adjacent to the project site. The fire station is a contributor to the California Register-eligible San Francisco 1952 Firehouse Bond Act Thematic District. As it stands today, the fire station is surrounded by the SFSU housing and a surface parking lot that is part of the existing Stonestown shopping center. Although the surface parking lot would be redeveloped as part of the proposed project or variant, the functional nature of the fire station is such that its historic significance would not be impacted by the construction of new buildings nor would this new construction result in a significant change in the already urban, mixed-use setting of the fire station. Therefore, the potential for impacts to historic architectural resources west of the project site would be less than significant.[63]

Regarding potential historic architectural resources adjacent to the project site, the proposed project or variant would not have the potential to significantly impact any of the adjacent potential historic architectural resources surrounding the project site.[64] Potential historic architectural resources immediately east of the project site across the street along 19th Avenue include single-family homes and a school (the Chinese American International School located at 3250 19th Avenue), which are sufficiently distanced by the buffer provided by 19th Avenue such that the proposed project or variant would not have a significant impact on the setting of these adjacent potential historic architectural resources. South and southwest of the project site are the SFSU University Park North residential dorms along Winston Drive and Buckingham Way. These residential dorms, the design of which reflect an internally cohesive circulation system and layout, are located across the street from the project site. Therefore, the proposed project or variant would not have a significant impact on the setting of these adjacent potential historic architectural resources due to the distance between the potential historic architectural resources and project site.

Several buildings with a range of uses are located immediately north between the project site and Eucalyptus Drive. These include: two churches (Lakeside Presbyterian Church at 201 Eucalyptus Drive and St. Stephen Catholic Church at 601 Eucalyptus Drive), a school (St. Stephen Catholic School at 401 Eucalyptus Drive), two commercial properties (Stonestown YMCA at 333 Eucalyptus Drive and Stonestown Medical Building at 595 Buckingham Way), and four single-family homes (477–501 Eucalyptus Drive). Some of the buildings are oriented away from the project site or would be separated from the project site by Buckingham Way. Other buildings would only be immediately adjacent to the project site where a minor plaza is proposed to be located, as shown in Figure 2-6, p. 2-11. Overall, the size, scale, and location of the buildings proposed to be located along the northern boundary of the project site were determined by planning department preservation staff to be compatible with the scale and location of the surrounding properties and therefore would not have the potential to significantly impact any of these adjacent potential historic architectural resources.

Additionally, because the UA theater at 501 Buckingham Way is an individual historic architectural resource and is not part of a historic district, it does not share a historic context or use with Fire Station No. 19, the

[61] Greving, Justin, Senior Preservation Planner, San Francisco Planning Department, Memorandum to File correspondence with Florentina Craciun, Senior Environmental Planner, San Francisco Planning Department, October 24, 2022, p. 2.
[62] Ibid.
[63] Ibid., p. 2.
[64] Ibid.

Merced Branch Library, or any of the other potential or identified historic architectural resources. Based on the analysis above, there are no other known or potential historic architectural resources in the vicinity of the project site with significant associations to the theater at 501 Buckingham Way such that its demolition would significantly impact the setting or association of adjacent potential historic architectural resources.

Therefore, impacts to potential and identified historic architectural resources located adjacent to the project would be less than significant.

POTENTIAL CONSTRUCTION-RELATED VIBRATION IMPACTS TO ADJACENT HISTORIC RESOURCES

Construction activities at the project site would generate vibration that could potentially impact adjacent and nearby buildings. As described under Impact NO-3, p. 3.C-36, structures located 25 to 90 feet from construction activities at the project site would be of potential concern with respect to building damage from construction-related vibration. One California Register-eligible historic resource, Fire Station No. 19 at 390 Buckingham Way, is located across the street, approximately 80 feet from the project site.[65] Construction-related vibration would not exceed the Caltrans criterion of 0.25 peak particle velocity (PPV) for historic structures and would not have the potential to result in a significant impact on a historic resource. Additionally, several potential historic architectural resources are located within 90feet of where construction activities would occur on the project site. As such, the Caltrans criterion of 0.25 PPV for older structures is applied to determine the potential for construction-related vibration impacts to occur on adjacent potential historic architectural resources. Construction-related vibration for buildings within 90 feet or construction activities on the project site would range between 0.013 and 0.064 PPV, which is well below the 0.25 PPV threshold for historic structures. Therefore, demolition of the theater and construction of the proposed project or variant would not result in significant construction-related impacts to adjacent identified or potential historic architectural resources. As such, impacts to adjacent historic resources would be ***less than significant***, and no mitigation is required.

CUMULATIVE IMPACTS

Impact C-CR-1: The proposed project or variant, in combination with cumulative projects, would not result in demolition and/or alteration of historical resources, as defined in CEQA Guidelines section 15064.5. ***(Less than Significant)***

Table 3-1, p. 3-7, and Figure 3-1, p. 3-9, identify four cumulative development projects located within a 0.5-mile radius of the project site. Identified historic resources, including Fire Station No. 19 at 390 Buckingham Way and the San Francisco Public Library Merced Branch at 155 Winston Drive are considered in this analysis. Because the theater at 501 Buckingham Way is an individual historic resource and is not part of a historic district, it does not share a historic context or use with Fire Station No. 19, the Merced Branch Library, or the cumulative projects located at 460 West Portal Avenue, Parkmerced, or SFSU (includes two cumulative projects). The impacts of the cumulative projects would not combine with the impacts of the proposed project or variant related to the historic resources such that it would result in a significant cumulative impact because the adverse impacts to the historic resources on the project site are limited to the individually eligible resource at 501 Buckingham Way.

[65] The San Francisco Planning Department uses 100 feet as the standard threshold for indirect impacts to historic resources based on construction-related activities.

Additionally, the four identified cumulative projects are not in the immediate vicinity of the Merced Branch Library and, therefore, they would not combine with the proposed project to result in cumulative impact. Of the four identified cumulative development projects, the SFSU Future State 2035 long-term plan does include future projects that are adjacent to Fire Station No. 19. Based on review of the Future State 2035 plan, Fire Station No. 19 would continue to be located adjacent to primary residential campus housing in a mixed-use urban neighborhood, and based on current information, significant impacts to the adjacent fire station appear to be unlikely. Therefore, project impacts would not combine with the impacts of other projects in the vicinity of the project site to result in a significant cumulative impact on historic resources. In addition, the proposed project or variant would not result in a considerable contribution to a significant cumulative impact; therefore, no further analysis is required. As such, this impact would be ***less than significant***, and no mitigation is required.

INTENTIONALLY BLANK

3.B Transportation and Circulation

3.B.1 Introduction

This section presents the existing transportation and circulation conditions and analyzes the potential project-level and cumulative impacts on transportation and circulation during construction and operation of the proposed project or variant. Transportation and circulation topics consist of walking, bicycling, driving hazards, transit, emergency access, vehicle miles traveled (VMT), and loading. Supporting detailed technical information is included in Appendix D.1, Travel Demand Memorandum, and Appendix D.2, Transit Analysis Memorandum.

3.B.2 Environmental Setting

PROJECT SITE

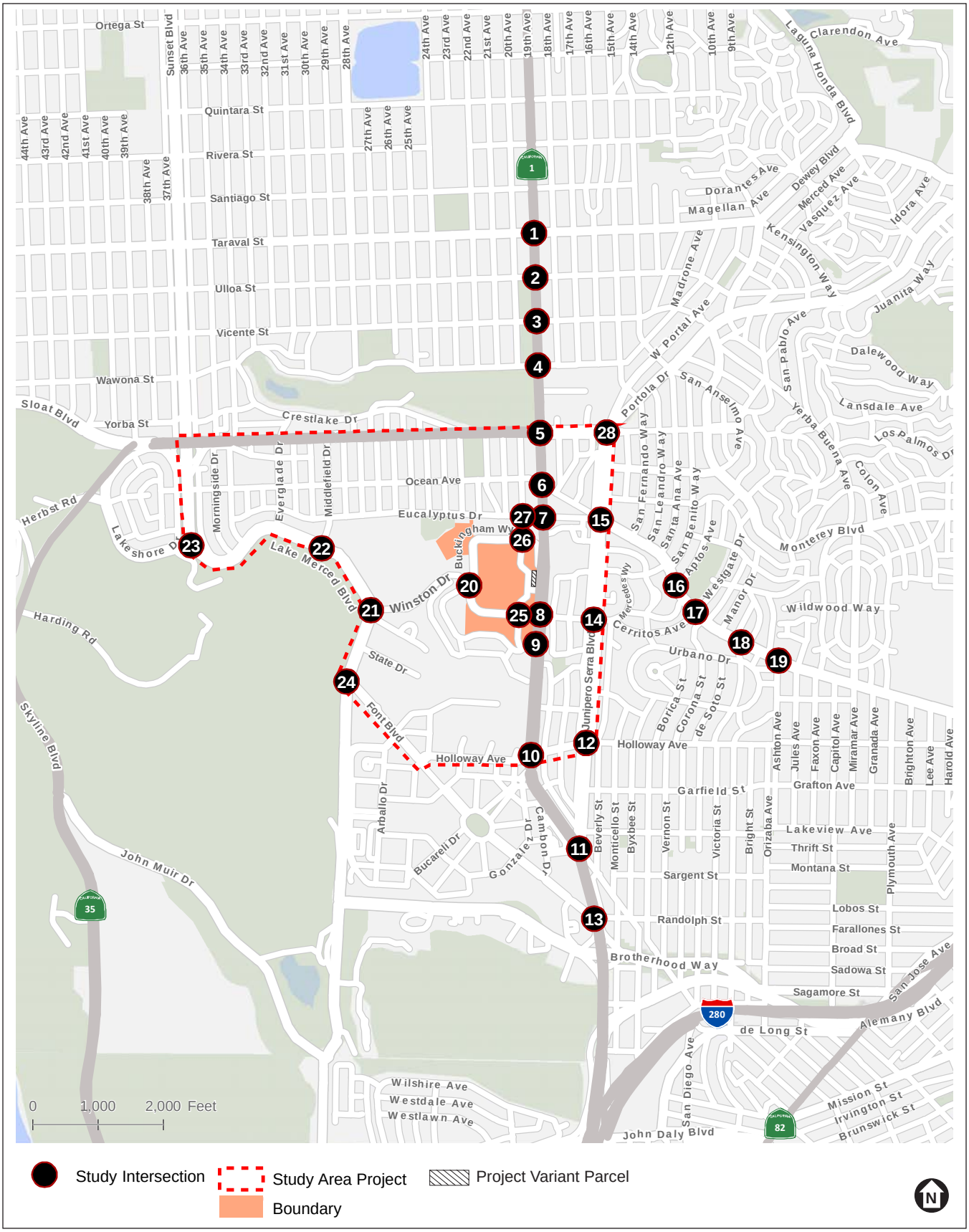
The transportation study area consists of those locations where the proposed project or variant could potentially significantly affect transportation and circulation, generally bounded by Sunset Boulevard to the west, Sloat Boulevard to the North, Junipero Serra Boulevard to the east, and Holloway Avenue to the south. The study area consists of travel corridors and facilities such as transit routes and stations, bicycle routes and amenities, pedestrian sidewalks, and crossings. The transportation study area was determined based on the planning department's Transportation Impact Analysis Guidelines for Environmental Review[66] (SF transportation guidelines) and in consultation with planning department staff.

Seventeen intersections within the transportation study area were identified as study intersections where the project or variant could potentially significantly affect localized transportation and circulation based on anticipated estimated project vehicle trip patterns. Operational analysis was conducted at 11 additional intersections located along transit routes and outside transportation study area to estimate the effect of project- or variant-added traffic on transit travel times. The transportation study area excluded additional intersections and freeway off-ramps further from the project site given the dispersion of project vehicle trips further from the project site, less precision in assigning project vehicle trips to those areas, and the unlikelihood of the project or variant to result in significant transportation and circulation impacts in those areas. The transportation study area and 28 study intersections are shown in **Figure 3.B-1**. The following section describes the existing transportation and circulation conditions.

REGIONAL AND LOCAL ROADWAYS

The closest regional roadways to the project site are described below. In addition, the following describes the existing local roadways in the study area, including their geographic extent: the San Francisco General

[66] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update: Summary of Changes Memorandum*, February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines, accessed September 20, 2022.



SOURCE: Kittelson & Associates, 2022

Stonestown Development Project

FIGURE 3.B-1
PROJECT STUDY AREA AND STUDY INTERSECTIONS

Plan,[67] Better Streets Plan, Key Walking Street, and Vision Zero High Injury Network (network) designation, if applicable; the number and type of travel lanes and directions, and the weekday p.m. peak hour vehicular counts at study intersections.[68] For those existing streets adjacent to the project site, the following also describes observed traffic conditions and historical collision data provided by the California Department of Transportation (Caltrans).

REGIONAL ROADWAYS

Regional access to and from the project site is provided by Interstate 280 (I-280). I-280 extends from the southern portion of downtown San Francisco to U.S. 101 in San Jose. I-280 carries approximately 141,000 vehicles per day south of Geneva Avenue and 151,000 vehicles per day north of Ocean Avenue.[69] The project site is accessible from the East Bay via the Ocean Avenue exit from I-280 via U.S. 101. U.S. 101 connects to the East Bay via I-80 and the San Francisco-Oakland Bay Bridge. 19th Avenue (aka California State Highway 1) provides access from within the western part of the city.

LOCAL ROADWAYS

The project site is served by multiple local streets. **Table 3.B-1** lists local roadways in the study area by street name, direction (east–west or north–south), number of travel lanes, the City's Vision Zero Network designation, the San Francisco Better Streets Plan (better streets plan) classification, transit routes that use the street (if any), and bicycle facilities provided on the street (if any).

TRAFFIC CONDITIONS

Intersection vehicular turning movement counts were collected at 28 intersections on March 20, 2022, during the weekday p.m. peak period. Vehicular counts for the study intersections are summarized in **Table 3.B-2**, p. 3.B-5.

As noted in Table 3.B-1, Sunset Boulevard, Lake Merced Boulevard, and 19th Avenue are identified in the City's designated Vision Zero network. Sunset Boulevard provides access to and from destinations to the northwest of the project site. Lake Merced Boulevard connects to Winston Drive to the west of the project site at a signalized intersection (study intersection #21), which serves a large volume of traffic (approximately 4,100 vehicles entering in the weekday p.m. peak hour). The signalized intersection provides double left-turn lanes for southbound movements in the direction of the project site and a channelized westbound right-turn lane for movements from Winston Drive onto Lake Merced Boulevard. Winston Drive narrows to two total travel lanes east of the intersection with Lake Merced Boulevard and has a 25-mile-per-hour (mph) posted speed.

---

[67] City and County of San Francisco, *San Francisco General Plan*, Transportation Element, 2007, http://generalplan.sfplanning.org/I4_Transportation.htm#TRA_REG_5_4, accessed September 30, 2022. City road designations within the general plan include the following (listed in the order of potential vehicle capacity): freeways, major arterials, transit conflict streets, secondary arterials, recreational streets, collector streets, and local streets. Each of these roadways has a different potential capacity for mixed-traffic travel and changes that might alter traffic patterns on the given roadway. The general plan also identifies certain Transit Preferential Streets from among the city's various roadways, each of which is identified as a Primary Transit Street-Transit Oriented, Primary Transit Street-Transit Important, or Secondary Transit Street. The Pedestrian Network classifies streets throughout the city. It identifies streets that have been developed primarily for use by people walking and includes the Citywide Pedestrian Network Streets and Neighborhood Pedestrian Streets.

[68] Based on the 2017 High Injury Network. Obtained from the San Francisco Transportation Information Map, http://www.sfplanninggis.org/TIM/, accessed September 1, 2022.

[69] Caltrans, *Year 2020 Traffic Volumes on the State Highway System*, http://www.dot.ca.gov/trafficops/census/, accessed August 16, 2022.

Table 3.B-1 Roadway Facilities in the Study Area

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
19th Avenue	N-S	3[d]	Vision Zero Network	Residential Throughway	28, 29, M	N/A
20th Avenue	N-S	1	N/A	N/A	57	Class III
Buckingham Way (North and South)	E-W	1	N/A	Neighborhood Residential	N/A	Class III
Eucalyptus Drive	E-W	1	N/A	Neighborhood Residential	57	—
Font Boulevard	E-W	1	N/A	Boulevard	57	Class III
Holloway Avenue	E-W	1	N/A	Neighborhood Residential	29	Class II
Junipero Serra Boulevard	N-S	3	N/A	Residential Throughway	KT	N/A
Lake Merced Boulevard	N-S	3	Vision Zero Network	Park Edge	57, 58, 18, 29, 122	Class I
Mercedes Way	E-W	1	N/A	Neighborhood Residential	N/A	N/A
Middlefield Drive	N-S	1	N/A	N/A	N/A	N/A
Ocean Avenue	E-W	2	N/A	Residential Throughway/ Commercial Throughway	KT	Class III
Portola Drive	N-S	1	N/A	Residential Throughway	KT, M, 57	Class IV
Sloat Boulevard	E-W	3	N/A	Park Edge/Residential Throughway	18, 58	Class III/ class IV
Sunset Boulevard	N-S	2	Vision Zero Network	Parkway	29	Class I
Wawona Street	E-W	1	N/A	Park Edge/Paseo/Neighborhood Residential	N/A	N/A
West Portal Avenue	N-S	3	N/A	Residential Throughway	KT, M, 57	N/A
Winston Drive	E-W	2	N/A	Neighborhood Residential/ Neighborhood Commercial	58, 122	Class III

SOURCES: *San Francisco General Plan*, 2017; San Francisco Vision Zero High Injury Network, 2017; *San Francisco Better Streets Plan*, 2010

ABBREVIATIONS:

E-W = east–west; N-S = north–south; N/A = value not applicable

NOTES:

The descriptions associated with each street (Vision Zero network, Better Streets Plan Classification, Transit Routes, etc.) are those that apply to some portion of the street near the project site and may not apply to the entire length of the street.

[a] Based on the 2017 Vision Zero Network. Obtained from the San Francisco Transportation Information Map, http://www.sfplanninggis.org/TIM/, accessed September 1, 2022.
[b] The transit routes are operated by Muni, except for the SamTrans Route 122 route.
[c] Bikeway class definitions are provided in the Bicycling Conditions discussion, beginning on p. 3.B-9.
[d] Three travel lanes in each travel direction, with a center-running Muni light-rail line for a portion.

Table 3.B-2 Vehicular Counts at Study Intersections, Weekday P.M. Peak Hour

Study Intersection Number	Intersection	Total Entering Vehicles[a]
5	19th Avenue/Sloat Boulevard	6,047
6	19th Avenue/Ocean Avenue	4,273
7	19th Avenue/Eucalyptus Drive	4,072
8	19th Avenue/Winston Drive	4,698
9	19th Avenue/Buckingham Way South	4,141
10	19th Avenue/Holloway Avenue	4,244
12	Junipero Serra Boulevard/Holloway Avenue	2,900
14	Junipero Serra Boulevard/Mercedes Way/Winston Drive	2,928
15	Junipero Serra Boulevard/Ocean Avenue/Eucalyptus Drive	4,043
20	Buckingham Way South/Winston Drive	1,083
21	Lake Merced Boulevard/Winston Drive	4,129
22	Lake Merced Boulevard/Middlefield Drive	3,612
23	Lake Merced Boulevard/Sunset Boulevard	3,400
25	20th Avenue/Winston Drive	1,651
26	20th Avenue/Buckingham Way North	1,108
27	20th Avenue/Eucalyptus Drive	1,189
28	Portola Drive/West Portal Avenue/Sloat Boulevard	3,912

SOURCE: Quality Counts, 2022 (see Appendix D.2, Transit Delay Analysis Memorandum)

NOTE:

[a] "Total entering vehicles" refers to the sum of all motor vehicles entering the intersection from all directions. It allows for a comparison of the relative magnitude of traffic volume served at a location.

19th Avenue within the project vicinity is a part of the state highway system and serves a high volume of traffic (up to 57,000 two-way vehicles per day).[70] The street typically includes three through travel lanes in each travel direction along the corridor and left- and/or right-turn lanes provided at some intersections. The corridor has a speed limit of 35 mph. At the 19th Avenue/Winston Drive intersection that provides project access, the southbound and eastbound approaches include channelized right-turn lanes, which provide additional vehicle capacity and are typically designed to allow right-turning vehicles to travel at higher-speeds compared to a typical perpendicular right-turning movement. Channelized right-turn lanes are a common treatment at signalized intersections that are intended to allow right-turning vehicle movements with a high volume to bypass the main intersection. They may be signal-controlled, yield-controlled, or free-flowing with an associated merge (receiving) lane. The two channelized lanes at this intersection are free-flowing with associated receiving lanes. Where they are free flowing and allow higher-speed turns, they

[70] Daily volumes obtained from Caltrans. Caltrans, *Traffic Census Program,* https://dot.ca.gov/programs/traffic-operations/census, accessed September 1, 2022.

increase vehicle speeds and conflicts for crossing pedestrians compared to a typical perpendicular right-turning movement at a signalized intersection. The higher vehicle speeds require longer distances for drivers to see and react to a potential conflict and because higher speeds typically increase the severity of a potential collision when one does occur.

Because 19th Avenue is a state highway, its collision rates along roadway segments and at intersections near the project site may be compared to rates at other similar state highway system locations. **Table 3.B-3** shows the collision rates for the roadway segment adjacent to the project site and for relevant intersections. The roadway and intersections presented here have lower average rates than similar sites on the state highway network based on a three year-period from July 2018 to June 2021. The collision rate for 19th Avenue (State Route 1) between the 19th Avenue/Buckingham Way South and 19th Avenue/Eucalyptus Drive intersections is 0.24 per million vehicle miles, which is lower than the average collision rate of 0.87 per million vehicle miles for facilities with similar characteristics (e.g., roadway classification, number of travel lanes, speed limits, adjacent transit/bicycle/pedestrian facilities, etc.) throughout the State.

Table 3.B-3 19th Avenue Collisions Rates (7/1/2018 to 6/30/2021)

Location	Number of Collisions				Actual Rates[a]			Average Rates of Similar Facilities in California		
	Fatal	Injury	Property Damage Only (PDO)	Total	Fatal	Fatal + Injury	Total[b]	Fatal	Fatal + Injury	Total
19th Avenue (State Route 1) postmile 1.26 to 1.66	0	4	3	***7***	0.0	0.14	***0.24***	0.009	0.39	***0.87***
Buckingham Way South Intersection postmile 1.26	0	0	0	***0***	0.00	0.00	***0.00***	0.002	0.06	***0.13***
Winston Drive Intersection postmile 1.35	0	2	0	***2***	0.00	0.02	***0.02***	0.002	0.16	***0.33***
Eucalyptus Drive Intersection postmile 1.66	0	2	2	***4***	0.00	0.02	***0.05***	0.002	0.16	***0.33***

SOURCE: Caltrans, 2022

NOTES:

[a] Rates provided are collisions per million vehicle miles traveled for the roadway segment and per million total entering vehicles for the intersections.

[B] All reported collisions, including Property Damage Only (PDO) collisions.

Within the project site along 20th Avenue and Buckingham Way (north and south), vehicle speeds are generally low, including a speed limit of 25 mph along Buckingham Way (north and south). Vehicle speeds along 20th Avenue within the project site are generally slow as a result of a raised pedestrian crosswalk just north of Winston Drive, two marked crossings with frequent pedestrian activity south of Buckingham Way North, speed bumps along the roadway, curvilinear geometry, all-way stop control at Buckingham Way, and vehicles frequently entering or exiting from parking aisles. North of Buckingham Way North, 20th Avenue becomes a four-lane roadway (two lanes in each direction). At the 20th Avenue/Eucalyptus Drive intersection, which is stop-controlled on all approaches, the northbound approach includes a channelized right-turn lane.

WALKING CONDITIONS

A qualitative evaluation of existing pedestrian conditions was conducted during field visits to the transportation study area in June 2022.[71] The following section describes conditions for people walking in the study area. In addition, the following section identifies any potentially or observed hazardous conditions at locations where people walk as well as the number of people walking at study intersections.[72]

Observations indicated that facilities for people walking were generally complete in the study area, with sidewalks provided continuously on both sides of study area roadways and crosswalks provided at most study intersections. However, access for people walking to and from the project site is limited, particularly in the north, south, and west sides of the study area, due to a discontinuous street grid and lack of a direct pedestrian connections to the project site.

General impediments to walking observed within the study area include the following:

- No sidewalks along the north side of Lake Merced Boulevard from Middlefield Drive to Sunset Boulevard; parallel Gellert Drive provides sidewalks
- No sidewalks along east side of Sunset Boulevard from Lake Merced Boulevard to Sloat Boulevard (there is a parallel walking path on the west side of the road)
- Channelized right turn with two turn lanes from Sloat Boulevard southbound onto Junipero Serra Boulevard
- Triple left-turn lane from Sloat Boulevard northbound onto Portola Drive and W. Portal Avenue (one lane continues to West Portal and two continue to Portola)
- Double left-turn lane from Junipero Serra Boulevard westbound onto Sloat Boulevard
- No marked crosswalk at the east leg of the signalized 20th Avenue/Winston Drive intersection
- No marked crosswalk at the south leg of the signalized 19th Avenue/Winston Drive intersection
- No curb ramps along Buckingham Way North in the northwest corner (parking lot)
- Sidewalk along Winston Avenue ends west of Buckingham Way South
- Elevation changes east to west on the site.[73]
- Multiple-turn lanes are considered as impediments to walking because they create larger pedestrian crossing distances and may allow higher vehicle speeds through the turns. The multiple turn lanes contribute to an overall larger intersection, which creates longer crossing distances with more exposure and higher speed turn geometry.

Continuous sidewalks are generally provided along Buckingham Way (north and south) and Winston Drive throughout the project site but are missing along the north side of Winston Drive west of 20th Avenue where the roadway passes under the mall and a pedestrian walkway is only provided along the south side of the roadway; a segment of sidewalk is also missing from the north side of Buckingham Way North northwest of

[71] A supplemental field visit was conducted on June 23, 2022, to observe pedestrian activity, subsequent to collecting counts of pedestrians, bicyclists, and vehicles in March 2022.
[72] People walking includes people with disabilities that may or may not require personal assistive mobility devices.
[73] The elevation grade (slope) of the site is about 3.5 percent, which is lower than the 5 percent maximum sidewalk grade recommended by the U.S. Federal Highway Administration, *Accessible Sidewalks and Street Crossings, an Informational Guide*, January 1, 2013, https://trid.trb.org/view/702607.

20th Avenue. Continuous sidewalks are not provided along 20th Avenue within the project site; instead, intermittent sidewalks are provided to connect people coming from the parking lots on the east side of the roadway to designated crossing locations and to the existing shopping center frontage and entrance.

Walking counts are summarized in **Table 3.B-4**. As shown in Table 3.B-4, counts of people walking were highest at the 20th Avenue/Winston Drive intersection (1,351 people walking during the p.m. peak hour), with the majority of people crossing 20th Avenue along the south intersection leg. 19th Avenue/Winston Drive, Junipero Serra Boulevard/Ocean Avenue/Eucalyptus Drive, and 20th Avenue/Eucalyptus Drive also had higher counts than the rest of the study intersections. Trends are similar across weekday and weekend counts.

Table 3.B-4 Walking Counts at Study Intersections – Weekday P.M. Peak Hour

Number	Intersection	Intersection Leg (Number of Crossings)				
		North	South	East	West	Total
5	19th Avenue/Sloat Boulevard	22	8	7	18	***55***
6	19th Avenue/Ocean Avenue	5	14	7	7	***33***
7	19th Avenue/Eucalyptus Drive	6	61	7	10	***84***
8	19th Avenue/Winston Drive	245	1	25	67	***338***
9	19th Avenue/Buckingham Way South	0	0	1	93	***94***
10	19th Avenue/Holloway Avenue	92	20	7	49	***168***
12	Junipero Serra Boulevard/Holloway Avenue	43	31	8	12	***94***
14	Junipero Serra Boulevard/Mercedes Way/Winston Drive	27	14	11	14	***66***
15	Junipero Serra Boulevard/Ocean Avenue/Eucalyptus Drive	136	45	75	69	***325***
20	Buckingham Way South/Winston Drive	6	34	7	18	***65***
21	Lake Merced Boulevard/Winston Drive	10	0	37	59	***106***
22	Lake Merced Boulevard/Middlefield Drive	12	86	112	0	***210***
23	Lake Merced Boulevard/Sunset Boulevard	0	4	6	14	***24***
25	20th Avenue/Winston Drive	356	297	1	697	***1,351***
26	20th Avenue/Buckingham Way North	31	57	57	132	***277***
27	20th Avenue/Eucalyptus Drive	40	223	42	44	***349***
28	Portola Drive/West Portal Avenue/Sloat Boulevard	14	0	12	15	***41***

SOURCE: Quality Counts, 2022

In 2014, San Francisco adopted a Vision Zero policy. The goal of the Vision Zero policy is to "create a culture that prioritizes traffic safety and ensures that mistakes on roadways do not result in serious injuries or death."[74] In 2015, the City released a pedestrian, cyclist, and vehicle high injury corridor report (with an

[74] City and County of San Francisco, City Performance Scorecards Traffic Facilities, https://sfgov.org/scorecards/transportation/traffic-fatalities, accessed October 17, 2022.

associated Vision Zero network) along with a two-year action strategy and new protocols for tracking traffic fatalities and improving the City's understanding of Vision Zero's impact. 19th Avenue from Sloat Boulevard to Randolph Street, which is adjacent to the project site, is identified as part of the Vision Zero network. In addition, the following street segments near the project site are also included in the 2017 Vision Zero network:[75]

- Lake Merced Boulevard from Font Boulevard to Sunset Boulevard
- Sunset Boulevard from Lake Merced Boulevard to Ulloa Street

Pedestrian collision from the City's TransBASE Dashboard representing the most recent five complete years of data (2017-2021) reported 29 pedestrian-involved collisions within the study area, including five severe injuries and three pedestrian fatalities.[76]

Within the project study area, two corridors identified in the Vision Zero network included the following collision history:

- Three pedestrian collisions occurred at the Sloat Boulevard/36th Avenue intersection, including two that resulted in pedestrian deaths. These collisions all involved pedestrians crossing the street.
- Two reported collisions occurred at the 19th Avenue/Winston Drive intersection, one resulting in severe injury and the other in pedestrian death. Both collisions involved pedestrians crossing at the intersection.

Other pedestrian collisions (less severe or less spatially concentrated) are reported along Sloat Boulevard, Ocean Avenue, Eucalyptus Drive, and Junipero Serra Boulevard.

Within the project site, the following collisions trends are reported:

- Three pedestrian injury collisions (two minor, one severe) occurred at or near the 20th Avenue/Buckingham Way North intersection. In two cases, a pedestrian was crossing at the intersection; in the other instance, a pedestrian was crossing south of the intersection.
- Two other collisions were reported to have occurred along 20th Avenue at separate locations just north of Winston Drive. In both cases, pedestrians were noted to be crossing either "not at crosswalk" or "not at intersection."

BICYCLING CONDITIONS

Existing bicycling conditions were evaluated during field visits to the transportation study area in 2022. Counts of people biking were collected in March 2022 during the weekday p.m. peak hour. The following describes conditions related to people bicycling in the study area. In addition, the following identifies any potentially or observed hazardous conditions at locations where people bicycle. Lastly, the following describes the number of people bicycling at study intersections.

[75] San Francisco Department of Public Health, *Vision Zero High Injury Network: 2017*, http://sfgov.maps.arcgis.com/apps/webappviewer/index.html?id=fa37f1274b4446f1bdddd7bdf9e708ff, accessed September 20, 2022.
[76] TransBASE Dashboard, https://transbase.sfgov.org/dashboard/dashboard.php, accessed August 16, 2022.

Bicycle facilities are typically classified into four classes per Caltrans Highway Design Manual Chapter 1000, Bicycle Transportation Design[77], primarily based on the level of separation from vehicular traffic:

- Class I bikeway (bike path) – This is a dedicated path for bicyclists and/or pedestrians that does not permit motorized travel. No class I bikeways exist in the study area.
- Class II bikeway (bike lane) – This is a portion of the roadway network that has been striped and signed for bicycle use. Implementation of class II bicycle facilities requires sufficient right-of-way between the vehicle stream and the curb or curbside parking. Bicycle lanes are typically used along collector or arterial streets with medium to high traffic volumes, providing additional travel space for bicyclists along busy roadway segments.
- Class III bikeway (bike route) – This is a bikeway that primarily serves to connect other facilities and destinations in the bikeway network. These routes include signage but do not have roadway markings or striping to indicate reserved space for the bicyclists. Bicyclists traveling on class III facilities must share travel lanes with vehicle traffic.
- Class IV bikeway (separated bikeway) – This is a dedicated, separated and protected on-street lane for bicyclists. Separated bike lanes (or protected bike lanes) are typically used along streets with high traffic volumes and high speeds, providing additional protection for bicyclists through the use of vertical separation, such as concrete curb or safe-hit posts. No class IV bikeways exist in the study area.

Figure 3.B-2 shows the existing bike facilities in the study area. As shown in the figure, dedicated bicycle facilities overlap with the following Vision Zero network segments previously discussed.

- Sunset Boulevard from Lake Merced Boulevard to Ocean Avenue
- Lake Merced Boulevard from Sunset Boulevard to Font Boulevard

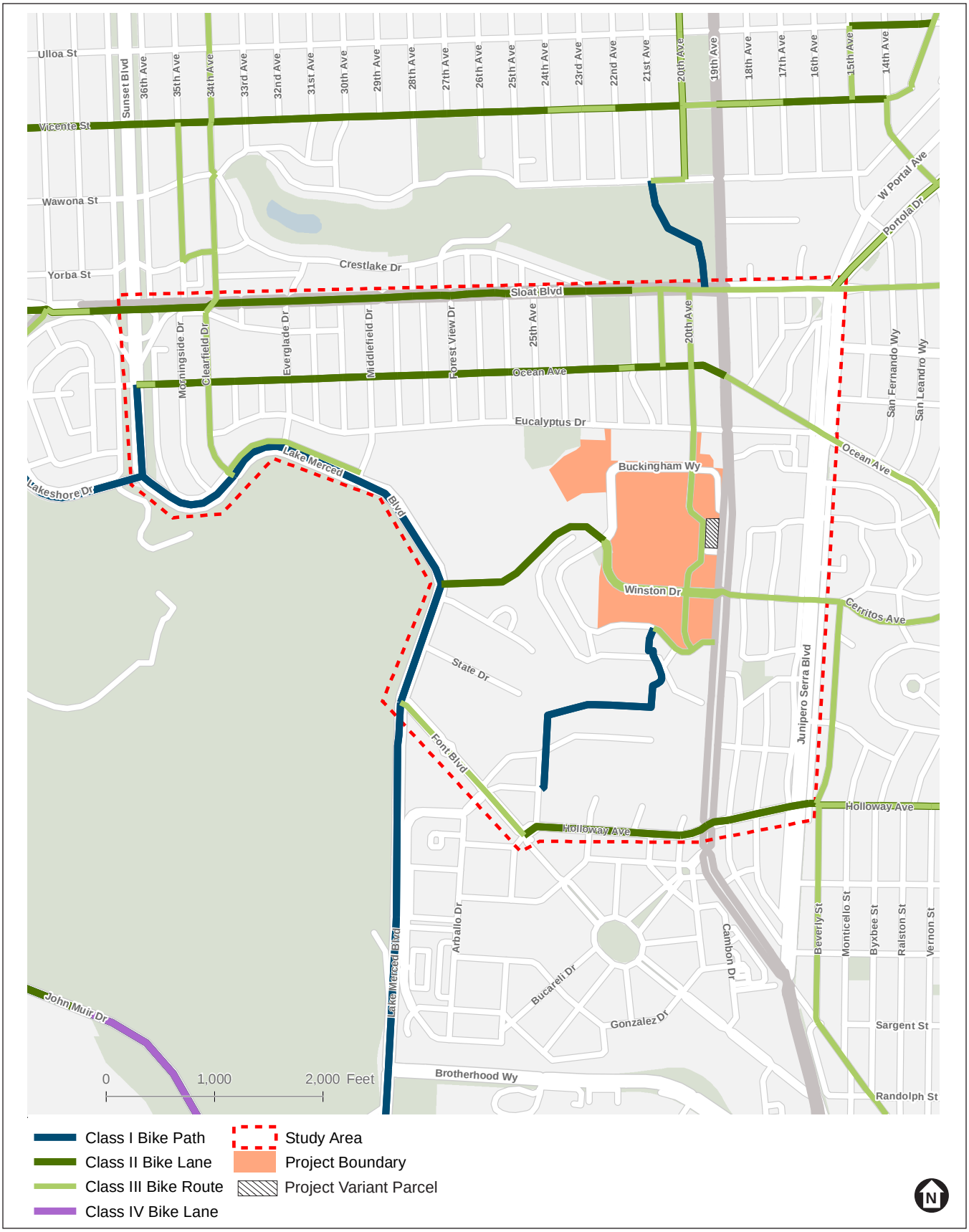
Bicycle collision data from the TransBASE Dashboard (2017-2021) reported 11 bicycle-involved collisions, including one severe injury, and no bicyclist fatalities within the study area.[78] Two locations included more than one reported bicyclist-related collision in the time period:

- Sloat Boulevard/19th Avenue, which included one minor and one moderate injury crash. There was no common movement or direction pattern between the collisions.
- Sloat Boulevard/Portola Drive/Junipero Serra Boulevard/W Portal Avenue, which included one minor and one moderate injury crash. There was no common movement or direction pattern between the collisions.

Much of the area surrounding the project site is included in the San Francisco Bicycle Network and includes class III and class IV bikeways. However, the following impediments to bicyclists were noted during field observations:

- High speeds and heavy vehicle traffic along Lake Merced Boulevard and Sunset Boulevard
- Skewed intersection geometry at Portola Drive/West Portal Avenue/Sloat Boulevard

[77]California Department of Transportation, *Highway Design Manual Chapter 1000: Bicycle Transportation Design*, December 30, 2015, last updated in July 2020, https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm, accessed November 10, 2022.
[78] TransBASE Dashboard, https://transbase.sfgov.org/dashboard/dashboard.php, accessed August 16, 2022.



SOURCE: Kittelson & Associates, 2022

Stonestown Development Project

FIGURE 3.B-2
EXISTING BICYCLING NETWORK

Field observations and count data indicate that bicycle use is relatively low around the project site, with most bicyclists traveling via 19th Avenue/Sloat Boulevard (26 bicyclists traveling during the p.m. peak hour) and along Lake Merced Boulevard. Bicycling counts are summarized in **Table 3.B-5**.

Table 3.B-5 Bicycling Counts at Study Intersections– Weekday P.M. Peak Hour

No.	Intersection	Intersection Approach (Number of People Biking)				
		Northbound	Southbound	Eastbound	Westbound	Total
5	19th Avenue/Sloat Boulevard	0	2	11	13	***26***
6	19th Avenue/Ocean Avenue	0	1	4	6	***11***
7	19th Avenue/Eucalyptus Drive	0	1	1	1	***3***
8	19th Avenue/Winston Drive	1	0	1	1	***3***
9	19th Avenue/Buckingham Way South	4	1	1		***6***
10	19th Avenue/Holloway Avenue	0	2	3	1	***6***
12	Junipero Serra Boulevard/Holloway Avenue	0	0	6	2	***8***
14	Junipero Serra Boulevard/Mercedes Way/Winston Drive	1	1	1	2	***5***
15	Junipero Serra Boulevard/Ocean Avenue/Eucalyptus Drive	1	4	4	—	***9***
20	Buckingham Way South/Winston Drive	0	1	1	1	***3***
21	Lake Merced Boulevard/Winston Drive	6	15	—	5	***26***
22	Lake Merced Boulevard/Middlefield Drive	—	2	18	7	***27***
23	Lake Merced Boulevard/Sunset Boulevard	—	1	0	0	***1***
25	20th Avenue/Winston Drive	1	0	0	0	***1***
26	20th Avenue/Buckingham Way North	6	7	0	0	***13***
27	20th Avenue/Eucalyptus Drive	1	2	11	2	***16***
28	Portola Drive/West Portal Avenue/Sloat Boulevard	5	8	4	3	***20***

SOURCE: Quality Counts, 2022

There are roughly 100 existing bike parking spaces on the project site. Approximately two-thirds of those spaces are provided in outdoor surface bike rack spaces (class 1 parking). The remainder consists of indoor and/or secured bike box spaces (class 2 parking).

PUBLIC TRANSIT CONDITIONS

The project site is well served by public transit, including Muni Metro light rail, local and rapid Muni bus routes, and a regional bus route operated by SamTrans.[79] **Table 3.B-6** presents local and regional transit

[79] San Francisco State University also provides free shuttle service during the fall and spring semesters on non-holiday weekdays. As described in Appendix D.2, Transit Delay Analysis Memorandum, the analysis excludes discussion of the shuttle service because its more limited availability than the routes studied herein and the project or variant would not have a potential to significantly delay such service.

routes and their operating characteristics serving the project site (providing access within 0.25 mile), and **Figure 3.B-3** visually presents these routes.

Table 3.B-6 Existing Muni and SamTrans Service within Study Area

Route	Weekday Headways[a]	Hours of Operation	Nearest Stop to the Project Site	Distance to Project Site
K/T K Ingleside-T Third Street	8	**Weekdays:** 6 a.m. to 12 a.m. **Weekends:** 8 a.m. to 12 a.m.	Junipero Serra Boulevard & Ocean Avenue	0.3 mile
M Ocean View	9	**Weekdays:** 6 a.m. to 12 a.m. **Weekends:** 8 a.m. to 12 a.m.	19th Avenue & Winston Drive	0.1 mile
18 46th Avenue	20	6 a.m. to 10 p.m. daily	20th Avenue & Winston Drive	Onsite
28 19th Avenue	10	5 a.m. to 12 a.m. daily	19th Avenue & Winston Drive	0.1 mile
28 R 19th Avenue Rapid	10	A.M. and P.M. peak service	19th Avenue & Winston Drive	0.1 mile
29 Sunset	9	5 a.m. to 12 a.m. daily	20th Avenue & Winston Drive	Onsite
57 Parkmerced	20	**Weekdays:** 5 a.m. to 10 p.m. **Weekends:** 6 a.m. to 10 p.m.	20th Avenue (at CitySports)	Onsite
58 Lake Merced	30	**Weekdays:** 5 a.m. to 10 p.m. **Weekends:** 6 a.m. to 10 p.m.	Winston Drive & Buckingham Way South	Onsite
SamTrans Route 122	20	6 a.m. to 10 p.m. daily	Winston Drive & Buckingham Way South	Onsite

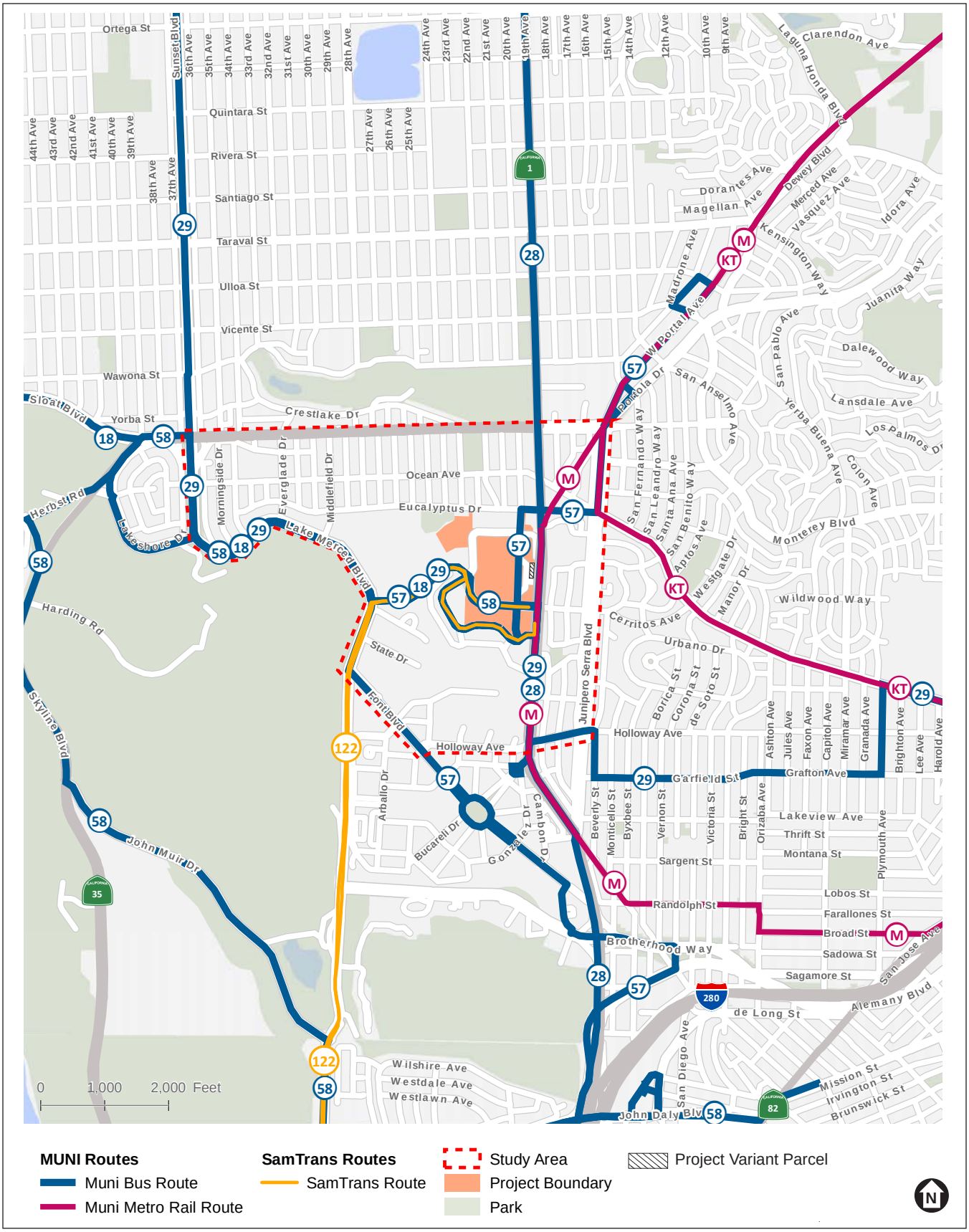
SOURCE: Muni, 2019, https://www.sfmta.com/routes.

NOTES:

Transit routes shown have a bus stop within 0.5 mile of the project site.

[a] Headway is scheduled time between buses, presented in minutes. Headways shown are an average headway for the corresponding weekday a.m. (7 to 9 a.m.) and p.m. (4 to 6 p.m.) peak-hour headway schedule.

These transit data reflect existing conditions prior to the COVID-19 pandemic (i.e., before March 2020). Exceptions to this include Muni's 57 Parkmerced and 58 Lake Merced, which were initially shortened during the pandemic but have newly implemented routes as of July 9, 2022, and are anticipated to remain after the pandemic. For those routes, the newly implemented changes are analyzed. More detail is provided in Appendix D.2, Transit Analysis Memorandum.



SOURCE: Kittelson & Associates, 2022

Stonestown Development Project

FIGURE 3.B-3
EXISTING TRANSIT SERVICE

LOCAL MUNI SERVICE

The San Francisco Municipal Railway (Muni) provides transit service within San Francisco, including bus (diesel, bio-diesel/electric hybrid and electric trolley), light rail (Muni Metro), cable car, and electric streetcar lines. Table 3.B-6 summarizes Muni service characteristics for the Muni routes operating within the study area with bus stops located within 0.5 mile of the project site.

REGIONAL TRANSIT SERVICE

SOUTH BAY

SamTrans provides bus service between San Mateo County and San Francisco. SamTrans operates three bus lines that serve downtown San Francisco. The closest SamTrans bus stop to the project site is on SamTrans Route 122, at Winston Drive/Buckingham Way South. Although Route 122 crosses boundaries between San Mateo County and the City and County of San Francisco, it has the following characteristics of a local route: it runs throughout the day (rather than just during peak periods), it operates on 20- to 30-minute headways (like some of the Muni routes), and it provides stops on the project site and along its route with stop spacing more similar to a typical local route (i.e., closer) compared to a typical regional bus service.

EMERGENCY ACCESS CONDITIONS

The project site and study area are served by the San Francisco Fire Department (fire department) Station 19, located at the southwest corner of the Winston Drive/Buckingham Way South intersection (study intersection 20). Fire truck access is provided along the south side of Buckingham Way South approximately 50 feet from the intersection.

VEHICLE MILES TRAVELED

VMT per person (or per capita) is a measurement of the amount and distance that a resident, employee, or visitor drives, accounting for the number of passengers within a vehicle. Many interdependent factors affect the amount and distance a person might drive. In particular, the built environment affects how many places a person can access within a given distance, time, and cost, using different ways of travels (e.g., private vehicle, public transit, bicycling, walking, etc.). Typically, low-density development located at great distances from other land uses and in areas with few options for ways of travel provide less access than a location with high density, mix of land uses, and numerous ways of travel. Therefore, low-density development typically generates more VMT compared to a similarly sized development located in urban areas.

Given these travel behavior factors, on average, persons living or working in San Francisco result in lower amounts of VMT per person than persons living or working elsewhere in the nine-county San Francisco Bay Area region. In addition, on average, persons living or working in some areas of San Francisco result in lower amounts of VMT per person than persons living or working elsewhere in San Francisco. The city displays different amounts of VMT per capita geographically through transportation analysis zones.[80]

The San Francisco County Transportation Authority uses the San Francisco Chained Activity Modeling Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different transportation analysis

[80] Planners use these zones as part of transportation planning models for transportation analyses and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas such as the Hunters Point Shipyard area.

zones. The transportation authority calibrates travel behavior in the model based on observed behavior from the California Household Travel Survey 2010–2012, census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. The model uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day.

The model can be used to estimate daily typical weekday VMT for residential, office, and retail land use types. For residential and office uses, the transportation authority uses tour-based analysis. A tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from a site. Tour-based analysis is appropriate in these cases because home and work are "anchor" locations that condition how people structure their travel, like where they might stop for coffee, or whether they choose to leave home by transit or in a car. For retail uses, the transportation authority uses trip-based analysis. A trip-based analysis counts VMT from individual trips to and from a site (as opposed to entire chain of trips). A trip-based approach is necessary for retail sites as retail trips are more easily substituted for another location or at another time within a person's schedule than home- and work-related trips. In other words, retail sites are more likely to be chosen for their proximity and convenience to work and home.[81,82]

Table 3.B-7 presents the existing average daily VMT per capita for residents and visitors for the nine-county San Francisco Bay Area, the regional average minus 15 percent and for transportation analysis zone 918, the zone in which the project site is located. The boundaries of transportation analysis zone 918 are generally North State Drive, Lake Merced Boulevard, Eucalyptus Drive, and 19th Avenue. The existing average daily VMT per capita for the various land uses at the project site is less than the regional bay area averages.

Table 3.B-7 Existing Daily Vehicle Miles Traveled per Capita

Land Use	Bay Area Regional Average	Project TAZ (TAZ 918)
Residential	18.6	8.1
Office	25.7	18.8
Retail	14.9	4.9

SOURCE: San Francisco Planning Department, San Francisco Housing Element 2022 Update Draft Environmental Impact Report, 2022

COMMERCIAL VEHICLE AND PASSENGER LOADING CONDITIONS

The following describes loading conditions in the study area.

FREIGHT LOADING

Existing freight loading zones, which are designated by yellow curbs, are located within the parking lot on the eastern edge of the mall, south of the Whole Foods. Generally, within the project site, circulation for freight and commercial vehicles is provided within the off-street parking lots and the underground garages,

[81] To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.
[82] San Francisco Planning Department, Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A, March 3, 2016.

minimizing the likelihood (and the observed occurrence) of double-parking events that block through traffic. There are loading docks on the west side of the mall for retail tenants, including Whole Foods, Trader Joes, and Target. These off-street docks are provided with adequate space for trucks to access the loading docks, including to reverse in or out to or from Buckingham Way South. No conflicts were observed between loading vehicles and other uses of the transportation system at the loading docks during field observations.

PASSENGER LOADING

Within the project site, there is no designated on-street passenger loading. As with freight loading, passenger pick-up/drop-off was observed to occur off-street and typically within the parking lots that provide direct frontage access to the existing mall and other retail buildings. Along 20th Avenue, south of Winston Drive, there are several retail frontages (Target, CHASE bank, Trader Joe's, and McDonald's); the fronting curb is designated no stopping (red curb) yet some passenger pick-up/drop-off was observed at this location. In such instances, other drivers were observed to pass the passenger loading vehicle within the single existing lane. The roadway at this location is approximately 40 feet wide for two lanes.

Near the project site, there is designated passenger loading (white curb) on Eucalyptus Drive near the Donworth Event Center.

VEHICLE PARKING CONDITIONS

ON-STREET VEHICLE PARKING

There is no on-street vehicle parking located within the project site.

OFF-STREET VEHICLE PARKING

There are approximately 3,400 total existing vehicle parking spaces, including 700 spaces in the parking garage at the southwest corner of the project site, 250 spaces in an underground parking garage below the Stonestown Galleria shopping mall, and 2,450 surface parking spaces on the east and west side of the shopping mall.

Surface parking is provided along each side of 20th Avenue, with driveway access provided to parking aisles on each side: nine total aisle access points on the east side of 20th Avenue over the approximately 1,000 feet between Winston Drive and Buckingham Way North and six on the west side. Access to the 250-space parking garage is also provided along the west side of 20th Avenue north of Winston Drive. Access to the 700-space parking garage in the southwest corner of the project site is provided along the south side of Winston Drive south of Buckingham Way South and along the north side of Buckingham Way North (west of 20th Avenue).

3.B.3 Regulatory Framework

The following summarizes relevant state, regional, and local transportation regulations applicable to the project and variant, along with relevant transportation plans and policies. There are no federal regulations that pertain to transportation impacts associated with the project.

STATE REGULATIONS

CEQA SECTION 21099(B)(1) (SENATE BILL 743)

CEQA section 21099(b)(1) requires that the State Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment under CEQA.

After a five-year public process, the California Natural Resources Agency amended the CEQA Guidelines in 2018 and added section 15064.3, Determining the Significance of Transportation Impacts, and amended Appendix G, Environmental Checklist Form, to remove automobile delay as a measure to determine a project's significance on the environment and to instead require (in most circumstances) analysis of a project's impact on VMT.

CALTRANS INTERIM LOCAL DEVELOPMENT INTERGOVERNMENTAL REVIEW SAFETY REVIEW PRACTITIONERS GUIDANCE

Although not a regulation, Caltrans' Local Development and Intergovernmental Review Safety Review Practitioners Guidance applies to proposed land use projects and plans affecting the state highway network (e.g., Lombard Street, Van Ness Avenue, Sloat Boulevard, 19th Avenue in San Francisco). Development projects affecting the state highway network may be subject to additional review by Caltrans to determine whether the proposed project may influence or contribute to locations identified for traffic safety improvements. This safety review guidance also specifies the review of the proposed development's site design for vehicle access for consistency with applicable state and national vehicle, pedestrian and bicycle design standards.[83]

The Interim Safety Review Practitioners Guidance identifies that infill development can improve traffic safety. For example, it states on p. 4: "Well planned, development projects located close to transit, bike and pedestrian facilities have proximity benefits to employment centers, services and goods; reduce vehicle travel demand on the entire transportation system; and generally, reduce crash exposure, leading to a reduction in crash occurrence and crash severity."

REGIONAL REGULATIONS

PLAN BAY AREA

Plan Bay Area 2050 is a state-mandated, integrated long-range transportation and land use plan. As required by Senate Bill 375, all metropolitan regions in California must complete a Sustainable Communities Strategy as part of a Regional Transportation Plan. This strategy integrates transportation, land use and housing to meet greenhouse gas reduction targets set by the California Air Resources Board. The plan meets those

[83] California Department of Transportation, *Traffic Safety Bulletin 20-02-R1: Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance*, December 18, 2020, https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf, accessed November 10, 2022.

requirements. In addition, the plan sets a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. The plan neither funds specific transportation projects nor changes local land use policies.

In the bay area, the Metropolitan Transportation Commission and the Association of Bay Area Governments adopted the latest plan in October 2021. To meet the greenhouse gas reduction targets, the plan identifies priority development areas.[84] The agencies estimate approximately 72 percent of housing and 48 percent of job growth in the Bay Area will occur in priority development areas between 2015 and 2050. The project is located in the 19th Avenue Priority Development Area.

LOCAL REGULATIONS

TRANSIT FIRST POLICY

In 1973, the San Francisco Board of Supervisors declared that public transit be given priority over other vehicles on San Francisco streets. In 1998, the San Francisco voters amended the City Charter (charter article 8A, section 8A.115) to include a transit first policy. The San Francisco General Plan incorporates the policy and the policy requires all city boards, commissions, and departments to implement principles that, among others, encourage the use of public rights of way by people walking, bicycling, and riding public transit above the use of the personal automobile.

VISION ZERO

In 2014, the San Francisco Board of Supervisors adopted a resolution to implement an action plan to reduce traffic fatalities to zero by 2024 through engineering, education, and enforcement (resolution 91-14). Numerous San Francisco agencies responsible for the aforementioned aspects of the action plans adopted similar resolutions. In 2017, the Board of Supervisors amended the transportation and urban design elements of the general plan to implement Vision Zero (ordinance 175-17).

SAN FRANCISCO GENERAL PLAN

The transportation element of the general plan is composed of objectives and policies that relate to the nine aspects of the citywide transportation system: general, regional transportation, congestion management, vehicle circulation, transit, pedestrian, bicycles, citywide parking, and goods management. The transportation element references the city's Transit First Policy in its introduction and contains objectives and policies that are directly pertinent to consideration of the project, including objectives related to prioritizing sustainable modes of travel, integrating and connecting land use development and transportation investments, and designing streets for walking, biking, and public transit.

SAN FRANCISCO REGULATIONS FOR WORKING IN SAN FRANCISCO STREETS (BLUE BOOK)

The San Francisco Regulations for Working in San Francisco Streets (also known as the "blue book") contains regulations that are prepared and regularly updated by the San Francisco Municipal Transportation Agency (SFMTA), under the authority derived from the San Francisco Transportation Code. The SFMTA blue book serves as a guide for all city agencies (San Francisco Public Works [public works], SFMTA, San Francisco Public Utilities Commission [SFPUC], the Port of San Francisco, etc.), utility crews, private contractors, and others who conduct construction-related activities (e.g., excavation, staging of materials or equipment) in

[84] Priority development areas are places near public transit that are planned for new homes, jobs, and community amenities.

San Francisco's public rights-of-way.[85,86] The Blue Book generally does not apply to private streets. The manual establishes rules and guidance so that work can be done safely and with the least possible interference with pedestrians, bicycle, transit and vehicular traffic. The manual also contains relevant general information, contact information, and procedures related to working in the public right of way when it is controlled by agencies other than the SFMTA.

Prior to construction of development projects that require work in the public right-of-way, construction contractor(s) would be required to meet with public works and SFMTA staff members to develop and review the project's construction plans in preparation for obtaining relevant construction permits. This may include reviewing truck routing plans for the disposal of excavated materials, material delivery and storage, as well as staging for construction vehicles. If the SFMTA determines that a construction project impacts transit routing or alters the flow of vehicle, bicycle, or pedestrian traffic, a logistic plan would be required so that SFMTA permit staff can confirm what permits from SFTMA or public works are required for the project.

Should the project's construction activities not comply with regulations in the SFMTA blue book or the traffic routing specifications in a city contract or when two or more contractors work at a time on any one block,[87] the contractor would be required to apply for a special traffic permit from SFMTA prior to the commencement of onsite work. Some examples of circumstances when special traffic permits are required include, but are not limited to, closing a street or an alley, closing a sidewalk, closing or detouring a bicycle route, moving a bus zone outside the limits of the project, inability to provide the required number of lanes, and/or construction work occurring within one block of an existing construction site.

As part of its review for special traffic permits, SFMTA, in coordination with public works, may include necessary measures in the special traffic permit to ensure the safety and accessibility of people walking, bicycling, and driving, and public transit operations at or near the project site. In addition, as part of the permitting process, public works also reviews proposed construction activities so that they comply with all applicable requirements under the ADA.

If a special traffic permit is required, the project contractor may not commence construction activities until the permit is issued. A special traffic permit is issued for no more than 30 calendar days, after which the contractor is required to renew to perform further construction activities. SFMTA may refuse to issue, extend, or revoke a special traffic permit, depending on transportation network conditions at or near the project site. Penalties may be assessed for violating the terms of a special traffic permit and/or the regulations described in the SFMTA blue book or failing to obtain a special traffic permit when one is required. Additional penalty fees or six months in jail or both may be applied for the fourth and subsequent violations in a 12-month period.[88]

In addition to the regulations presented in the manual, all traffic control, warning, and guidance devices must conform to the California Manual on Uniform Traffic Control Devices.[89] Furthermore, contractors are

[85] San Francisco Municipal Transportation Authority, Regulations for Working in San Francisco Streets, 8th Edition, January 2012, https://www.sfmta.com/sites/default/files/reports-and-documents/2020/06/blue_book_8th_edition_6-23-20.pdf, accessed February 2021.
[86] San Francisco Transportation Code, https://codelibrary.amlegal.com/codes/san_francisco/latest/sf_transportation/0-0-0-2, accessed February 2021.
[87] San Francisco Municipal Transportation Authority, Regulations for Working in San Francisco Streets, 8th Edition, section 3.5, January 2012, https://www.sfmta.com/sites/default/files/reports-and-documents/2020/06/blue_book_8th_edition_6-23-20.pdf, accessed February 2021.
[88] Ibid.
[89] California Manual on Uniform Traffic Control Devices (MUTCD) Rev 6, 2014, https://dot.ca.gov/programs/safety-programs/camutcd, assessed February 2021.

responsible for complying with all applicable city, state, and federal codes, rules, and regulations. The party responsible for setting up traffic controls during construction is responsible if such controls do not meet the guidance and requirements established by this manual and any applicable state requirements.

PUBLIC WORKS CODE CONSTRUCTION WORK REQUIREMENTS

Public Works Code requirements generally apply to construction work in the public right-of-way, not private streets.

The San Francisco Public Works Code section 724 requires that a property owner obtain a street space occupancy permit from public works for occupying any part of the fronting street or sidewalk for any purpose, including building construction operations. Section 724 also establishes requirements for the temporary occupation of the public right-of way including, but not limited to, clearances for traffic-signal equipment, notice to all impacted fronting property owners, pedestrian clearances, construction worker parking plans in certain use districts, debris management, and clearances for fire department equipment. Further, section 724 also requires projects to provide lights, barriers, barricades, signs, cones, and other devices to ensure pedestrian and traffic safety. Section 724 also requires that the property owner provide lights, barriers, barricades, signs, cones, and other devices to ensure pedestrian and traffic safety.

Public works code section 2.4.20 addresses permits to excavate. For a permit for major work or excavation that will affect the public right-of-way[90] that is 30 consecutive calendar days or longer, contractors are required to submit for public works review a contractor parking plan, including a proposal to reduce parking demand in the project site vicinity.

Public Works order no. 167,840,[91] identifies requirements related to the placement of various types of barricades at construction sites, such as A-frames, barrier caution tapes, fencing, and barricades around crosswalks. These requirements are intended to protect pedestrians near construction sites consistent with all local, state, and federal codes, including the ADA and the California Building Code, title 24.

TRANSPORTATION SUSTAINABILITY FEE

The planning code requires certain new development projects to pay an updated fee, based on the size of the development, to the city (section 411A). The fee offsets a portion of the development projects impacts on the transportation system. The city may only use the fee towards specific programs consisting of transit capital maintenance, local and regional transit service expansion and reliability, complete streets, and program administration.

TRANSPORTATION DEMAND MANAGEMENT PROGRAM

The planning code requires certain new development projects to incorporate “design features, incentives, and tools” intended to reduce VMT (section 169). Development projects must choose measures from a menu of options to develop an overall Transportation Demand Management (TDM) plan. Some options in the menu overlap with requirements elsewhere in the planning code (e.g., bicycle parking, car-share parking). Each

[90] The public corks code section 2.4.4 defines “major work” as any reasonably foreseeable excavation that will affect the public right-of-way for more than 15 consecutive calendar days.
[91] San Francisco Public Works, Guidelines for the Placement of Barricades at Construction Sites (Order No. 167,840), 2008, http://sfpublicworks.org/sites/default/files/Guidelines_for_Placement_of_Barricades_0.pdf, accessed November 8, 2022.

development project's TDM plan require routine monitoring and reporting to the planning department to demonstrate compliance.

BETTER STREETS PLAN, POLICY, AND REQUIREMENTS

In 2006, the San Francisco Board of Supervisors adopted the Better Streets Policy. Since then, the board has amended the policy several times, including in 2010 to reference the Better Streets Plan. The Better Streets Plan creates a unified set of standards, guidelines, and implementation strategies to govern how San Francisco designs, builds, and maintains its pedestrian environment. The planning code requires certain new development projects to make changes to the public right-of-way, such that it is consistent with the Better Streets Plan (section 138.1). The planning code requires most projects to plant and maintain street trees and some, larger projects to submit a streetscape plan that may require elements such as sidewalk widening, transit boarding islands, and medians.

OFF-STREET LOADING

The planning code requires certain new development projects to include off-street freight loading spaces (section 152.1). The planning code requirements for spaces, depends on the size of the development projects. The planning requires certain dimensions of the spaces and allows for substituted service vehicle spaces (section 154(b)).

OFF-STREET VEHICLE PARKING

The planning code does not require new development projects to provide off-street vehicle parking spaces (sections 151 and 151.1), and instead specifies the maximum permitted number of vehicle parking spaces. The number of vehicle parking spaces permitted as accessory to the land use depends on the type of land use(s), size, and location of the development project.

3.B.4 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

San Francisco Administrative Code chapter 31 directs the planning department to identify environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G. As it relates to transportation and circulation, Appendix G asks whether the project would:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; or
- Result in inadequate emergency access.

The planning department uses significance criteria to facilitate the transportation analysis and address the Appendix G checklist. The planning department separates the significance criteria into two categories: construction and operation.

CONSTRUCTION

Project construction would have a significant effect on the environment if it would require a substantially extended duration or intense activity; and the effects would create potentially hazardous conditions for people walking, bicycling, or driving, or public transit operations; or interfere with accessibility for people walking or bicycling or substantially delay public transit.

OPERATION

The operational impact analysis addresses the following six significance criteria. A project would have a significant effect if it would:

- Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations;
- Interfere with accessibility of people walking or bicycling to and from the project area and adjoining areas, or result in inadequate emergency access;
- Substantially delay public transit;
- Cause substantial additional VMT or substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-traffic travel lanes) or by adding new roadways to the network;
- Result in a loading deficit and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit; or
- Result in a parking deficit and the secondary effects would create potentially hazardous conditions for people walking, bicycling, or driving, or interfere with accessibility for people walking or bicycling or inadequate access for emergency vehicles, or substantially delay public transit.

APPROACH TO ANALYSIS

PROJECT FEATURES

The following describes transportation-related features of the proposed project or variant not already described in Chapter 2, Project Description.

CONSTRUCTION FEATURES

The proposed project is conservatively anticipated to be constructed in six overlapping phases over the course of approximately eight years. The six development phases are Phase 1 (Blocks NW1, NW2, NW3, and W2, 45 months), Phase 2 (Blocks W1, W3, and W4, 44 months), Phase 3 (Blocks E1, E5, and E7, 28 months), Phase 4 (Blocks E2, E3, E4, and E6, 44 months), Phase 5 (Blocks S1 and S2, 43 months), and Phase 6 (Block S3, 36 months). The variant would have similar construction phases except that Phase 4 would also include the Authentic Church Parcel. There is anticipated to be an average of 28 truck trips per day (29 for the variant) for material delivery and removal during subphases that involve the use of trucks (demolition, grading, shoring, excavating, building construction, and paving). For all phases, the truck routes would include two origins and destinations: a concrete truck destination in the Bayview neighborhood and a grading/excavation haul route destination in the East Bay (San Leandro). Proposed truck routes to and from both destinations would include Interstate 280, Junipero Serra Boulevard, and 19th Avenue to access the

project site. Depending on the construction phase, the route to and from the phased construction site and 19th Avenue may vary.

The number of construction workers accessing the site would range from 8 to 1,723 workers per day (8 to 1,822 for the variant). Vehicle parking for construction workers and contractors would likely be provided within each phased area. The preliminary construction schedule and phasing is described in more detail in Section 2.E.1, Construction Schedule, p. 2-40.

ROADWAY NETWORK FEATURES

Circulation changes proposed by the project or variant are shown conceptually in Figure 2-12 and Figure 2-13, pp. 2-23 and 2-23. The proposed changes include:

- 20th Avenue: The portion of 20th Avenue between Eucalyptus Drive and Winston Drive would be straightened. Between Buckingham Way North and Winston Drive, under existing conditions, the roadway mainly consists of one lane in each direction with a center-running two-way left-turn lane at parking lot access points; a second travel lane exists at the approaches to Buckingham Way North (both directions) and Winston Drive (for southbound left turns). The dedicated southbound left-turn lane at Winston Drive intersection would be removed (the second lane at the intersection with Buckingham Way North would remain). See Figures 2-14 to 2-17, pp. 2-24 to 2-27, for conceptual illustrative cross sections of 20th Avenue.
- Buckingham Way: Buckingham Way North would be reduced from four total travel lanes (two in each direction) to two total travel lanes (one in each direction) between 20th Avenue and Winston Drive. The one-way connection to 19th Avenue would be closed and replaced by Street A (described below). See Figure 2-18, p. 2-29, for a conceptual illustrative cross section of Buckingham Way North.
- Winston Drive: Winston Drive between Block S3 and 20th Avenue would be reduced from four total travel lanes (two lanes in each direction) to three travel lanes (two lanes westbound and one lane eastbound). The curved portion at Block S3 may be straightened to a 90-degree corner. See Figures 2-19 and 2-20, pp. 2-30 and 2-31, for conceptual illustrative cross sections of Winston Drive.
- Street A: A new street with two total travel lanes (one lane in each direction) would connect 20th Avenue to block E1 and would provide right-in, right-out access at 19th Avenue.
- Street B: A new street with two total travel lanes (one lane in each direction) would connect 20th Avenue to Blocks E3 and E4. Street B would not connect to 19th Avenue.
- The project or variant would remove channelized[92] right-turn lanes ("slip lanes") at the following locations:
  - 19th Avenue/Winston Drive: The southbound right and eastbound channelized right-turn lanes would be closed. Southbound right-turns would still be accommodated from a dedicated right-turn lane; eastbound right-turns would be accommodated by a shared through/right-turn lane.
  - 20th Avenue/Eucalyptus Drive: The northbound channelized right-turn lane would be closed, and the lane configuration would include a northbound shared through/left lane and a northbound right-turn lane.

[92] Channelized turn lanes are a common treatment at signalized intersections intended to allow heavy right-turning movements to bypass the main intersection.

  - 20th Avenue/Winston Drive: the westbound right channelized right-turn lane would be closed, and the lane configuration would be modified to include two through lanes and one right-turn lane (left turns would be restricted).
- The project or variant also proposes signalization of onsite intersections and parking garage access points where none exist today, including:
  - Eucalyptus Drive/20th Avenue
  - Buckingham Way North/Buckingham Way North (adjacent to block NW3)
  - Midblock along Buckingham Way North between Buckingham Way North and 20th Avenue (providing access to block W2)
  - 20th Avenue/Buckingham Way North
  - 20th Avenue/Street A (new street)
  - 20th Avenue/Street B (new street)
  - Buckingham Way North/Winston Drive (current all-way stop control)
  - 20th Avenue/Buckingham Way North

WALKING NETWORK FEATURES

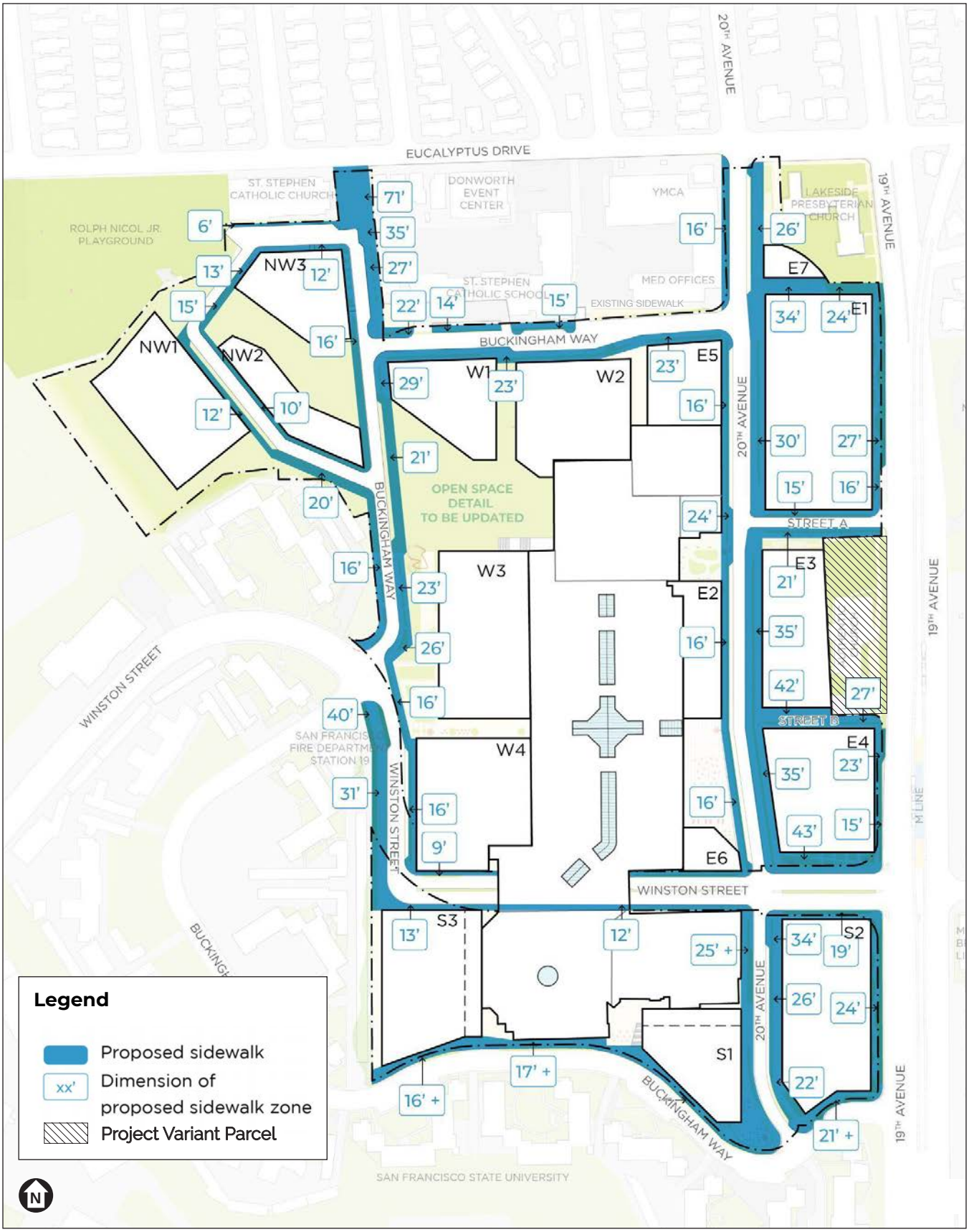
The proposed project or variant would provide continuous sidewalks along all project frontages and would fill the sidewalk gaps noted in Section E.B.2, Environmental Setting, p. 3.B-1, including along 20th Avenue. Sidewalks and pedestrian walkways cross sections are shown in Figures 2-14 to 2-20, pp. 2-24 to 2-31. As **Figure 3.B-4** shows, the proposed project or variant includes closure of the right-turn channelized lanes at 20th Avenue/Eucalyptus Drive, 20th Avenue/Winston Drive, and 19th Avenue/Winston Drive. Continuous sidewalks would provide walking connections to, from, and through the project site.

On interior streets, sidewalk width would vary from 6 feet wide to as much as 34 feet wide and could include cul-de-sacs and other pedestrian gathering areas that would be wider.

BICYCLE NETWORK FEATURES

The proposed project or variant would provide bicycle facilities connecting to all parcels onsite, including:

- Two-way separated bike lanes (class IV) along the south and east side of Buckingham Way extending from Buckingham Way South/Winston Drive to 20th Avenue/Buckingham Way North.
- Two-way separated bike lanes (class IV) along the east side of 20th Avenue from Buckingham Way South to Eucalyptus Drive
- Two-way separated bike lanes (class IV) along the west and south side of Winston Drive between Buckingham Way North and 20th Avenue
- One-way separated bike lane (class IV) along both sides of Winston Drive between 20th Avenue and 19th Avenue
- Class III bike route along the loop road on the northwest corner of the site.
- Shared use path (class I) connecting Buckingham Way to the northwest project extents.



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 3.B-4
PROPOSED PROJECT SIDEWALKS

The proposed bicycle circulation is illustrated in **Figure 3.B-5**, but detailed design of the proposed facilities would be subject to review and approval by SFMTA and public works. Proposed bicycle facilities are shown in the illustrative conceptual cross sections in Figures 2-14 to 2-20, pp. 2-24 to 2-31.

Both the proposed project and variant would provide class 1 bicycle parking within buildings on site. Class 2 bicycle parking spaces would be located within public right-of-way adjacent to each building entrance or in publicly accessible open spaces. The proposed project would provide up to 885 class 1 and up to 245 class 2 bicycle parking spaces. The variant would provide up to 923 class 1 and up to 253 class 2 bicycle parking spaces.

TRANSIT NETWORK FEATURES

The project site includes bus stops that serve the transit lines traveling through the site as shown in Figure 3.B-3, p. 3.B-14. The proposed project or variant proposes the following changes to transit routes, operations, or amenities: (shown in **Figure 3.B-6**, p. 3.B-29):

- The existing nearside bus stop along Winston Drive at Buckingham Way serving westbound buses would move to the far side. This stop serves the 18 46th Avenue, 29 Sunset, and 58 Lake Merced lines.
- The existing stops along 20th Avenue between Buckingham Way and Winston Street (one serving southbound buses, one serving northbound buses) would be relocated from their current location approximately 200 to 300 feet south of their current locations, further from the Buckingham Way intersection. These stops serve the 57 Parkmerced line.
- The bus stop along Winston Drive between 20th Avenue and 19th Avenue serving eastbound buses would be removed, with buses served by that stop continuing along Winston, taking a right turn onto 19th Avenue, and stopping at the curb at an existing stop along 19th Avenue. This stop serves the 18 46th Avenue, 29 Sunset, and 58 Lake Merced lines.
- The project or variant would add new traffic signals (including transit signal priority) and turn restrictions at intersections along 20th Avenue that serve transit (see Figure 2-13, p. 2-23).

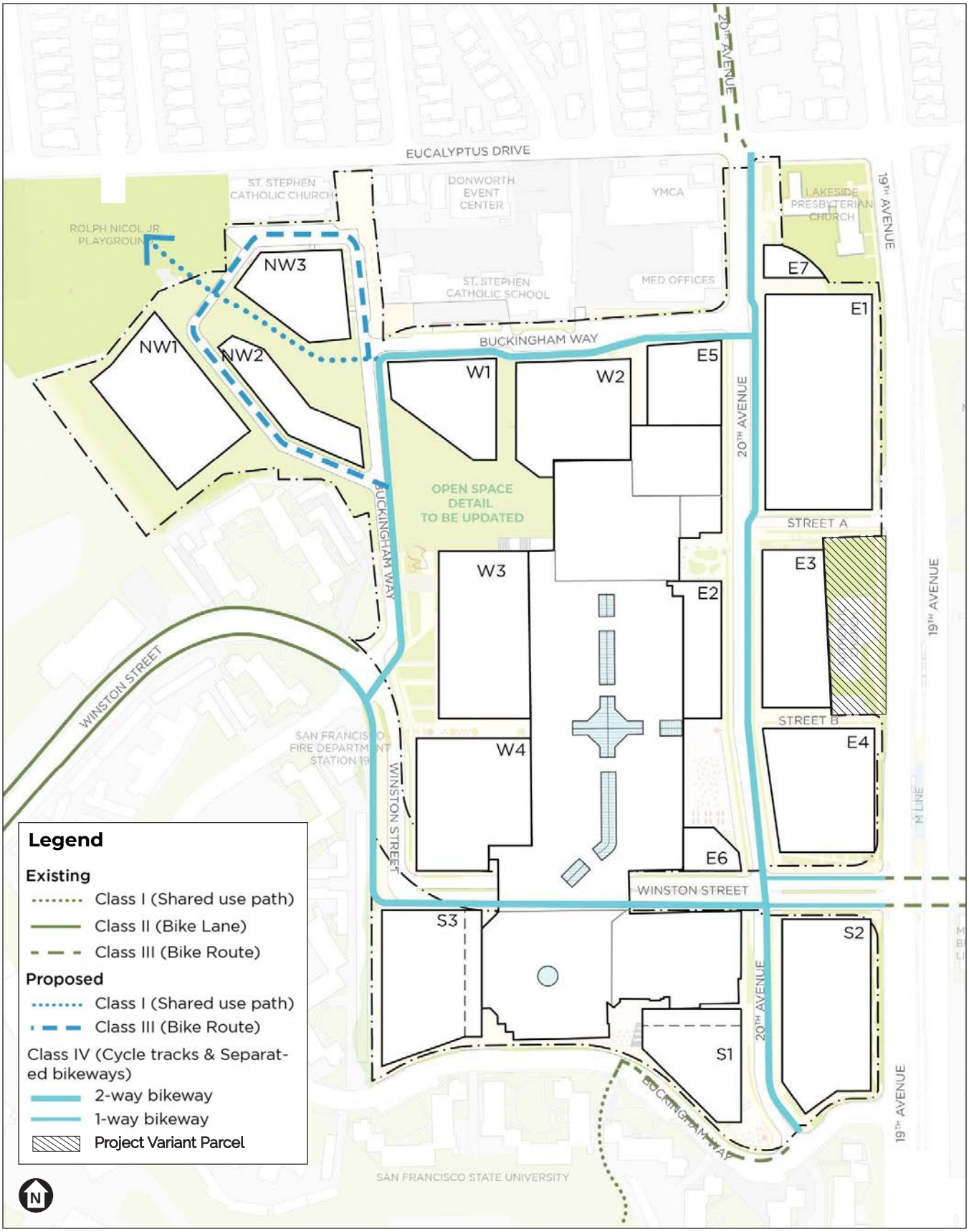
LOADING FEATURES

This analysis is based on assumptions for where potential loading spaces could be located (included in Appendix D.1, Travel Demand Memorandum).

TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

San Francisco Planning Code section 169 identifies the applicability of the Transportation Demand Management (TDM) Program and establishes the planning commission's TDM program standards for new development. The findings for Planning Code section 169 state: "For projects that use Development Agreements and may not be required to comply fully with the requirements of Section 169, it is the Board of Supervisors' strong preference that Development Agreements should include similar provisions that meet the goals of the TDM Program." Based on this, it is assumed the proposed project or variant would submit a TDM Plan, and the details of the TDM Plan would be determined in the Development Agreement. The TDM plan could include a variety of measures as outlined below.[93]

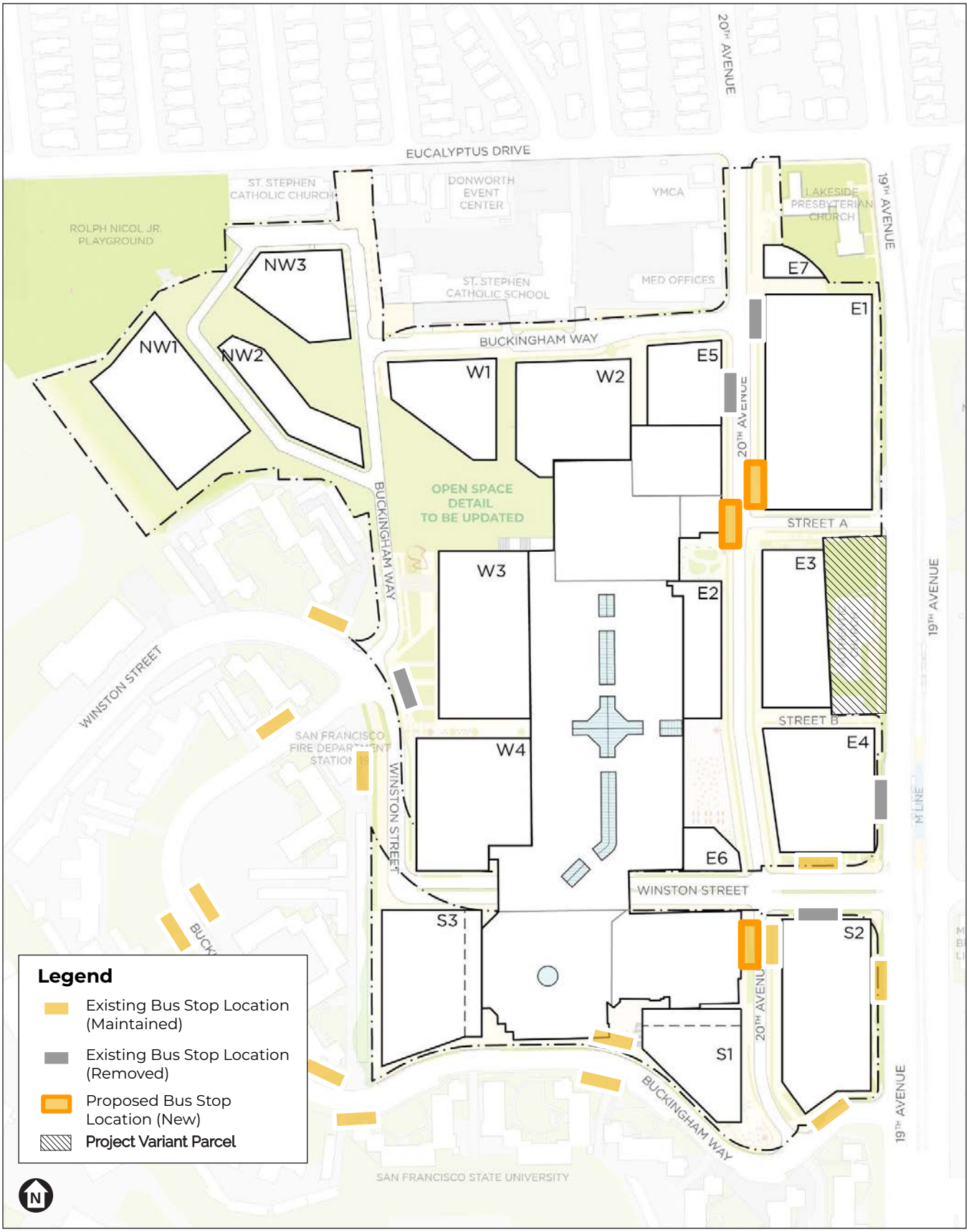
[93]The listed measures include parentheses that indicate the title of the measure in the TDM Program Standards (Version 3.0). San Francisco Planning Department, *Transportation Demand Management Program, August 2016*, updated March 2021, https://sfplanning.org/transportation-demand-management-program, accessed September 28, 2022.



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 3.B-5
PROPOSED BICYCLE CIRCULATION PLAN



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 3.B-6
PROPOSED BUS STOP RELOCATION

- Provide streetscape improvements such as wide sidewalks that encourage active transportation (ACTIVE-1)
- Provide secure and public bike parking (ACTIVE-2)
- Provide car-share parking spaces (CSHARE-1)
- Provide a secure location for package deliveries, such as a delivery room or package locker (DELIVERY-1)
- Provide an onsite childcare facility (FAMILY-2)
- Provide multimodal wayfinding signage in prominent locations (INFO-1)
- Include onsite affordable housing (LU-2)

It is also assumed the TDM Plan would be subject to monitoring, reporting, and compliance of the TDM Program to ensure that the TDM Plan is being implemented correctly.

IMPACT ANALYSIS METHODOLOGY

The following summarizes the methodology for analyzing transportation and circulation impacts and information considered in developing travel demand estimates for the proposed project or variant. In addition, the following summarizes the methodology for analyzing and any quantitative thresholds of significance for determining transportation impacts under existing plus project or existing plus variant conditions. The travel demand and impact analysis methodology uses the data and guidance within the planning department's SF transportation guidelines and the accompanying workbook that implements the SF transportation guidelines (SF Workbook). If the methodology differs than that in the guidelines, the following summarizes such differences.

The geographic scope of potential transportation impacts encompasses the transportation study area as defined in Section 3.B.2, Environmental Setting, p. 3.B-1. The transportation study area consists of travel corridors and facilities such as transit routes and stations, bicycle routes and amenities, pedestrian sidewalks, and crossings within the transportation study area. The transportation study area and 28 study intersections are shown in Figure 3.B-1, p. 3.B-2.

ANALYSIS PERIOD

In San Francisco, the weekday extended p.m. peak period (3 to 7 p.m.) is typically the period when the most overall person and vehicle trips happen. The analysis conducted focuses on a single peak hour within the extended p.m. peak period. For loading, the methodology uses the 11 a.m. to 2 p.m. period to assess commercial vehicle loading demand and 5 to 8 p.m. period to assess passenger vehicle loading demand.

As stated in the SF transportation guidelines, in some instances, the most overall travel may occur at different periods in existing conditions or as a result of the project. In these instances, the methodology may substantiate the use of periods in addition to or other than the weekday p.m. peak. Given the size and type of land uses proposed by the project or variant, as well as travel characteristics of the study area, a Sunday peak period analysis was considered. Roadway segment and intersection counts were collected on a Sunday to evaluate the need for an additional Sunday analysis period. After determining the Sunday peak hour, collecting Sunday peak hour travel data and calculating project-generated Sunday travel demand, the department determined that a Sunday peak hour analysis would not provide sufficiently distinct or more impactful results compared to a weekday p.m. peak hour analysis. More detail on these data and the decision rationale are included in Appendix D.2, Transit Analysis Memorandum.

Weekday a.m. peak period conditions were also considered for the proposed project or variant. However, as the SF transportation guidelines indicate, most overall travel within the city occurs within the extended weekday p.m. peak period with few notable exceptions (e.g., special events). The SF Transportation guidelines offer data that illustrate the point:

- The San Francisco County Congestion Management Program network transit and vehicular travel speeds are documented to be lower during the p.m. peak period than during the a.m. peak period.[94]
- Demand at transit stations is consistent and generally higher throughout the p.m. peak period relative the a.m. peak period.[95]
- The weekday peak period for for-hire vehicles occurs from 6:30 p.m. to 7p.m.[96]

The existing uses at the project site and for the proposed project and variant include a substantial share of retail land uses, many of which are typically not open during the weekday a.m. peak hour and do not produce or attract trips during that time. Therefore, an a.m. peak hour analysis was not conducted for the proposed project or variant, as such analysis would likely not reveal any new or more severe transportation and circulation impacts as compared to the weekday p.m. peak hour analysis.

Baseline and Environmental Setting

CEQA Guidelines section 15125 provides guidance for determining the environmental setting, which constitutes the baseline physical conditions for the analysis. On March 6, 2020, San Francisco Health Officer Tomas Aragon declared a public health emergency due to COVID-19 and subsequently enacted Health Orders to protect the public health. Health Order No. C19-07 (Stay Safer at Home) was originally issued March 16, 2020, as a Shelter in Place order, and has been amended several times as conditions changed and additional information and recommendations became available.

For this analysis, multimodal traffic counts collected in March 2022 were compared where available to counts taken in 2020 (prior to the onset of the COVID-19 pandemic). A comparison between the two sets of traffic volumes and using the measures available in the San Francisco County Transportation Authority's Congestion Tracker[97] showed the 2022 volumes to be a reasonable representation of baseline conditions. (More detail is provided in Appendix D.2, Transit Delay Analysis Memorandum). For the transit analysis, the baseline data reflects existing conditions prior to the COVID-19 pandemic (i.e., before March 2020), except for changes the SFMTA made to the 57 Parkmerced and 58 Lake Merced lines during the pandemic and anticipates keeping after the pandemic.

PROJECT TRAVEL DEMAND METHODOLOGY AND RESULTS

Project travel demand refers to the number, type, and common destinations of new trips that people would take to and from the project. This section summarizes the methodology and results contained Appendix D.1, Travel Demand Memorandum.

[94] San Francisco County Transportation Authority, *Congestion Management Program*, December 2015
[95] Metropolitan Transportation Commission, *Core Capacity Transit Study Briefing Book*, July 2016
[96] San Francisco County Transportation Authority, *TNCs Today: a Profile of San Francisco Transportation Network Company Activity*, June 2017
[97] SFMTA, *Covid-Era Congestion Tracker,* https://covid-congestion.sfcta.org/.

Project Trips

The methodology used to calculate trips generated by the proposed project or variant consists of four steps: (1) trip generation, (2) mode split, (3) common destinations, and (4) assignment. The following summarizes each of these steps, and Step 4 below describes adjustments made to the existing traffic volumes (previously described in Section 3.B.2 and Table 3.B-2, p. 3.B-5) to account for circulation changes associated with the proposed project or variant.

Step 1. Trip Generation

Trip generation is an estimation of the number of trips people would take to and from the project site, which include trips made by residents, employees, and visitors, referred to herein as person trips. Person trips do not consider method of travel; Step 2 addresses this differentiation. The demand was estimated for the proposed project and variant for weekday daily and weekday p.m. peak hour periods.

The SF transportation guidelines provide person trip rates for residential, retail, office, and hotel uses in the weekday daily and weekday p.m. peak hour use rates. An accompanying computational workbook (the "SF Workbook") provided by the department also includes trip generation rates, mode splits, and project trip distribution from the SF transportation guidelines. The SF transportation guidelines and SF Workbook do not include trip generation rates for institutional uses as included in the project description.[98] While the proposed project and variant do not include detailed information on the type and classification of institutional use that would be developed, the project sponsor has indicated that up to 15,000 square feet of the designated institutional use could be dedicated to childcare.

Therefore, the planning department determined that the institutional use component of the proposed project or variant would most appropriately be modeled as a combination of two land uses: 15,000 square feet of childcare and 38,000 square feet of retail. For the variant, an additional 10,000 square feet of institutional use was modeled as religious use to account for redevelopment of the Authentic Church site. The SF transportation guidelines' travel demand rates for retail are conservative (i.e., high-end) on a daily basis and on a weekday p.m. period basis to account for any subsequently designated institutional uses of the site. The SF transportation guidelines do not include trip generation rate estimates for childcare or religious uses, so published ITE trip generation rates were used for both. The travel demand memorandum (included as Appendix D.1) includes the rates used.

Table 3.B-8 shows the estimated number of project person trips for the proposed project or variant after applying person trip rates, accounting for the size and type of land use. The proposed project would generate 55,012 daily person trips for all land uses and 4,998 person trips in the weekday p.m. peak hour. The variant would generate 56,100 total daily person trips and 5,093 person trips in the weekday p.m. peak hour. The variant would generate 2 to 5 percent more person trips in all analysis periods, as detailed below:

- Daily (56,100 compared to 55,012 — 1,088 more trips)
- Weekday p.m. (5,093 compared to 4,998 — 95 more trips)

[98] Additionally, "non-retail sales and service use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102). This use was modeled using the SF transportation guidelines office rate data as the closest available land use categorization for trip generation, mode split, and commercial/freight and passenger loading demand calculations. The use was also modeled as office for internal trip capture (discussed in Step 2).

Table 3.B-8 Person-Trip Generation Estimates by Land Use

Land Use	Proposed Project				Variant			
	Daily	Weekday P.M. Peak Hour			Daily	Weekday P.M. Peak Hour		
		In	Out	Total		In	Out	Total
Residential	19,778	1,319	439	*1,758*	20,790	1,386	462	*1,848*
Non-Retail Sales and Service Use	3,140	48	232	*280*	3,140	48	232	*280*
Retail	24,000	1,037	1,123	*2,160*	24,000	1,037	1,123	*2,160*
Hotel	1,680	70	50	*120*	1,680	70	50	*120*
Institutional	5,700	246	267	*513*	5,700	246	267	*513*
Childcare	714	78	89	*167*	714	78	89	*167*
Religious Institution	—	—	—	—	76	2	3	*5*
Total	***55,012***	***2,798***	***2,200***	***4,998***	***56,100***	***2,867***	***2,226***	***5,093***

SOURCES: Transportation Impact Analysis Guidelines, 2019; San Francisco Travel Demand Workbook, 2018; ITE Trip Generation Manual, 11th Edition, 2021

Step 2. Mode Split

Mode split refers to the estimated way or method people travel (e.g., walking, bicycling, transit, etc.). Person trips generated as part of Step 1 were assigned to travel modes based on mode shares presented in the SF transportation guidelines and SF Workbook. **Table 3.B-9** provides the estimated percentage of weekday p.m. peak period project trips by different ways of travel. The percentages account for the geographic location of the project site and apply to both the proposed project and variant.

Table 3.B-9 Mode Split by Land Use

Mode	Residential	Non-Retail Sales and Service[a]	Retail	Hotel	Institutional	Childcare
Auto	39%	84%	54%	45%	54%	38%
Taxi/TNC	4%	2%	1%	7%	1%	3%
Transit	19%	4%	16%	1%	16%	18%
Walk	34%	7%	28%	46%	28%	37%
Bike	4%	1%	1%	0%	1%	4%
Total	***100%***	***98%***	***100%***	***99%***	***100%***	***100%***

SOURCES: Transportation Impact Analysis Guidelines, 2019; San Francisco Travel Demand Workbook, 2018; ITE Trip Generation Manual, 11th Edition, 2021

ABBREVIATION:

TNC = Transportation Network Company

NOTES:

Totals may not sum to 100% due to rounding at intermediate steps (percentage of each mode).

[a] The non-retail sales and service mode split numbers do not include private shuttles and have been redistributed among remaining modes to apportion the trips out of 100 percent. Institutional Mode Split refer retail land use mode split; Childcare mode split is referenced from Balboa Reservoir Transportation Impact Study, Travel Demand Memorandum, October 5, 2018.

Table 3.B-10 shows the person trip estimates and calculated vehicle trips based on average vehicle occupancy for each land use for the proposed project or variant during weekday p.m. peak hour. The person trips shown as "auto" person trips reflect the total number of persons traveling by automobile. Some automobile trips are made with multiple occupants, each of whom is making one person trip. Vehicle trips are calculated as the number of person trips made by automobile divided by the average vehicle occupancy (AVO). As a later step for vehicle trip assignment, the resulting taxi/TNC trip estimate is then multiplied by two to account for a driver's extra trip (leaving the site after a drop-off event or arriving at the site before a pick-up event). These estimates do not account for any internal trip capture (subsequently discussed and applied in later tables).

Table 3.B-10 Weekday P.M. Peak Hour Person-Trip Generation Estimates by Mode and Land Use

Mode	Residential	Non-Retail Sales and Service	Retail	Hotel	Institutional	Childcare	Religious Institution	Total
PROPOSED PROJECT								
Auto	684	236	1166	54	277	63	—	***2,480***
Taxi/TNC	62	7	30	8	7	5	—	***119***
Transit	334	12	346	1	82	30	—	***805***
Walk	603	19	605	55	144	62	—	***1,488***
Bike	75	6	13	2	3	7	—	***106***
Total Person Trips	***1,758***	***280***	***2,160***	***120***	***513***	***167***	***—***	***4,998***
Average Vehicle Occupancy	1.54	1.11	1.97	1.97	1.97	1.8	—	NA
Total Vehicle Trips	***481***	***217***	***611***	***32***	***145***	***38***	***—***	***1,524***
VARIANT								
Auto	719	236	1166	54	277	63	3	***2,518***
Taxi/TNC	65	7	30	8	7	5	0	***122***
Transit	351	12	346	1	82	30	1	***823***
Walk	634	19	605	55	144	62	1	***1,520***
Bike	79	6	13	2	3	7	0	***110***
Total Person Trips	***1,848***	***280***	***2,160***	***120***	***513***	***167***	***5***	***5,093***
Average Vehicle Occupancy	1.54	1.11	1.97	1.97	1.97	1.8	1.97	NA
Vehicle Trips	***505***	***217***	***611***	***32***	***145***	***38***	***2***	***1,550***

SOURCE: Transportation Impact Analysis Guidelines, 2019; San Francisco Travel Demand Workbook, 2018

ABBREVIATION:

— = not applicable

NOTE:

Vehicle trip total includes auto and taxi-TNC trips.

Internal Trip Capture

Internal trip capture describes the portion of trips generated by a mixed-use development that both begin and end within the development. These "internal" trips account for a portion of the total development's trip generation without using the external transportation network. As a result, mixed-use development with an internal circulation network like the proposed project and variant creates less demand on the external transportation network than single-use developments generating the same number of trips. The proposed project or variant would include a mix of different integrated, complementary, and interacting land uses such as residential, non-retail sales and service, retail, hotel, and institutional connected by internal walkways. Therefore, both would result in some level of internal trip capture. The existing development would likely complement the proposed project's mix of the land uses such that the extent of internal trip capture may be greater than presented in this analysis of the proposed project and variant.

In accordance with the SF transportation guidelines, appropriate refinements to the standard travel demand analysis approach have been made to account for the size and land use mix of the proposed project and variant. To better estimate trip-making patterns, a modified trip generation model specific to the proposed project and variant was developed using guidance from *National Cooperative Highway Research Program Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* (NCHRP Report 684).[99]

Internalization is dependent on the quantity and mix of uses as well as the varying levels of activity they generate at various times of the day. As a result, the internalization percentage is different between the project and variant and in each time period analyzed. The methodology used to establish internalization factors accounts for trips internal to the proposed project or variant that would still occur but would not be made by automobile or transit and would instead remain within the project site and would occur by walking or bicycling and via linked trips.

This analysis results in an internal vehicle trip capture rate of 21 percent (reduction of 327 vehicle trips). Internal transit trip reduction resulted in a weekday p.m. internal transit person trip capture rate of 28 percent (reduction of 228 transit person trips). The resulting internal trip capture and external vehicle and transit trips are presented in **Table 3.B-11**. Detailed internal trip capture calculations and a step-by-step approach are included in Appendix D.1, Travel Demand Memorandum.

Step 3. Common Destinations

Common destinations, also known as trip distribution, refers to the estimated number of trips people would take to (inbound) and from (outbound) the project site and another place (e.g., another neighborhood). Common destinations consist of eight San Francisco neighborhoods, East Bay, North Bay, and the South Bay. **Table 3.B-12**, p. 3.B-37, and **Figure 3.B-7**, p. 3.B-38, provide the estimated percentage of weekday p.m. peak period vehicle and transit trips to the common destinations. The percentages account for the geographic location of the project site and apply to both the proposed project and variant.

[99] Transportation Research Board, *National Cooperative Highway Research Program Report 684*, Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, 2011.

Table 3.B-11 Internal Trip Capture Reduction and Total External Transit and Vehicle Trips

Mode	Daily		P.M. Peak Hour	
	Total	In	Out	Total
PROJECT				
Vehicle Trips				
Vehicle Trips	17,811	798	726	***1,524***
Internal Vehicle Trip Reduction Percentage	17%	20%	23%	***21%***
Total External Vehicle Trips (Auto and Taxi/TNC)	14,865	637	561	***1,198***
Transit Trips				
Transit Person Trips	8,793	473	332	***805***
Internal Transit Trip Reduction Percentage	23%	23%	36%	***28%***
External Transit Trips	***6,741***	***364***	***213***	***577***
VARIANT				
Vehicle Trips				
Vehicle Trips	18,110	817	733	***1,550***
Internal Vehicle Trip Reduction Percentage	16%	20%	23%	***21%***
Total External Vehicle Trips (Auto and Taxi/TNC)	15,147	655	567	***1,221***
Transit Trips				
Transit Person Trips	8,997	485	338	***823***
Internal Transit Trip Reduction Percentage	23%	22%	36%	***28%***
External Transit Trips	***7,525***	***377***	***216***	***593***

SOURCE: NCHRP 8-51 Internal Trip Capture Estimation Tool, 2010

NOTE:

Totals may not sum due to rounding.

Step 4. Assignment

Assignment refers to the assignment of vehicle and transit trips to specific streets or transit lines between the trip origin and destination. To understand project trip access to and from the project site given the project size and various access points and to assign trips to origins and destinations within the project site, it is necessary to estimate the external trip generation on a parcel-by-parcel basis. In other words, the aggregate travel demand numbers presented in Table 3.B-11, p. 3.B-36, are split up to represent the seventeen proposed buildings and parking lots that form trip origins and destinations within the project site.

Trips were allocated based on proportional allocation of land use square footage within the project site and the taxi/TNC drivers' "extra" trips (leaving the project site after dropping-off a passenger or arriving at the project site before pick-up a passenger) are added in this step. Vehicle and transit trip distribution by parcel is presented in Appendix D.1, Travel Demand Memorandum.

Table 3.B-12 Project or Variant Vehicle and Transit Trip Distribution

	Proposed Project or Variant			
	Vehicle Trip Distribution		Transit Trip Distribution	
Origin/Destination	Inbound	Outbound	Inbound	Outbound
Downtown/North Beach	7%	5%	12%	22%
South of Market (SoMa)	2%	1%	3%	22%
Marina/Western Market	6%	6%	8%	5%
Mission/Potrero	5%	5%	33%	3%
Outer Mission/Hills	17%	23%	6%	6%
Bayshore	9%	9%	6%	6%
Richmond	4%	3%	3%	6%
Sunset	29%	21%	7%	9%
Islands	0%	0%	0%	0%
South Bay	18%	19%	7%	3%
East Bay	4%	5%	15%	17%
North Bay	2%	3%	0%	0%
Total	***100%***	***100%***	***100%***	***100%***

SOURCE: Transportation Impact Analysis Guidelines, 2019; San Francisco Travel Demand Workbook, 2018

From the district-level vehicle distribution, vehicle trips were then assigned to study area intersections based on logical routes to and from the project site. The trip assignment accounts for clearly optimal routes (most direct and quickest) but includes alternate routes where reasonably competitive alternatives are available. The assignment assumes that most of the trips are likely to use the most optimal route, but that there will be some portion of drivers who take different local routes to and from the project (i.e., not all drivers take exactly the same route). **Figure 3.B-8**, p. 3.B-39, illustrates the routes and the percentage of trips estimated to arrive from those routes to get to and from origins and destinations. From this level of distribution, project vehicle trips were assigned logical routes to and from project site parcels taking into account proposed travel turns and the location of proposed access points for each parcel (as shown in Figure 2-12, p. 2-23, and Figure 2-13, p. 2-23).

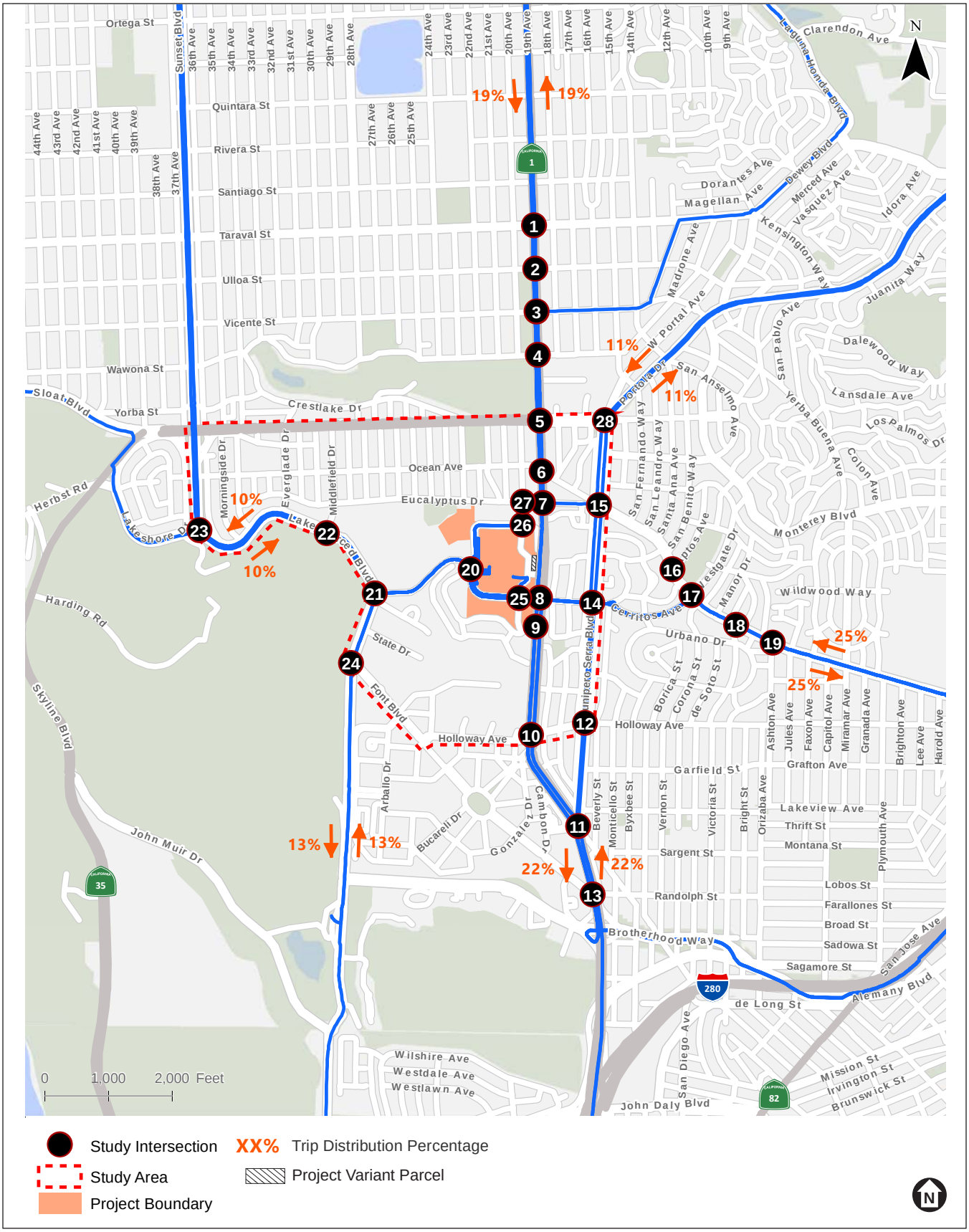
The project vehicle trips were then added to existing intersection volumes for each analysis period (which reflect vehicle trips associated with the existing retail uses on the project site). First, existing traffic counts at the study intersections were adjusted to account for proposed changes and resulting altered driving routes to, from, and within the project. The rerouting analysis eliminated turning movements that are proposed to be restricted with the proposed project or variant and assigned those trips through the analysis network logically. This included:

- Removing southbound left turns at 20th Avenue/Winston Drive and rerouting corresponding trips to 19th Avenue from the proposed new connection to 19th Avenue. The reroute also reassigned these trips at the corresponding intersections based on judgments about their origins and destinations from existing trip distributions.

SOURCE: Kittelson & Associates, 2022

Stonestown Development Project

FIGURE 3.B-7
PROJECT VEHICLE AND TRANSIT TRIP DISTRIBUTION



SOURCE: Kittelson & Associates, 2022

Stonestown Development Project

FIGURE 3.B-8

VEHICLE TRIP ASSIGNMENT IN THE PROJECT VICINITY

- Removing any trips traveling eastbound from 20th Avenue along Buckingham Way North and rerouting corresponding trips through the project site based on judgments about their origins and destinations from existing trip distributions.

As previously mentioned, the taxi/TNC trips were multiplied by two to account for separate vehicle trips both to and from a site (one as the vehicle arrives, and one as the vehicle departs). The methodology assigned the taxi/TNC vehicle trips to the nearest study intersection(s) to reflect logical routes for these trips.

Vehicle trips associated with the existing retail uses on the project site are reflected in existing traffic volumes. The project trip assignment includes adjustments to those trips to reflect some changes in entering/exiting routes based on increased project vehicle volumes and to comply with proposed turn restrictions (details are included in Appendix D.1, Travel Demand Memorandum).

Loading Demand

Loading demand consists of the estimated number of project delivery/service vehicle and passenger vehicle pick-up/drop-off trips. Loading demand rates, accounting for the size and type of land uses were applied to estimate the freight and passenger loading demand. **Table 3.B-13** presents daily, average, and peak hour demand for delivery/service vehicles and peak hour for passenger vehicles. The SF transportation guidelines do not provide weekend loading rates, so no distinction was made between weekend and weekday freight and passenger loading demand. This analysis combined religious use, childcare, and other institutional uses into a single land use category using the rate for institutional uses with the highest published trip generation rate among the three for a conservative approach. The passenger loading demand for institutional uses was estimated by using the average of residential and retail consistent with department practice. The proposed institutional use was assumed to have a 15,000-square-foot childcare facility and supplementary guidance from the department was applied to estimate childcare passenger loading demand. Childcare and religious institutions are included within institutional land use for freight loading demand because their demands are unique only for passenger loading. That guidance is included in Appendix D.1, Travel Demand Memorandum, and includes a 3-minute passenger loading duration.[100] The childcare facility is assumed to be operational during the weekdays only. As shown in Table 3.B-13, the proposed project would generate 188 daily freight vehicle trips, and the variant would generate 192 daily freight vehicle trips. The proposed project would generate demand for 36 spaces in the weekday peak hour for freight delivery, and the variant would generate demand for 38 spaces in the weekday peak hour for freight delivery.

As shown in Table 3.B-13, the proposed project or variant would generate a demand for 50 passenger loading spaces during the peak one minute of the peak 15-minute period of loading demand.

CONSTRUCTION IMPACT ANALYSIS METHODOLOGY

The analysis for addressing project construction impacts uses preliminary project construction information provided by the project sponsor. The evaluation addresses the staging and duration of construction activities, estimated daily worker and truck trips, truck routes, roadway and/or sidewalk closures, and evaluates the effects of construction activities on people walking, bicycling, or driving, and riding public transit and emergency vehicle operators.

[100] Lana Russell, Senior Environmental Planner, San Francisco Planning Department, e-mail correspondence to the Environmental Planning Division, Transportation Review for Child Care – Latest Guidance, March 1, 2018.

Table 3.B-13 Freight and Passenger Loading Demand by Land Use

Land Use	Project				Variant			
	Freight Loading Demand (spaces)			Peak Hour Passenger Loading Demand (spaces, rounded)	Freight Loading Demand (spaces)			Peak Hour Passenger Loading Demand (spaces, rounded)
	Daily	Average Hour	Peak Hour		Daily	Average Hour	Peak Hour	
Residential	94	13	13	13	97	13	13	13
Non-Retail Sales and Service	43	5	5	5	43	59	5	5
Retail	36	11	11	11	36	11	11	11
Hotel	9	1	1	1	9	1	3	1
Institutional	6	6	6	5	7	6	6	4
Childcare	—	—	—	15	—	—	—	15
Religious Institution	—	—	—	—	—	—	—	1
Total	***188***	***36***	***36***	***50***	***192***	***36***	***38***	***50***

SOURCES: Transportation Impact Analysis Guidelines, 2019; San Francisco Travel Demand Workbook, 2018

NOTES:

Freight loading demand is presented as the number of delivery/service vehicle trips per time period by parcel for each land use and then summed together. The peak period of freight loading demand typically occurs between 10 a.m. and 1 p.m. and does not coincide with the weekday a.m. and p.m. peak periods. Freight Loading Demand Equation: Daily Trips = (SF/ 1,000) * R; Average Hour = (SF / 1,000) * R / 9 / 2.4; Peak Hour = (GSF / 1,000) * (R * 1.25) / 9 / 2.4. Freight loading demand is calculated by parcel for each land use and then summed together.

Passenger loading demand is presented as the passenger loading trips estimated to occur during the peak one minute of the peak 15-minute period of loading demand. The peak period of passenger loading demand occurs during the extended weekday p.m. peak period (3 p.m. to 7 p.m.).

OPERATIONAL IMPACT ANALYSIS METHODOLOGY

The following describes the methodology for analysis of operational impacts, by significance criterion.

POTENTIALLY HAZARDOUS CONDITIONS

A "hazard" refers to a project generated vehicle potentially colliding with a person walking, bicycling, or driving or public transit vehicle that could cause serious or fatal physical injury, accounting for the aspects described below. Human error or non-compliance with laws, weather conditions, time-of-day, and other factors can affect whether a collision could occur. However, for purposes of CEQA, hazards refer to engineering aspects of a project (e.g., speed, turning movements, complex designs, substantial distance between street crossings, sight lines) that may cause a greater risk of collisions that result in serious or fatal physical injury than a typical project. This analysis focuses on hazards that could reasonably stem from the project itself, beyond collisions that may result from aforementioned non-engineering aspects or the transportation system as a whole. This methodology is consistent with Caltrans' Interim Safety Review Practitioners Guidance (December 2020) for the factors to potential include in the analysis, such as conflict points, changes in traffic composition, and increased vehicular speed (p. 5).

Therefore, the methodology qualitatively addresses the potential for the proposed project or variant to exacerbate an existing or create a new potentially hazardous condition to people walking, bicycling, or driving, or public transit operations. The methodology accounts for the amount, movement type, sightlines, and speed of project vehicle trips and project changes to the public right-of-way in relation to the presence of people walking, bicycling, or driving or public transit vehicle. Additionally, an evaluation of vehicle volumes and 95th percentile queues was conducted at project study intersections that provide access between the project and surrounding roadway network to assess potential of the project or variant to create potentially hazardous conditions for people walking, bicycling, driving, or public transit operations.

ACCESSIBILITY

The methodology qualitatively addresses the potential for the project or variant to interfere with the accessibility of people walking or bicycling or results in inadequate emergency access. The methodology accounts for the amount, movement type, sightlines, and speed of project vehicle trips and project changes to the public right-of-way in relation to the presence of people walking and bicycling or emergency service operator facilities.

PUBLIC TRANSIT DELAY

The department uses a quantitative threshold of significance and qualitative criteria to determine whether the project or variant would substantially delay public transit. For individual Muni lines, if the project or variant would result in transit delay greater than equal to four minutes or one-half headway, whichever is less, then it might result in a significant impact. For individual Muni routes or corridors with headways less than eight minutes, the department uses a one-half headway threshold. For example, for a bus route or corridor with a headway of six minutes, the threshold would be half of six minutes, which is three minutes. Should a project result in transit delay of three minutes or more, then it might result in a significant impact. As described in Section 3.B.2, Environmental Setting, one transit route (SamTrans Route 122) operated by SamTrans (a regional agency) has characteristics similar to a local transit route than a regional transit route; therefore, it was evaluated using the same one-half headway or 4-minute threshold described above for individual Muni lines.

The department considers the following qualitative criteria for determining whether that delay would result in significant impacts due to a substantial number of people riding transit switching to riding in private or for-hire vehicles: transit service headways and ridership, origins and destinations of trips, availability of other transit and modes, and competitiveness with private vehicles.

The transit delay analysis assesses and reports p.m. peak hour transit delay for the following Muni transit routes operating within the project study area and, in some cases, through the project site: 18-46th Avenue, 28-19th Avenue, 28R-19th Avenue Rapid, 29-Sunset, 57-Parkmerced, and 58-Lake Merced, KT-K Ingleside-T Third Street, M-Ocean View, and regional SamTrans Route 122. The analysis uses the following three factors:

- **Traffic congestion delay**—Increased vehicle traffic slowing transit vehicles and increasing transit travel times between stops (relevant when public transit vehicles share travel lanes with private vehicles or private vehicles block intersections or result in longer traffic signal phases to accommodate their movements). The analysis uses PTV Vistro modeling software to calculate traffic congestion delays along corridors served by transit.
- **Transit reentry delay**—Delays after stopping to pick up and drop off passengers when transit vehicles must wait for gaps in adjacent street traffic to pull out of stops. As traffic volumes on streets increase,

transit vehicles experience increased delays as it becomes more challenging for them to reenter the flow of traffic. The methodology uses empirical data from the 2000 Highway Capacity Manual to calculate transit reentry delay caused by the project by summing the transit reentry delay at each stop within the study area, depending on the adjacent lane traffic volumes.

- **Passenger boarding delay**—The amount of time a transit vehicle has to stop to pick up and drop off passengers (i.e., the transit vehicle dwell time) is correlated to the number of passengers boarding the vehicle. As general transit ridership grows, vehicles spend more time at stops, which increases transit travel times. The analysis uses empirical data to calculate passenger boarding delay caused by the project by multiplying the total number of project transit trips on each route by two seconds of delay.

VMT ANALYSIS

Land Use Components

The department uses the following quantitative thresholds of significance to determine whether the project or variant would generate substantial additional VMT:

- For residential projects, if it exceeds the regional household VMT per capita minus 15 percent.
- For office projects, if it exceeds the regional VMT per employee minus 15 percent.
- For retail projects, if it exceeds the regional VMT per retail employee minus 15 percent.
- For mixed-use projects, evaluate each land use independently, per the thresholds of significance described above.

The department uses VMT efficiency metrics (per capita or per employee) for thresholds of significance. VMT per capita reductions mean that individuals will, on average, travel less by automobile than previously but, because the population will continue to grow, it may not mean an overall reduction in the number of miles driven.

The department uses a map-based screening criterion to identify types and locations of land use projects that would not exceed these quantitative thresholds of significance. The San Francisco County Transportation Authority uses a travel demand model to present VMT for residential, office, and retail in San Francisco and the region, as described and shown under existing conditions. The department uses that data and associated maps to determine whether a project site's location is below the aforementioned VMT quantitative threshold of significance. Childcare and non-retail sales and service are treated as office for screening and analysis.[101] Given parking supply's influence on VMT, the department also considers a project's parking supply in determining if the map-based screening criterion is valid for the project or if a more detailed VMT analysis is required.

Further, the department presumes residential, retail, and office projects, and projects that are a mix of these uses, proposed within 0.5 mile of an existing major transit stop (as defined by CEQA section 21064.3) or an existing stop along a high quality transit corridor (as defined by CEQA section 21155) would not exceed these quantitative thresholds of significance. However, this presumption would not apply if the project would (1) have a floor area ratio of less than 0.75; (2) include more parking for use by residents, customers, or

[101] San Francisco Planning Department, *Transportation Impact Analysis Guidelines*, February 2019, Appendix L, Vehicle Miles Traveled/Induced Automobile Travel Memorandum, Attachment A-1, p. L-16.

employees of the project than required or allowed, without a conditional use; or (3) is inconsistent with the applicable Sustainable Communities Strategy.[102]

Transportation Components

The department uses the following quantitative threshold of significance and screening criteria to determine whether transportation projects may substantially induce additional automobile travel: 2,075,220 VMT per year. This threshold is based on the fair share VMT allocated to transportation projects required to achieve California's long-term greenhouse gas emissions reduction goal of 40 percent below 1990 levels by 2030.

The department uses a list of transportation components that would not exceed this quantitative threshold of significance. If a project fits within the general types of projects (including combinations of types) listed below, then the department presumes that VMT impacts would be less than significant:

- Active Transportation, Rightsizing, and Transit Projects:
  - Reduction in number of through lanes
  - Infrastructure projects, including safety and accessibility improvements for people walking or bicycling
  - Installation or reconfiguration of traffic calming devices
  - Creation of new or addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for people walking, bicycling, and, if applicable, riding transit
- Other Minor Transportation Projects:
  - Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or emergency breakdown lanes that are not used as through lanes
  - Conversion of existing general purpose lanes (including vehicle ramps) to managed lanes (e.g., high occupancy vehicle (HOV), high occupancy toll (HOT), or trucks) or transit lanes
  - Timing of signals to optimize vehicle, bicycle, or pedestrian flow on local or collector streets
  - Addition of transportation wayfinding signage

FREIGHT AND PASSENGER LOADING

The analysis assesses the potential for convenient off- and on-street freight and passenger loading facilities to meet the proposed project's or variant's loading demand during the average peak period. For the purposes of this section, convenient refers to facilities within 250 feet of the project site.

If convenient loading facilities meet the estimated demand, the analysis is complete. If convenient loading facilities do not meet the demand, then the methodology qualitatively addresses the potential for the project or variant to exacerbate an existing or create a new potentially hazardous condition to people walking, bicycling, or driving or substantially delay public transit.

[102]The department considers a project to be inconsistent with the Sustainable Communities Strategy if the project is located outside of areas contemplated for development in the Sustainable Communities Strategy.

PARKING

California Senate Bill (SB) 743 amended CEQA by adding section 21099 regarding the analysis of parking impacts for certain urban infill projects in transit priority areas.64 Section 21099(d), effective January 1, 2014, provides that "… parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment." Accordingly, parking is no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all three criteria established in the statute.

The SF transportation guidelines include a screening criterion for development projects to determine if a proposed project would result in a substantial parking deficit that could result in secondary effects.[103] Development projects located within the department's map-based screening area for the VMT analysis would not create a substantial vehicle parking deficit.

Appendix D.1, Travel Demand Memorandum, includes an attached checklist that demonstrates the proposed project or variant meets the screening criterion and is therefore not subject to further parking analysis under CEQA.

CUMULATIVE CONDITIONS

The discussion of cumulative transportation impacts assesses whether the proposed project or variant, in conjunction with overall citywide growth and other cumulative projects, would significantly affect the transportation network and, if so, whether the proposed project's or variant's contribution to the cumulative impact would be considerable. The following summarizes future year modeling (projections-based approach) and reasonably foreseeable projects relevant to particular transportation topics (list-based approach). In addition, the following summarizes differences between existing plus project and these future year conditions regarding the methodology for analyzing and any quantitative thresholds of significance for determining transportation impacts.

2050 MODELING (PROJECTIONS)

The cumulative conditions analysis incorporates data and forecasts from the SF-CHAMP outputs in the analysis of VMT and transit impacts, and to a lesser extent, potentially hazardous conditions and accessibility impacts. The model is an activity-based travel demand model that the transportation authority calibrates to represent future transportation conditions in San Francisco, accounting for assumptions regarding reasonably foreseeable infrastructure projects and population growth. Inputs to the model include:

- Infrastructure projects listed in Plan Bay Area 2050 (2021)
- Infrastructure projects listed in San Francisco's Countywide Transportation Plan, Capital Plan, or a San Francisco agency's (e.g., SFMTA) Capital Improvement Program
- Infrastructure, private development, or area plan projects actively undergoing environmental review, recently completed environmental review, or the department anticipates undertaking environmental review in the near future because they have received sufficient project definition
- Land use growth based upon estimates of projections developed in preparation of Housing Element Update, including at the project site, Park Merced, and other projects in the surrounding areas

[103] San Francisco Planning Department, *Transportation Impact Analysis Guidelines*, October 2019, Appendix O, Vehicular Parking, p. O-4.

The cumulative conditions analysis reflects the effects of several other major projects that are citywide or regional in scope, even though they would not directly affect the transportation network in the vicinity of the project site. Projects such as Geary Corridor Bus Rapid Transit, the Caltrain Modernization Program (CalMod), expanded ferry service from Water Emergency Transportation Authority, and various capacity upgrades to BART—including the Train Control Modernization Program (TCMP) and new Fleet of the Future rolling stock—would affect transit service (and capacity) and have been accounted for in the SF-CHAMP model runs conducted for the Housing Element Update and used to analyze cumulative transportation and circulation conditions for the proposed project or variant.

2050 cumulative projections have been modeled for the San Francisco Planning Department's Housing Element 2022 Draft Environmental Impact Report (Housing Element DEIR). 2020 baseline volumes and 2050 Proposed Action (i.e., Housing Element Update) scenario SF-CHAMP modeled link volumes were compared and a *Furnessing* method[104] was applied to existing turning movement volumes to develop appropriate cumulative turning movement count estimates.

Travel models provide an estimate of future travel volumes on the roadway network but may not precisely reflect turning intersection-level turning movement changes resulting from large land use and circulation changes like the proposed project or variant. Therefore, the resulting forecast cumulative volumes were adjusted upwards in the immediate vicinity of the project site to reflect proposed project or variant trips, routes, and turn restrictions so that the cumulative scenario volumes incorporated anticipated turning movements related to project site access. The cumulative analysis similarly reflects reasonably foreseeable future roadway network changes as included in the Housing Element DEIR technical analysis to the extent information was available. Appendix D.2, the transit delay analysis memo, shows the assumed roadway network changes for all intersections analyzed in cumulative analysis.

Ridership and capacity forecast estimates from the for the KT K Ingleside-T Third Street and M Ocean View routes from the Housing Element DEIR for use in cumulative ridership and capacity analysis. The cumulative conditions assume the KT K Ingleside-T Third Street have been unlined, so that the line that currently operates on this route will be the K Ingleside, and the T Third Street will be the Central Subway alignment (i.e., not in the project study area).

FUTURE PROJECTS (LIST-BASED)

The project site is not located within the boundaries of any active area plans. There are a few active development and transportation projects in the vicinity of the project site in various stages of planning, design, or construction. The geographic context for the analysis of cumulative transportation impacts generally includes the sidewalks and roadways adjacent to the project site, and the local roadway and transit network in the vicinity of the project site. The discussion of cumulative transportation impacts assesses the degree to which the proposed project or variant would affect the transportation network in conjunction with overall citywide growth and other reasonably foreseeable future projects. The following describes reasonably foreseeable land development and transportation projects that the analysis uses to assess cumulative impacts for operational impacts including potentially hazardous conditions, accessibility, and public transit delay.

[104] CHAMP model volumes include the amount of traffic between two roadway intersections. A *Furness* process balances these roadway segment volumes between adjacent intersections to determine turning movements at each roadway intersection.

Development

Cumulative projects within a 0.50-mile radius of the project site include 460 West Portal Avenue, Parkmerced, San Francisco State University (SFSU) Future State 2035, and are described in Table 3-1, p. 3-7. These projects are either currently under review by the planning department or a building permit is on file or approved by the San Francisco Department of Building Inspection.

In addition to the land use projects listed above, the cumulative transportation impact analysis includes forecasted growth in jobs and employment in San Francisco by the year 2050. The model includes a comprehensive projection of growth based on known and forecast development, including growth under the housing element.

Future 2050 Transportation Network Changes

The cumulative conditions analysis also considers the effects of foreseeable changes to the transportation network, which include the Lake Merced Pedestrian Safety Project described in Table 3-1, p. 3-7, and two additional projects:

- **Ocean Avenue Mobility Plan.**[105] The goal of the Ocean Avenue Mobility Plan is to identify funding and implementation strategies for already identified improvements, develop new concepts, and prioritize improvements for project delivery. Large-scale improvements may include multi-block projects like protected bike lanes or reconfiguration of the Ocean Avenue/Geneva Avenue/Frida Kahlo Way intersection. The plan is scheduled to conclude in spring 2023.
- **19th Avenue Rapid Project.**[106] This project is part of Muni Forward. SFMTA would implement transit priority and pedestrian safety improvements along the 28 19th Avenue and 28R 19th Avenue Rapid route that will make it safer to walk and increase the reliability of transit service. The project includes sidewalk widening and bus stop consolidation and optimization. Construction is ongoing and is expected to conclude in 2023.

Although the cumulative conditions do include the expected growth in travel demand associated with the nearby Parkmerced project, they do not include the transportation infrastructure changes included in its transportation plan.[107] Those changes are subject to coordination with, and approval from the City and are not automatically assumed to occur. The proposed changes (which were not modeled as part of this analysis) include:

- Study intersection #10 19th Avenue/Holloway Drive: Add additional southbound through lane.
- Study intersection #11 Junipero Serra Boulevard/19th Avenue: Add additional southbound through lane and northbound left-turn lane.
- Study intersection #13 Junipero Serra Boulevard/Font Drive: Add traffic signal and dedicated northbound left-turn lane.

[105] SFCTA, Ocean Avenue Mobility Plan website, https://www.sfcta.org/projects/ocean-avenue-mobility-action-plan#panel-public-engagement, accessed September 1, 2022.
[106] 28 19th Avenue Rapid Project website, https://www.sfmta.com/projects/28-19th-avenue-rapid-project, accessed September 1, 2022.
[107] SFMTA, *Parkmerced Project*, https://www.sfmta.com/projects/parkmerced-project, accessed September 1, 2022.

For informational purposes as it outside the transportation study area, the ConnectSF *Streets and Freeways Strategy Report* identifies potential concepts to reconnect communities and repair past harms.[108] These concepts include recommendations for streets and freeways that may provide regional access to and from the project site, such as along Brotherhood Way/Alemany Boulevard/Sagamore Street and the off- and on-ramps near I-280 and Ocean Avenue.

CONSTRUCTION IMPACTS

The analysis for addressing project or variant construction impacts uses the same methodology as described above for existing plus project conditions.

OPERATIONAL IMPACTS

The analysis for addressing potentially hazardous conditions uses the 2050 modeling of traffic volumes and the list-based projects. The following describes the methodology for cumulative analysis of operational impacts, by significance criterion. If the combined projects would result in a significant cumulative impact, the 2050 cumulative conditions assess the project's or variant's contribution to that impact.

Potentially Hazardous Conditions

The evaluation uses the same methodology as described above for existing plus project conditions.

Accessibility

The evaluation uses the same methodology as described above for existing plus project conditions.

Public Transit Delay

The analysis for addressing potentially hazardous conditions uses the 2050 modeling of traffic volumes and the list-based projects. The evaluation uses the same quantitative threshold of significance and qualitative criteria as described above for existing plus project conditions. It first assesses if the cumulative traffic volumes result in a level of transit delay resulting in a significant impact and, if so, whether the project or variant contribute considerably to the impact.

VMT Analysis

VMT by its nature is largely a cumulative impact. The number and distance of vehicular trips associated with past, present, and future projects might cause contribute to the secondary physical environmental impacts associated with VMT. It is likely that no single project by itself would be sufficient in size to prevent the region or state in meeting its VMT reduction goals. Instead, a project's individual VMT contributes to cumulative VMT impacts. The department uses existing plus project-level thresholds of significance based on levels at which the department does not anticipate new projects to conflict with state and regional long-term greenhouse gas emission reduction targets and statewide VMT per capita reduction targets.

Therefore, the department uses a map-based screening criterion to identify types and locations of land use projects that would not exceed the same quantitative thresholds of significance described under existing plus project conditions. The analysis uses the 2050 modeling of VMT estimates to present VMT for residential,

[108] ConnectSF is a multi-agency process to build an effective, equitable, and sustainable transportation system for San Francisco's future. ConnectSF will identify potential transportation infrastructure investments and policies needed to meet the city's continued growth equitably and sustainably over the next 30 to 50 years. The *Streets and Freeways* report is available online at https://connectsf.org/wp-content/uploads/FINAL_SFS_Report.pdf.

office, and retail in San Francisco and the region. The department uses that data and associated maps to determine whether a project site's location is below the aforementioned VMT quantitative threshold of significance, including for the other land use types described above. Childcare and non-retail sales and service are treated as office use for purposes of screening and analysis.

Loading

The evaluation uses the same methodology as described above for existing plus project conditions.

IMPACT EVALUATION

Impact TR-1: Construction of the proposed project or variant would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, driving, or public transit operations; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit. ***(Less than Significant with Mitigation)***

SUMMARY OF TYPICAL CONSTRUCTION ACTIVITIES FOR DEVELOPMENT PROJECTS AND CITY CONSTRUCTION REQUIREMENTS CONSIDERED IN THE ANALYSIS

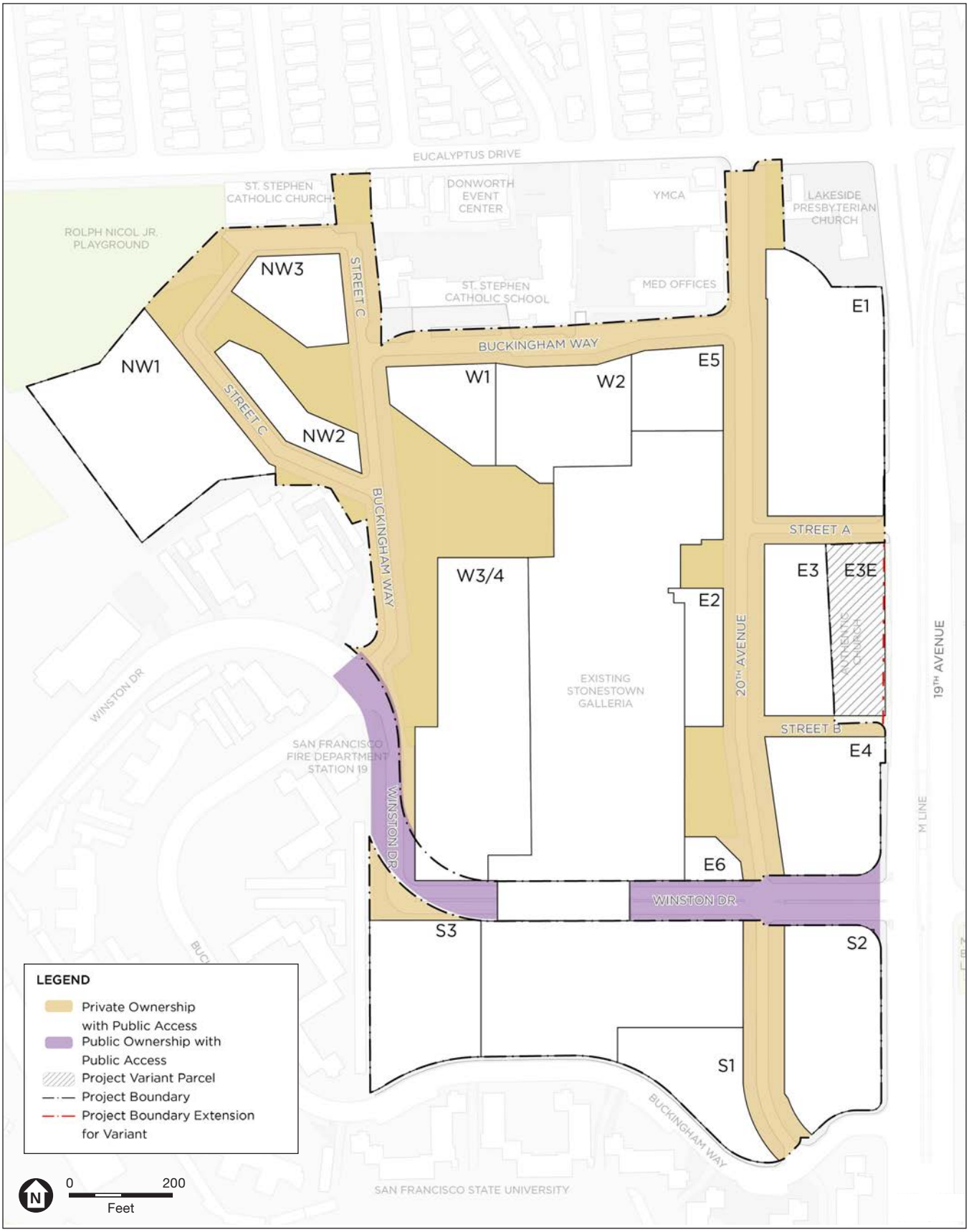
Portions of the proposed project or variant roadway network modifications are within the public right-of-way and other portions are privately owned (as shown in **Figure 3.B-9**). The analysis for the portions within the public right-of-way is provided below; analysis for the privately-owned portions are included in a separate subsection that follows.

Construction activities within the public right-of-way are required to be conducted in accordance with the SFMTA blue book, San Francisco Transportation Code (transportation code), San Francisco Public Works Code (public works code), and San Francisco Public Works Orders (public works orders), as applicable, to minimize the potential for hazardous conditions and to help ensure safe travel in and around the site. The proposed project or variant construction activities would not constitute a permanent condition, because they would be limited to the phased construction of the project, conservatively estimated to be eight years for the purposes of this EIR. Construction would be required to comply with the City requirements discussed below such that the construction of the project or variant would not result in substantial interference with pedestrians, bicyclists, transit, or vehicle circulation or result in potentially hazardous conditions for pedestrians, bicycles, transit, or vehicles, as discussed below.

CONSTRUCTION DURATION AND INTENSITY

The proposed project or variant is conservatively assumed to be built out over eight years in six overlapping phases, which is the fastest potential period over which the proposed project or variant could be constructed. The construction phasing is shown in Figure 2-20, p. 2-41. Each construction phase would have a duration of between approximately 2.5 years to four years, and most construction vehicle staging and construction activity would be contained on the project site.

Preliminary construction information has been developed by the project sponsor for the purpose of environmental review and is conservative because if construction occurs over a longer timeframe, construction worker trips and average daily trips could be less than those estimated in this analysis. The preliminary construction information is subject to change once construction-level plans are available and



SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 3.B-9
PUBLIC AND PRIVATE RIGHTS-OF-WAY

the construction logistics are reviewed by City agencies. The project sponsor would be required to comply with city regulations described above during all phases of project construction. **Table 3.B-14** provides the anticipated duration for each of the six major phases of construction the minimum and maximum numbers of daily worker trips, and the average number of daily construction truck trips during subphases for which trucks are involved (demolition, grading, shoring, excavating, building construction, and paving). Due to overlaps between phases, the total daily trips (presented as one-way totals) of all phases are higher than trips of individual phases and are presented at the end of the table. The maximum amount of phase overlap results in a maximum of up to 1,723 construction worker trips, as the table shows. Truck travel to and from the site would fluctuate within each phase based on the needs of the overlapping construction subphases, but Table 3.B-14 provides an overall average number of daily truck trips for the project.

Table 3.B-14 Construction Activity by Phase

Project Phase/Elements	Duration	Construction Workers Trips		Average Daily Truck Trips
		Minimum	Maximum	
1 and 1B – Blocks NW1, NW2, NW3, W2	45 months	8	432	10
2 – Blocks W1, W3/4	44 months	8	745	17
3 – Blocks E1, E5	28 months	8	437	9
4 – Blocks E2, E3, E4, E6	44 months	8	583	10
4 (Variant) – Blocks E2, E3, E3E, E4, E6	44 months	8	731	13
5 – Blocks S1, S2	43 months	8	542	16
6 – Block S3	36 months	9	182	4
Total	***96 months***	***8***	***1,723***	***28***

SOURCE: Environmental Science Associates and Ramboll, 2022

NOTE:

The total represents the duration and trips of the entire project, accounting for phase overlaps.

POTENTIALLY HAZARDOUS CONDITIONS AND ACCESSIBILITY DURING CONSTRUCTION

Because project construction activities would occur over the course of six overlapping phases which are subdivided on the project site, construction staging would largely occur onsite. Further, the overlapping construction phases would necessarily result in some later phases of construction occurring while earlier phases are complete and occupied. As a result, temporary staging that blocks a sidewalk or bike lane or requires transit stop relocation may be necessary, including while some portions of the project site are coming online. The blue book section 3, which addresses traffic lane closures, sets forth the minimum number of through traffic lanes that must be provided by construction contractors. The blue book section 5, which addresses sidewalk closures, requires construction contractors to provide a 4-foot-wide clear path of travel on any sidewalk at all times when a sidewalk is closed during construction activities. SFMTA or public works may require a greater width of path of travel in areas where heavier pedestrian volumes are expected. For example, under existing conditions, 1,351 pedestrians were observed walking across the 20th Avenue/Winston Drive intersection during weekday p.m. peak hour, which may warrant additional width at this location to accommodate a clear path of travel.

The blue book section 9 addresses bicycle route closures. Specifically, the blue book section 9.1 requires construction contractors to provide an alternate route for bicyclists when construction occurs on class I off-street bike paths. Similarly, the blue book section 9.2 requires contractors to maintain all existing class II bike lanes during construction. There are no existing class I or II facilities within the project site. The project or variant would construct class I and class II bike lanes as part of Phase 1. Therefore, these bike lanes would be maintained during construction of the later phases in accordance with the above blue book sections.

The public works code section 724(a) addresses street space occupancy permits, which are required for occupying any part of the street or sidewalk for building construction operations or for any other purpose. Section 724(a)(1) prohibits construction material and equipment from occupying more than the designated parking lane width and not more than a half of the official sidewalk width along the boundary of the fronting property unless permission is granted under sections 724.7 and 724.8 for temporary occupancy of additional street space.

SFMTA requires a project sponsor and/or construction contractor to follow the requirements of the blue book when conducting work in the public right-of-way. Typically, the project sponsor must submit construction plans and attend meetings with SFMTA and public works staff prior to construction of the proposed project to develop and review the construction plans in preparation for obtaining relevant construction permits. During this process, if deemed necessary by SFMTA to minimize disruption to vehicle traffic and transit operations, SFMTA may require the project sponsor or contractor to submit for its review and approval truck routing plans for the disposal of excavated materials, material delivery and storage, as well as staging for construction vehicles and impose limitations on construction truck movements during the a.m. and p.m. peak hours. If SFMTA determines that a construction project adversely impacts transit routing or alters the flow of vehicle, bicycle, or pedestrian traffic, the project sponsor or contractor would be required to submit a logistic plan so that SFMTA permit staff can confirm what permits from SFTMA or public works are required for the project.

Throughout the construction period there would be a flow of construction-related traffic into and out of the site that would be required to use designated freight traffic routes. The project sponsor has provided preliminary construction diagrams and truck haul routes. For all phases, the truck routes show two origins and destinations: a concrete truck destination in the Bayview neighborhood and a grading/excavation haul route destination in the East Bay (San Leandro). Proposed truck routes to and from both destinations show trucks using I-280, Junipero Serra Boulevard, and 19th Avenue to access the project site. Depending on the construction phase, the route to and from the phased construction site and 19th Avenue may vary. None of the streets within the project study area are restricted to commercial or oversize vehicles.[109] As shown in Table 3.B-14, the number of construction-related truck trips would average 28 daily round trips for material delivery and removal.

The impact of construction truck traffic would be a temporary lessening of the capacities on surrounding roadways and truck routes (as well as connecting local streets) due to the slower movement and larger turning radii of trucks. Construction truck traffic could result in minor congestion and conflict with traffic, transit, bicycle, and pedestrian circulation. While there may be some occasional disruption to circulation as a result of on-road construction vehicles or construction-related truck traffic during construction hours, these effects would not be frequent or substantial enough to constitute a significant impact. In addition, because

[109] SFMTA, *San Francisco Street Restrictions Effective December 2017,* https://www.sfmta.com/sites/default/files/pdf_map/2017/12/streetrestrictions.pdf, accessed August 4, 2022.

the construction of the proposed project would be phased, removal of any existing loading facilities would be limited to the phase currently under construction at any given time. Loading facilities for parcels not under construction would remain open for relevant site land uses and would not be affected by construction-related trucks.

As shown in Table 3.B-14, p. 3.B-51, the number of construction workers accessing the project site would range from 8 to 1,723 workers per day. Vehicle parking for construction workers and contractors would likely be provided within each phased construction area. Given the proposed project's location in close proximity to high-quality local and regional transit services, a substantial portion of construction workers would be expected to take public transit when traveling to and from the project site.

Pursuant to public works code section 2.4.20, the construction contractor for the proposed project would be required to submit a contractor parking plan to public works for permits for major work that has a duration of 30 days or longer.[110] These requirements are intended to minimize the inconvenience to the neighborhood related to the availability of on-street parking within the project vicinity during project construction. The contractor parking plan would be reviewed and approved by public works. The addition of the worker-related vehicle or transit trips would not substantially affect transportation conditions because the construction workday typically begins before the morning peak hour and ends before the evening peak hour—thus, the majority of employee construction trips occur prior to the morning and evening peak hours when traffic is heaviest. Additionally, construction impacts on local intersections or the transit network would be less than those associated with the proposed project once operational because fewer vehicle trips would be generated during construction conditions.

POTENTIAL TRANSIT DELAYS DURING CONSTRUCTION

The project site includes transit stops onsite and adjacent to the site along 19th Avenue, Eucalyptus Drive, Buckingham Way South, and Winston Drive. Construction would overlap with operation of existing transit lines and stops. Per the blue book section 2, major Muni routes running through or adjacent the project site are 28 19th Avenue and 29 Sunset. 28 19th Avenue runs adjacent to the project site on 19th Avenue and would be affected by Phase 3 (construction activities would occur along 19th Avenue from Winston Street to the newly proposed Street A) and Phase 4 (construction activities would occur along 19th Avenue from Street A to Eucalyptus Drive). 29 Sunset runs through the project site along Winston Drive and would be affected by Phase 2 (construction activities would occur on Winston Drive from Buckingham Way to parcel S3, which is on a business block, as defined by blue book Section 2) and Phase 4 (construction would occur on Winston Drive from parcel E6 to 19th Avenue).

A few relevant blue book sections would minimize impacts to transit:

- Section 7 prohibits construction contractors from delaying the operation of any mass transit vehicle including those operated by transit service providers serving the project site (i.e., Muni trains and buses, SamTrans buses) at any time.

[110] *San Francisco Public Works Code* section 2.4.20, Action on Applications for Permits to Excavate, http://library.amlegal.com/nxt/gateway.dll/California/publicworks/publicworkscode?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$sync=1, accessed June 12, 2018.

- Section 2.2.5 requires that all construction activities affecting moving lanes (including tow-away zones) on any major Muni routes must cease from 4 p.m. to 7 p.m. Monday through Friday to facilitate traffic flow for Muni vehicles and general public.
- Section 2.2.5 requires that all construction activities along any major Muni route that is on a business block or along any major Muni route that is in the "Area of Important Streets" must cease from 7 a.m. to 9 a.m. and 3 p.m. to 7 p.m. Monday through Friday. A business block is any city block (including alleys) where at least 50 percent of the frontage (length of a building facing the subject street) is devoted to business.

Therefore, in compliance with the blue book, the project sponsor may be required to stop construction during the above-listed times to minimize disruption to transit travel times.

The list below shows the transit stops expected to be affected by each construction phase. The project sponsor would be required by the blue book to coordinate with SFMTA about any construction activities that may interfere with any existing transit passenger loading and unloading operation at least 10 days in advance of said work.

The transit stops and lines/routes that would be affected by construction activities:

- Phase 2:
  - Stops: Winston Drive/Buckingham Way South (Muni 18, 29, 58)
  - Lines: Muni 18, 29, 57, 58, SamTrans Route 122
- Phase 3:
  - Stops: 20th Avenue/Buckingham Way North (Muni 57)
  - Lines: Muni 57
- Phase 4:
  - Stops: 19th Avenue/Winston Dr (Muni 28, 91), 20th Avenue/Winston Drive (Muni 18, 28, 57, 58), Winston Drive/20th Avenue (Muni 18, 29, 58)
  - Lines: Muni 18, 28, 29, 57, 58, 91, SamTrans Route 122
- Phase 5:
  - Stops: 19th Avenue/Winston Drive (SamTrans Route 122), 19th Avenue/Buckingham Way South (Muni 18, 58), 20th Avenue/Winston Drive (Muni 57), 90 Buckingham Way South (Muni 57)
  - Lines: Muni 18, 57, 58, SamTrans Route 122

The project sponsor and SFMTA coordination may include temporarily closing and relocating the stops to a nearby location and notifying riders of the temporarily revised stop location. The affected Phase 5 stops include a layover location for SamTrans Route 122 and Muni 18 and 58 operators. The project sponsor and SFMTA would coordinate to identify a temporary layover location during Phase 5 construction.

PRIVATE RIGHT-OF-WAY

City regulations do not apply to work performed on private streets within the project site. Therefore, the above discussion of city requirements does not apply to the privately-owned portions of Buckingham Way

North, 20th Avenue, and Streets A through C. Because of the previously described duration and intensity of construction, the proposed project would include temporarily blocking sidewalks, temporary transit stop relocation, increasing construction-related traffic (i.e., vendors and truck haul trips), thus potentially increasing conflicts with people walking or bicycling. Therefore, the project could result in a significant impact in the absence of these regulations and required city coordination.

VARIANT

As shown in Table 3.B-14, p. 3.B-51, the variant would have similar construction activities and phasing as the proposed project with the exception of Phase 4, which would also include development of the Authentic Church parcel. The duration of Phase 4 would be the same as proposed project (44 months) but there would be higher daily worker and truck trips (8 to 731 daily worker trips and an average of 13 daily truck trips).

Due to the increased number of worker and truck trips in Phase 4, the variant would result in 8 to 1,822 workers and an average of 29 trucks accessing the project site per day (higher than the proposed project). The transit stops affected by construction activities would be the same as those identified for the proposed project.

As with the project, the portions of the variant within the public right-of-way would be subject to city regulations that would require coordination that would avoid any potentially significant construction-related transportation and circulation impacts. However, the portions of the project within private right-of-way could result in significant transportation-related impacts.

SUMMARY

Project construction would be phased, and the majority of staging and construction activities would occur onsite. Construction contractors would be required to comply with applicable city and state[111] regulations to avoid impacting transit and people walking, biking, and driving, as described above. The variant would include more activities in one of the six overlapping construction phases but would otherwise be similar and would also be required to adhere to rules and regulations described above.

Under the blue book and public works code, some portions of the proposed project or variant would require coordination and review with public works and SFMTA that would avoid transportation-related construction impacts. However, the portions of the proposed project or variant that are located on private right-of-way would result in sufficient disruption to result in significant impacts. Implementation of **Mitigation Measure M-TR-1, Construction Coordination Plan**, applying to both public and private streets, would be required to reduce construction-related impacts.

> **Mitigation Measure M-TR-1: Construction Coordination Plan.** The project sponsor of the proposed project or variant shall prepare a construction coordination plan (plan or plans) for each construction phase as shown in Figure 2-20 and Table 3.B-14 in the EIR, including to address proposed project or variant construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water,

[111] As outlined in the project description, the proposed project or variant may require a Caltrans encroachment permit for any work in the public right-of-way along 19th Avenue.

electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized.

The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary.

Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to:

- Blue Book section 3: Traffic Lane Closure Requirements
- Blue Book section 5: Sidewalk Closures
- Blue Book section 7: Transit Operations
- Blue Book section 9: Bicycle Routes
- Public Works Code section 2.4.20(b): Contractor Parking Plans
- Public Works Code section 724: Temporary Occupancy of Street
- Public Works Subdivision Code
- Public Works Subdivision Regulations

Each plan shall also address how the proposed construction activities within the project or variant site would be coordinated with construction activities within Caltrans' right-of-way.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure M-TR-1 would be required to reduce proposed project or variant impacts. The project sponsor would submit a plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency to demonstrate compliance with the regulations for construction in the public and private right-of-way cited in the mitigation measure. The plan would demonstrate how the project's construction would reduce potential conflicts with people walking or bicycling and minimize sidewalk closure or transit stop disruption. The plan would need to be approved prior to the start of construction and would be monitored for compliance throughout. Implementation of Mitigation Measure M-TR-1 would reduce any potential construction-related transportation and circulation impacts to less-than-significant levels. The impact would be ***less than significant with mitigation***.

Impact TR-2: Operation of the proposed project or variant would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations. ***(Less than Significant)***

WALKING AND BICYCLING

Existing challenges for pedestrians and bicyclists in the study area include high vehicle traffic volumes at some study intersections (e.g., over 4,000 vehicles during weekday p.m. peak hour at 19th Avenue/Winston), discontinuous sidewalks on the project site (including along 20th Avenue and Winston Drive), and roadways without of separated and dedicated low-stress bicycle facilities on and near the project site. The proposed project or variant would construct sidewalks to fill these gaps within the project site. Specifically, the proposed project or variant would relocate the entrances and exits of parking lots along 20th Avenue to the proposed new roadways (Street A and Street B) and construct continuous sidewalks on both sides of the street from Buckingham Way North to Winston Drive. Sidewalk widths would be consistent with Better Streets Plan requirements, with minimum throughway zones of at least 6 feet wide (see Figure 3.B-4, p. 3.B-26). Street A and Street B, categorized as alleys based on similar streets per the Better Streets Plan, would also meet minimum sidewalk width of 6 feet.

Additionally, two-way class IV bicycle facilities would be constructed to encircle the main part of the Stonestown Mall and connect the project site to the external roadway network. A Class III bike route would be constructed along the loop road on the northwest corner of the project site and would be connected to Buckingham Way North and the proposed open space on the west side of the shopping mall with a Class I shared-used path. On site, where proposed bike facilities would cross intersections at signals, this analysis assumes dedicated phases at intersections or similar signal design, phasing, and timing best practices would minimize potential for conflicts by separating bicycle-vehicle movements in time and/or space. The addition of a bikeway on the project site would enhance the bicycling network in the study area and prioritize safe movement of people bicycling through the site. The project sponsor would be required to coordinate the more detailed design of the bicycle facilities through the SFMTA in line with best practices that minimizes the potential for conflict among competing travel modes at intersections.

VEHICULAR CIRCULATION

The proposed project or variant would not involve any changes to the roadway network or include any design features that would cause or exacerbate potentially hazardous conditions (e.g., roadway widening or introduction of high-speed movements). The proposed project's or variant's streetscape modifications and circulation changes would primarily consist of the changes listed in the Project Features discussion, p. 3.B-24, and shown in Figure 2-12 and Figure 2-13, pp. 2-23 and 2-23.

These types of changes – lane reductions and removal of channelized turn lanes—generally promote slower driving speeds, reduce potentially hazardous conditions, and improve sightlines. Change of traffic control (from existing stop-control to signalization) provides dedicated time for side-streets or garage access to proceed through intersections, and also includes dedicated pedestrian crossing phases along with the signal. Therefore, the proposed roadway changes would not be expected to create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations.

In addition to the streetscape and circulation modifications, the proposed project or variant would generate additional vehicle trips traveling to and from the project site: 14,865 throughout the day, and 1,198 in the weekday p.m. peak hour (637 inbound to the site and 561 outbound from the site). The proposed project would increase vehicle parking supply relative to existing conditions, from 3,400 to 4,250 total spaces. These

changes would result in an increase in the number of vehicles circulating onsite and increase the number of vehicle turning movements near entries and exits to parking structures. This increase in vehicle traffic could increase the potential for conflicts between people walking and bicycling and people driving. However, the increase in vehicle parking spaces and the addition of project- or variant-generated vehicle trips would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations, as the proposed garage driveways would generally be served by either a two-way road anticipated to operate at slow speeds, right-in right-out access (which simplifies operations and reduces conflicts), and/or signal control that would provide protection for each movement through the intersection.

INCREASED MOTOR VEHICLE TRAFFIC

The proposed project or variant would result in a general increase in vehicle travel within the project site and on the surrounding roadway network. Major vehicle access points to and from the project site would be located at 19th Avenue/Winston Drive, 20th Avenue/Eucalyptus Drive, 19th Avenue/Eucalyptus Drive, Buckingham Way/Winston Drive, and 20th Avenue/Winston Drive. As presented in Project Travel Demand Methodology and Results, p. 3.B-31, project-related travel demand was estimated, split by mode, distributed to likely destinations, and assigned to specific streets and transit lines to understand the number of people who would travel, their origins and destinations, mode choice, and routes. An evaluation of vehicle volumes and queues lengths at the five primary project site access points mentioned above was conducted to assess potentially hazardous conditions created by the project or variant for people walking, bicycling, or driving, or public transit operations. The analysis uses median and 95th percentile queue lengths, with the 95th percentile queues defined to be the vehicle queue distance on intersection approach (in feet) that has only a 5 percent probability of being exceeded during the analysis time period (i.e., one to three times in the weekday p.m. peak hour).

Study Intersections #7 and #27 – 19th Avenue/Eucalyptus Drive, 20th Avenue/Eucalyptus Drive

Under existing conditions, 19th Avenue/Eucalyptus Drive is a signalized intersection and 20th Avenue/Eucalyptus is all-way stop controlled with a northbound channelized right-turn lane. 19th Avenue from Sloat Boulevard to Randolph Street, including the segment adjacent to the project site, is identified as part of the Vision Zero network. Class III bike facilities run along 20th Avenue south of Eucalyptus Drive. Nearby transit stops include 19th Avenue/Eucalyptus Drive (Muni 28, 91) and Eucalyptus Drive/19th Avenue (Muni 57).

Proposed Project

The project proposes to add signal control at 20th Avenue/Eucalyptus Drive. The proposed project would remove the northbound channelized right-turn lane, and the lane configuration would include a northbound shared through/left-turn lane and a northbound right-turn lane. A two-way class IV bikeway would be constructed along 20th Avenue from Eucalyptus Drive to Buckingham Way South. The removal of the channelized northbound right-turn lane would reduce the total crossing distance for pedestrians and consolidate conflict points while providing traffic control with the traffic signal to protect movements through the intersection.

The addition of project traffic would increase vehicle turning movements from the project site outbound from Eucalyptus Drive onto 19th Avenue. Under existing conditions at 19th Avenue/Eucalyptus Drive, 128 vehicles make an eastbound left turn and 54 vehicles make an eastbound right turn from Eucalyptus Drive onto 19th Avenue during the weekday p.m. peak hour. The proposed project would add 69 left turns and 69 right turns during weekday p.m. peak hour.

All eastbound left- or right-turning vehicles would need to cross the north crosswalk (61 people walking in the weekday p.m. peak hour) or south crosswalk (10 people walking). With the addition of the proposed project, there would be an increase in the number of people walking and bicycling to and from the project site, resulting in an increase in people using these two crosswalks.

20th Avenue/Eucalyptus Drive is about 230 feet west of 19th Avenue/Eucalyptus Drive. Existing eastbound queueing does not typically extend to 20th Avenue in existing conditions. With the addition of project traffic, median and 95th percentile queues would extend back to the 20th Avenue intersection. If queues extend into and across 20th Avenue and into the intersection, they could block transit lines traveling along 20th Avenue as well as crosswalks. The queues could also impede access to the bike sharing station (about 320 feet west of 19th Avenue/Eucalyptus Drive) and Stonestown Family YMCA (about 546 feet from 19th Avenue/Eucalyptus Drive) on Eucalyptus Drive.

The Muni M Ocean View has an at-grade crossing about 90 feet to the east of 19th Avenue/Eucalyptus Drive with striped stop bars for crossing vehicles along Eucalyptus Drive. Existing westbound queueing at 19th Avenue/Eucalyptus Drive does not typically extend to the grade crossing (peak hour median 84 feet, 95th percentile 151 feet). With the anticipated addition of project traffic, queues may extend back to the light rail right of way (median 278 feet, 95th percentile 462 feet). If queues extend into the grade crossing and drivers fail to obey the stop bar and keep clear of the crossing, queued vehicles could delay the light rail. However, the light rail vehicle travels at a relatively low speed and Muni operators have a clear view of the crossing upon approach (from both directions), minimizing risk of collision.

Variant

The variant would include the same streetscape and bicycle facility changes described above for the proposed project but would add more vehicle trips and turning movements than the proposed project. The addition of variant traffic would:

- Add 75 eastbound left turns and 69 eastbound right turns at 19th Avenue/Eucalyptus Drive during the weekday p.m. peak hour (compared to 69 each for the proposed project).
- Create potential eastbound queue spillback from 19th Avenue/Eucalyptus Drive to 20th Avenue/ Eucalyptus Drive. Queues may extend back to the 20th Avenue intersection in the weekday p.m. peak hour (median 847 feet, 95th percentile 1,280 feet).
- Contribute to queues extending back to the M Ocean View crossing (peak hour median 339 feet, 95th percentile 562 feet).

Effect

The addition of proposed project or variant trips would result in queues that extend beyond their current average and maximum lengths in existing conditions. However, these effects are not expected to create potentially hazardous conditions for people walking or bicycling, as drivers would generally have unobstructed sightlines and/or substantial sight distance to see approaching pedestrians, and drivers would need to wait for a green light and/or wait until there is a sufficient gap in the flow of people walking to clear their vehicle before entering 19th Avenue.

Study Intersections #8 and #25 – 19th Avenue/Winston Drive, 20th Avenue/Winston Drive

Two study intersections at the southeast corner of the project site, 20th Avenue/Winston Drive and 19th Avenue/Winston Drive, are closely spaced—approximately 225 feet apart. Under existing conditions, class III bike facilities run along Winston Drive east of 19th Avenue. Nearby transit stops include 19th Avenue/Winston Drive (Muni 28 19th Avenue, 91 3rd Street/19th Avenue Owl), 20th Avenue/Winston Drive (Muni 18 46th Avenue, 57 Parkmerced, 58 Lake Merced), and Winston Drive/20th Avenue (Muni 18 46th Avenue, 29 Sunset, 58 Lake Merced).

Proposed Project

The project proposes to remove the eastbound and southbound free-flowing right-turn slip lanes at 19th Avenue/Winston Drive. At 20th Avenue/Winston Drive, the westbound channelized right-turn lane would be removed, and the lane configuration would be modified to include two through lanes and one right-turn lane. Several movements would be restricted at 20th Avenue/Winston Drive – southbound, westbound, and eastbound left-turns and eastbound right-turns—and others would only be allowed for transit vehicles – southbound through movements. These turn restrictions would reduce the number and type of conflicts among competing travel modes at the intersection. Crosswalks would be constructed on the east side of 20th Avenue/Winston Drive. Class IV bikeways would be constructed along 20th Avenue from Eucalyptus Drive to Buckingham Way South and along Winston Drive from Buckingham Way to 19th Avenue.

The addition of project trips would create potential eastbound queue spillback from 19th Avenue/Winston Drive to 20th Avenue/Winston Drive. 20th Avenue/Winston Drive is about 225 feet to the west of 19th Avenue/Winston Drive. Existing eastbound queueing does not typically extend to 20th Avenue (weekday p.m. peak hour median 63 feet, 95th percentile 77 feet). With the anticipated addition of project traffic, queues may extend back to the 20th Avenue intersection (median 232 feet, 95th percentile 357 feet). If queues extend into and across 20th Avenue, they could block transit lines traveling along 20th Avenue, as well as crosswalks and the proposed two-way bike lane traveling along the east side of 20th Avenue. This could increase conflicts for people walking (356 people walking along 20th Avenue along the west leg of the intersection in the weekday p.m. peak hour).

The addition of project traffic could also cause westbound queue spillback from 19th Avenue/Winston Drive to Stonecrest Drive/Winston Drive. Stonecrest Drive/Winston Drive is about 85 feet to the east of 19th Avenue/Winston Drive. Existing westbound queueing does not typically extend to Stonecrest Drive (weekday p.m. peak hour median 77 feet, 95th percentile 139 feet); but with the addition of project traffic, queues may extend back to the Stonecrest Drive intersection (median 202 feet, 95th percentile 319 feet). If queues extend into the unsignalized Stonecrest Drive intersection, they could create a higher risk of conflict for people walking and driving.

Queue spillback could also occur southbound from 19th Avenue/Winston Drive to 19th Avenue/Street A and 19th Avenue/Eucalyptus Drive. Street A, the newly proposed street connecting Block E1 to 19th Avenue and 20th Avenue, is about 620 feet to the north of 19th Avenue/Winston Drive. Eucalyptus Drive is about 1,500 feet to the north. Under existing conditions, the southbound queueing extends to the one-way connection from Buckingham Way North to 19th Avenue but does not typically extend to Eucalyptus Drive (weekday p.m. peak hour median 1,110 feet, 95th percentile 1,746 feet). With the anticipated addition of project traffic, queues may spill across Street A and further extend to Eucalyptus Drive (weekday p.m. peak hour median 1,464 feet, 95th percentile 2,318 feet).

On the northbound approach of 19th Avenue/Winston Drive, the leftmost turn pocket of the double left-turn lanes overlaps with Muni M Ocean View tracks such that light rail vehicles queue with left-turning vehicles. Under existing conditions, the left turn queue extends beyond the lane's 180-foot storage capacity along the Muni track during the weekday p.m. peak hour, with a median queue length of approximately 154 feet and a 95th percentile queue length of approximately 256 feet. With project traffic, queues may extend further south during the weekday p.m. peak hour, with estimated median queues of 208 feet and 95th percentile queues of 256 feet. This additional queueing would likely result in increased delay to the M Ocean View route, which is reflected in the transit delay operations analysis discussed in Impact TR-4, p. 3.B-65. Light rail vehicles travel at a relatively low speed at and through this intersection, and Muni operators have a clear view of the crossing upon approach, minimizing risk of collision.

At 20th Avenue/Winston Drive, the addition of project trips would increase westbound queue lengths. The intersection is about 225 feet away from 19th Avenue/Winston Drive. Under existing conditions, westbound queueing does not typically extend to 19th Avenue during the weekday p.m. peak hour, with median queue lengths of approximately 80 feet and 95th percentile queue lengths of approximately 144 feet. With project traffic, queues are projected to extend further toward 19th Avenue during the weekday p.m. peak hour, with median queue lengths of approximately 127 feet and 95th percentile queue lengths of approximately 219 feet; however, since the distance between the two intersections is about 225 feet, these queue lengths would not cause any spillover into the 19th Avenue/Winston Drive intersection.

The queues could also cause traffic delays and/or create challenges for drivers entering and exiting Street A as there would be no signal control at 19th Avenue/Street A. If queues further extend into 19th Avenue/Eucalyptus Drive intersection, they could block crosswalks and cause greater delays for circulating vehicles, since the intersection would serve as the primary vehicle access point to the project site.

Variant

The variant would have the same queueing effects as those described above for the proposed project, but would add more vehicle traffic at most locations and result in longer queues:

- Eastbound queues at 19th Avenue/Winston Drive may extend back to the 20th Avenue intersection (median 232 feet, 95th percentile 357 feet). The variant is estimated to add 205 southbound trips at the intersection compared to 175 project trips.
- Westbound queues at 19th Avenue/Winston Drive, queues may extend back to the Stonecrest Drive intersection (median 209 feet, 95th percentile 328 feet). The variant is estimated to add 189 westbound vehicles at the intersection compared to 178 project vehicles.
- Southbound queues at 20th Avenue/Winston Drive may spill across Street A and further extend to Eucalyptus Drive (peak hour median 1,470 feet, 95th percentile 2,328 feet). The variant is estimated to add the same number of southbound trips through the intersection as the proposed project.

Effect

The addition of proposed project or variant trips would result in queue lengths that are longer than their current average and maximum lengths in existing conditions. However, these proposed project or variant effects are not expected to create potentially hazardous conditions for people walking or bicycling, as the proposed project or variant would not introduce design features that would block sightlines or increase

vehicle speeds. Drivers would need to wait for a green light at signalized intersections and/or wait until there is a sufficient gap in the flow of people walking to clear their vehicles at the intersections described.

Study Intersection #20 – Buckingham Way/Winston Drive

Under existing conditions, the Buckingham Way/Winston Drive intersection is all-way stop controlled. Class II bike facilities run along Winston Drive west of Buckingham Way. Nearby transit stops include Buckingham Way/Winston Drive (Muni 57 Parkmerced) and Winston Drive/Buckingham Way (Muni 18 46th Avenue, 29 Sunset, 58 Lake Merced).

Proposed Project

The project proposes to add signal control at the intersection. The westbound, northbound, and southbound approaches would be reduced from one through/right-turn lane and one through/left-turn lane to one through/turn lane. Class IV bikeways would be constructed along Buckingham Way North from Winston Drive to 20th Avenue and along Winston Drive from Buckingham Way to 19th Avenue.

The addition of project traffic would increase vehicle turning movements at this intersection entering and exiting the project site but would not introduce higher speeds or movements that would create any potentially hazardous conditions.

Variant

The variant would include the same lane and traffic control modifications described above for the proposed project but would add more vehicle traffic (399 weekday p.m. peak hour vehicles total compared to 383 project trips). However, this added vehicle traffic would not change intersection operations or conditions substantially compared to the proposed project.

Effect

The proposed project or variant would not be expected to create a hazard for people walking or bicycling, as the queues would not obstruct access to adjacent intersections and/or facilities in a way that would create or exacerbate potentially hazardous conditions.

VARIANT

The variant would include the same streetscape and circulation modifications as the proposed project. It would generate more additional vehicle trips traveling to and from the project site compared to the proposed project: 15,147 throughout the day, and 1,221 in the weekday p.m. peak hour (655 inbound to the site and 567 outbound from the site). The variant would increase vehicle parking supply relative to existing conditions, from 3,400 to 4,450 total spaces (higher than the proposed project). These increases in vehicle trips and parking supply would result in an overall increase in the number of vehicles circulating onsite and increase queue lengths at intersections. The detailed results and effects compared to the proposed project at key intersections are presented above.

SUMMARY

The proposed project or variant would not involve any changes to the roadway network or design features that would create potentially hazardous conditions. Both would increase overall traffic levels within the project site and in surrounding areas such that queues would extend beyond existing levels and may spill back to adjacent intersections at intersections connecting the project site to the surrounding roadway

network. These conditions would increase vehicle travel delay but would not exacerbate any existing potentially hazardous conditions or increase any conflicts that occur due to high speeds or limited visibility. Several design features (e.g., lane reduction and right-turn slip lane closure) would have the opposite effect and would promote slower speeds along roadways and at conflict points.

The proposed project or variant would not create potentially hazardous conditions for people walking, bicycling, or driving, or for public transit operations, and the impacts of the proposed project or variant related to potentially hazardous conditions would be ***less than significant***. No mitigation would be required.

Impact TR-3: Operation of the proposed project or variant would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access. ***(Less than Significant)***

WALKING AND BICYCLING

As discussed under Impact TR-2, the project proposes streetscape modifications that would connect the currently discontinuous sidewalks along 20th Avenue and provide bikeways encircling the shopping mall, which would also be connected to the existing bicycle network. As described in Project Features, p. 3.B-23, and shown in Figure 3.B-4, p. 3.B-26, the project also proposes to provide sidewalks in excess of minimum requirements per the Better Streets Plan, street trees, accessible ramps, and other streetscape elements to encourage walking and bicycling and promote biking and walking access to nearby public transit.[112] The proposed project would be designed to be compliant with the Americans with Disabilities Act.

The proposed project would contribute additional traffic from people walking, bicycling, taking transit, and driving to the project site. As shown in Table 3.B-10, p. 3.B-34, and Table 3.B-11, p. 3.B-36, during the weekday p.m. peak hour, the proposed project would generate 2,065 walking trips (including 1,488 walk only and 593 walk-to-transit) and 106 bicycle trips.

The primary access points to the project site would continue to be on the east and west sides of the Stonestown Galleria shopping mall. Primary walking connections to and from the public streets would be provided at 19th Avenue/Eucalyptus Drive, 19th Avenue/Winston Drive, 20th Avenue/Eucalyptus Drive, 20th Avenue/Winston Drive, and Winston Drive/Buckingham Way. Sidewalks and internal paths would be provided to connect mall entrances to the five main project site access intersections. The project site is close to multiple bus stops served by Muni and SamTrans routes. Bicyclists would access the project site via designated class IV separated bike lanes along 20th Avenue, Winston Drive, and Buckingham Way (North and South). Potential conflict points associated with the proposed project would be most concentrated at these project site access points, as these locations are where the greatest concentration of vehicle, pedestrian, and bicycle activity would occur. However, the proposed changes to transportation facilities (e.g., reducing travel lanes, closing right-turn slip lanes, adding Street A and Street B) and the addition of proposed project traffic are not anticipated to interfere with walking or bicycling accessibility, as the proposed project would provide signals to separate bicycling, walking, and driving conflicts in space (dedicated paths) and/or time (dedicated signal phases) at intersections. The project sponsor would be required to coordinate the more detailed

[112]Some streets on the project site and sidewalk areas are private and therefore not subject to Better Streets Plan requirements (see Figure 3.B-9). However, for purposes of this analysis they were compared to these requirements to determine if they would provide adequate accessibility per typical City standards because the project or variant proposes to provide sidewalks in excess of minimum requirements under the Better Street Plan.

design of the two-way class IV bicycle facilities through the SFMTA to develop a signal plan in line with best practices that minimizes the potential for conflict among competing travel modes at intersections.

As discussed under Impact TR-2, potential queue spillbacks were identified at 19th Avenue/Eucalyptus Drive, 19th Avenue/Winston Drive, and 20th Avenue/Winston Drive as a result of increases in vehicle trips associated with the proposed project. However, the extension of queue lengths would not substantially impact or interfere with accessibility for pedestrians and bicyclists accessing the project site or traveling through the project site who would be provided dedicated facilities with separation from vehicle travel lanes.

In addition, the proposed project would include a TDM plan as described in Project Features, p. 3.B-23, which would also include measures to further promote accessibility and encourage active transportation.

Overall, the proposed project would promote accessibility for people walking to and through the project site by connecting new pathways and bikeways to the existing sidewalk and bicycling networks. The proposed project would not generate activities that would create interfere with accessibility for people walking or bicycling.

EMERGENCY ACCESS

Emergency access to the project site and nearby emergency treatment centers would be similar to existing conditions. San Francisco Fire Department Station 19 is located at the southwest corner of the Winston Drive/Buckingham Way intersection, with fire truck access provided along the south side of Buckingham Way approximately 50 feet southwest from the intersection. The project proposes to signalize the Winston Drive/Buckingham Way intersection. During the weekday p.m. peak hour vehicle queues would not typically extend to the fire station (95th percentile of queue is 9 feet, which is less than one vehicle). There would be sufficient clearance for emergency vehicles to enter/exit the station. Furthermore, the proposed new traffic signals could be equipped to receive preemption signals to prioritize access for emergency vehicles.

Although there would be a general increase in vehicle traffic from the additional activity at the project site, the proposed project would not inhibit emergency access to the project site or materially affect emergency vehicle response out of the station. Development of the project site, and associated increases in vehicles, people walking, and people bicycling would not substantially affect emergency vehicle access to other buildings or land uses in the area or to emergency treatment centers.

Prior to finalizing the design and dimensions of the internal street network and onsite pedestrian network, the project sponsor would coordinate the design details with the police and fire departments for review and approval, as required, to minimize the potential for impacts on emergency vehicle access to the project site or adjacent locations. Such review would, for example, check that internal streets would meet San Francisco Fire Code clear width requirements to accommodate emergency vehicles.

VARIANT

The impact of the variant on walking and bicycling accessibility and emergency access would be similar to the proposed project with the exception that the variant would generate more vehicle, walking, and bicycle trips. During the weekday p.m. peak hours, the variant would generate 2,113 walk trips (including 1,520 walk-only trips and 593 walk-to-transit trips) and 110 bicycle trips. However, this added trip activity would not change accessibility conditions for people walking or bicycling or for emergency access substantially compared to the proposed project.

SUMMARY

Given the considerations described above, the proposed project or variant would not interfere with accessibility of people walking or bicycling or result in inadequate emergency access. The proposed project or variant's impacts related to accessibility would be ***less than significant***.

Impact TR-4: Operation of the proposed project would not substantially delay public transit; operation of the variant would substantially delay public transit. ***(Significant and Unavoidable with Mitigation)***

MUNI TRANSIT SERVICE

The transit corridor delay analysis considers the change in intersection delay in the weekday p.m. peak hour due to the addition of inbound and outbound project-generated vehicle traffic assigned to project study intersections. The analysis applies additional adjustments as specified in the SF transportation guidelines; details of the adjustments are described in Appendix D.2, Transit Delay Analysis Memorandum.

The combined, aggregated transit delay in minutes for each route and direction is presented in **Table 3.B-15**. Detailed analysis showing vehicle trip assignment to individual stops and intersections and associated delay increases is included in the calculation sheets in Appendix D.2, Transit Delay Analysis Memorandum.

The delay threshold column shown in the table is based on the SF Transportation guidelines. The 28 19th Avenue and 28R 19th Avenue Rapid Combined row applies a combined headway for all buses of both routes (5 minutes) to arrive at a delay threshold (2.5 minutes). The Winston Drive, 19th/20th row for eastbound direction similarly applies a combined headway for all routes passing eastbound on Winston Drive between 20th and 19th avenues (18 46th Avenue outbound, 29 Sunset outbound, and 58 Lake Merced inbound, 4.1 minutes) to arrive at a delay threshold (2.0 minutes). This is a conservative assessment for these rows because the combined thresholds of significance are lower than the thresholds of significance for any of the individual routes and because the higher transit travel time increase for any route on the combined row is compared to the lower thresholds of significance.

Table 3.B-15 shows that the project or variant would not exceed the delay threshold for all routes, except the variant would create more than 4 minutes of additional delay for the 57 Parkmerced in the inbound direction (generally traveling north and east through the project site). The 57 Parkmerced enters the project study area traveling east along Winston Drive, turns right to continue along Buckingham Way South, turns left onto 20th Avenue, travels north along 20th Avenue to Eucalyptus, turns right onto Eucalyptus, and continues east through 19th Avenue/Eucalyptus Drive. Additional delay incurred by the bus traveling to and through 19th Avenue/Eucalyptus Drive is a primary contributor to the delay.

If the delay threshold is met, the department considers qualitative criteria to determine whether the delay would result in significant impacts due to a substantial number of people riding transit switching to riding in private or for-hire vehicles. For the 57 Parkmerced route, the arterial roadways the 57 Parkmerced travels typically have an auto-to-transit travel speed ratio of 1.6 to 1.8 (indicating that auto trips have 1.6 to 1.8 higher travel speeds than transit trips).[113] The 57 Parkmerced has served approximately 400 to 600 weekday

[113] SFCTA, *Congestion Tracker*, https://congestion.sfcta.org/.

Table 3.B-15 Local Transit Delay Analysis Results by Line and Direction

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)	
					Existing plus Project	Existing plus Variant
KT K Ingleside-T Third Street	IB	8	4	4.0	1.0	1.0
	OB	8	4	4.0	1.4	1.5
M Ocean View	IB	9	4.5	4.0	0.5	0.6
	OB	9	4.5	4.0	0.7	0.7
18 46th Avenue	IB	20	10	4.0	0.3	0.3
	OB	20	10	4.0	0.8	1.0
28 19th Avenue	IB	10	5	4.0	0.5	0.6
	OB	10	5	4.0	2.1	2.1
28R 19th Avenue Rapid	IB	10	5	4.0	0.5	0.5
	OB	10	5	4.0	1.2	1.2
29 Sunset	IB	9	4.5	4.0	0.1	0.2
	OB	9	4.5	4.0	0.9	1.2
57 Parkmerced	IB	20	10	4.0	3.9	4.8
	OB	20	10	4.0	2.5	3.0
58 Lake Merced	IB	30	15	4.0	1.1	1.4
	OB	30	15	4.0	0.4	0.5
28 + 28R Combined	NB	5	2.5	2.5	0.5	0.6
	SB	5	2.5	2.5	2.1	2.1
Winston, 19th/20th (EB Combined)	WB	9	4.5	4.5	-0.4	-0.4
	EB	4.1	2.0	2.0	0.1	0.1

ABBREVIATIONS:
IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound
NOTE:
Orange highlighted cells indicate delay values above the significance threshold.

daily boardings throughout 2022.[114] Substantial impacts to transit travel time to these lines could result in passengers switching from transit to other modes (e.g., private vehicles, ride-hailing vehicles). Therefore, the delay impacts from the variant would be significant.

The table also indicates a reduction of delay of approximately 0.4 minutes (24 seconds) for the Winston combined lines running between 19th and 20th in the westbound direction with the proposed project or variant. This reduced westbound transit travel delay is due to the proposed restriction of multiple turning

[114] SFMTA, *Weekly Transit Bus Ridership*, https://www.sfmta.com/reports/weekly-transit-bus-ridership.

movements at the 20th Avenue/Winston Drive intersection, resulting in fewer traffic movements competing for signal green time at the intersection.

REGIONAL TRANSIT SERVICE

The analysis also evaluated the proposed project's or variant's effects on SamTrans Route 122 travel times. Because this bus line crosses city and county boundaries between San Mateo County and San Francisco City and County, it is a regional service. However, as discussed previously, SamTrans Route 122 operates similarly to a local service in the following ways: it runs throughout the day (rather than just during peak periods), it operates on 20-minute headways (like some of the Muni routes analyzed), and it provides stops on the project site and along its route with stop spacing more similar to a typical local route (i.e., closer) compared to a typical regional bus service. For this reason, SamTrans Route 122 is analyzed with the same delay thresholds as the local Muni service. The results of the transit delay analysis for SamTrans Route 122 are presented in **Table 3.B-16**.

Table 3.B-16 SamTrans Transit Delay Analysis Results by Line and Direction

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)	
					Existing Plus Project	Existing Plus Variant
122	NB	20	10.0	4.0	1.3	1.5
	SB	20	10.0	4.0	0.8	0.8

ABBREVIATIONS:
NB = northbound; SB = southbound

As shown in Table 3.B-16, the proposed project or variant would not result in substantial delay to SamTrans Route 122.

SUMMARY

The quantitative transit analysis of Muni and SamTrans routes by line and direction demonstrates that the addition of project vehicle trips traveling to, within, and from the project site would not substantially increase transit travel delay. However, the addition of vehicle trips associated with operation of the variant would create additional delay to the 57 Parkmerced inbound route, which would be significant. Implementation of **Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips**, would be required to reduce the variant's significant impact associated with transit delay to the Muni 57 Parkmerced inbound route.[115]

> **Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips.** The project sponsor shall be responsible for implementing transportation demand management (TDM) measures in a City-approved TDM Plan to limit the number of project- or variant-generated vehicle trips to a maximum of 90 percent of the EIR-estimated values of the sum of the phases of project or variant development in the weekday p.m. peak hour (performance standard).

[115] Mitigation Measure M-TR-4a would apply to the proposed project or to the variant because under cumulative conditions, both the proposed project and variant contribute considerably to cumulative transit delay impacts.

Monitoring and Reporting Plan. The project sponsor shall retain a qualified transportation consultant approved by the San Francisco Municipal Transportation Agency (SFMTA) or the planning department to begin monitoring vehicle trips in accordance with the approved monitoring and reporting plan. The monitoring shall include counts of the number of vehicles entering and exiting the project site on internal streets at the site boundaries on 19th Street/Winston Drive, 19th Avenue/Street A, 20th Avenue/Eucalyptus Drive, Winston Drive/Buckingham Way, and 20th Avenue/Winston Drive. The counts shall be consistent with the data collection period (e.g., days of week, time of day, months of the year) documented in Appendix C.1 of the EIR. The counts will subtract the baseline (no-project) vehicle trip estimate documented in Appendix C.1 of the EIR to establish the project or variant vehicle trip operational (i.e., not construction-related) contribution to the counts.

The project sponsor shall begin monitoring when Phase 1 operations overlaps with any construction, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions. The project sponsor shall submit a monitoring and reporting plan to the planning department and SFMTA for review within 30 days of the monitoring, or with TDM Plan monitoring and reporting in a manner consistent with the planning commission's TDM program standards. Thereafter, annual monitoring and reporting plans shall be submitted (referred to as "reporting periods") until three consecutive reporting periods show that the fully built project or variant (i.e., after six phases of the project or variant have been fully constructed) meets the performance standard, or until expiration of the project's development agreement, whichever is earlier.

Adjustments. If the planning department finds that two consecutive reporting periods demonstrate that the project or variant fails to meet the stated performance standard, the project sponsor shall select and implement additional TDM measures to reduce the number of project- or variant-generated vehicle trips to meet the performance standard. These measures could include expansion of measures already included in the project's or variant's TDM Plan, other measures identified in the planning commission's TDM program standards Appendix A (as such appendix may be amended by the planning department from time to time) that have not yet been included in the project's or variant's approved TDM Plan, or, at the project sponsor's discretion, other measures not included in the planning commission's TDM program standards Appendix A that the planning department and project sponsor agree are likely to reduce peak period driving trips.

If additional TDM measures are required because the project or variant fails to meet the stated performance standard for any development phase for two consecutive report periods, the project sponsor shall have 30 months to implement such measures and demonstrate through monitoring a reduction in vehicle trips to meet the performance standard. If the performance standard is not met within 30 months, the project sponsor shall submit to the planning department and SFMTA a memorandum documenting proposed methods of enhancing the effectiveness of the TDM measures and/or additional feasible TDM measures that would be implemented by the project sponsor, along with annual monitoring of the project-or variant-generated vehicle trips to demonstrate their effectiveness in meeting the performance standard until the term of the TDM Plan ends as set forth below.

Project sponsor shall have the right to request and pay for a transportation study by a qualified transportation consultant approved by SFMTA or the planning department to confirm the requested measures are effective to achieve the performance standard.

The monitoring and reporting plan may be modified by the planning department in consultation with SFMTA to account for transit route or transportation network changes, or major changes to the development program. The modification of the monitoring and reporting plan, however, shall not change the performance standard set forth in this mitigation measure.

Term. The monitoring and reporting plan shall be terminated upon the earlier of (i) expiration of the project's or variant's development agreement, or (ii) three consecutive reporting periods showing that the fully built project or variant has met the performance standard.

However, the project sponsor shall continue to be subject to compliance reporting in a manner consistent the planning commission's TDM program standards.

Additionally, **Mitigation Measure M-TR-4b, Transit Travel Time Reduction Measure**, would be required to reduce the variant's significant impact associated with transit delay to Muni 57 Parkmerced inbound route.

Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure. The project sponsor of the project or variant shall implement transit travel time reduction measure. Such a measure shall include the preparation and implementation of a coordination and transit signal priority plan to address northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way, subject to San Francisco Municipal Transportation Agency (SFMTA) review and approval.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-TR-4a would include programmatic and design elements to reduce vehicle travel to and from the project site throughout the day and with a targeted focus on the weekday p.m. peak hour. The mitigation measure is intended to reduce the variant's contribution to transit travel delay on Muni's 57 Parkmerced. The reduction in the variant's vehicle trips would result in a lower variant contribution to the roadways and intersections with bus and light rail lines and a reduction in transit delay. However, the effectiveness of this mitigation measure in reducing the proposed project or variant vehicle trips cannot be guaranteed. The 10 percent reduction is an achievable amount for this project based on published research and the applicability of project location and design. However, it would be speculative to quantify the precise number of vehicle trips (and hence transit travel times) eliminated or reduced along any given segment.

Mitigation Measure M-TR-4b would provide transit travel time reduction measures. This mitigation measure would include a signal coordination plan to reduce northbound bus delay along the corridor by reducing the expected number of stops for buses (and other vehicles) between Winston Drive and Eucalyptus Drive. The coordination would be implemented at the proposed traffic signals along 20th Avenue in between Eucalyptus Drive and Buckingham Way South.

The measure would also include transit signal priority at those signals, which would increase the likelihood that an approaching bus would receive a green signal indication. This would reduce average bus delay in the weekday p.m. peak hour and throughout the day, but the reduction cannot be known at this time and cannot be guaranteed to reduce delay below the significance threshold. This is because the effectiveness of the measure would be subject to uncontrollable factors, including the arrival of buses within the traffic signal

cycle and the location of buses in the traffic stream—both of which affect whether and how much a green phase can be triggered preemptively, whether and how much a green phase can be extended, and whether the bus would benefit from transit signal priority if it were triggered. The delay reductions associated with implementation of this measure would not be uniformly distributed to all bus arrivals within the weekday p.m. peak period and would not be guaranteed to reduce delay to less-than-significant levels. Further, the SFMTA would ultimately review and implement a signal coordination plan, optimizing to balance the competing needs at the subject intersections. Implementation of Mitigation Measure M-TR-4b would require SFMTA approval and therefore cannot be guaranteed.

For the reasons describe above, it cannot be guaranteed that the impact would be reduced to less-than-significant levels. Thus, the impact would remain ***significant and unavoidable***.

Impact TR-5: Operation of the proposed project or variant would not cause substantial additional VMT or substantially induce automobile travel. ***(Less than Significant)***

VEHICLE MILES TRAVELED

As presented in Table 3.B-7, p. 3.B-16, the existing average daily VMT per capita for the transportation analysis zone in which the project site is located in (i.e., TAZ 918), is below the existing regional average daily VMT:

- For residential uses, the Bay Area regional average daily VMT per capita is 18.6, and the significance threshold (15 percent below existing regional average) is 15.8. The existing average daily VMT per capita in TAZ 918 is 8.1, which is below the threshold.
- For office uses, the Bay Area regional average daily VMT per employee is 25.7, and the significance threshold (15 percent below existing regional average) is 21.8. The existing average daily VMT per office employee in TAZ 918 is 18.8, which is below the threshold. The proposed project or variant would include non-retail sales and service uses[116] assessed as office for this analysis. The proposed project would also include childcare and other institutional uses which, as indicated in the SF transportation guidelines, should be treated as office for screening and analysis.
- For retail uses, the Bay Area regional average daily VMT per employee is 14.9, and the significance threshold (15 percent below existing regional average) is 12.7. The existing average daily VMT per retail employee in TAZ 918 is 4.9, which is below the threshold.

Parking provision or supply is positively associated with VMT. The proposed project or variant would have a lower parking ratio or supply of parking spaces compared to property square footage compared to existing conditions within the project site. Under existing conditions, there are 3,400 vehicle parking spaces within the project site. With the existing 818,300 property square footage, the parking ratio is 4.2 parking spaces per 1,000 square feet. The proposed project would result in 850 net new vehicle parking spaces (4,250 in total). The variant would result in 1,050 net new spaces (4,450 in total). The proposed project or variant would result in 3,584,700 net new square footage (4,403,000 square feet in total). In total, the proposed project or

[116] "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102).

variant (including existing uses on site) would provide 1.0 parking spaces per 1,000 square feet compared to 4.2 parking spaces per 1,000 square feet under existing conditions (a 76-percent reduction).

Given the project site is in an area where existing VMT is more than 15 percent below the existing regional average for all the proposed project's and variant's uses and the proposed project's or variant's parking would not substantially induce VMT compared to the existing VMT, the proposed project's and variant's uses would not cause substantial additional VMT and impacts would be less than significant. In addition, the proposed project or variant is presumed to be subject to TDM program which would also reduce VMT. The proposed TDM features are included in Project Features, p. 3.B-23.

INDUCED AUTOMOBILE TRAVEL

The proposed project or variant is not a transportation project. However, the proposed project or variant would include features that would alter the transportation network. These features include:

- Active Transportation, Rightsizing, and Transit Projects:
  - Reduction in number of through lanes
  - Infrastructure projects, including safety and accessibility improvements for people walking or bicycling
  - Installation or reconfiguration of traffic calming devices
  - Creation of new or conversion of existing general purpose lanes to transit lines
  - Creation of new or addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for people walking, bicycling, and, if applicable, riding transit
- Other Minor Transportation Projects:
  - Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or emergency breakdown lanes that are not used as through lanes
  - Conversion of existing general purpose lanes (including vehicle ramps) to managed lanes or transit lanes
  - Timing of signals to optimize vehicle, bicycle, or pedestrian flow on local or collector streets
  - Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
  - Addition of transportation wayfinding signage

These features fit within the general types of projects that would not substantially induce automobile travel.

VARIANT

The variant would have a similar impact on VMT and induced automobile travel as the proposed project with the exception of the following:

- The variant would include a religious use, which is treated as a retail use in the VMT analysis. Per the SF transportation guidelines, religious institution land uses should be treated as retail for screening and analysis.

- The variant would provide approximately 3,723,000 gross square feet of new building area in addition to the 760,000 square feet retained, which would result in a floor area ratio of 2.52 (greater than the 0.75 threshold described in item 2 above).
- The variant would add 1,050 net new vehicle parking spaces (4,450 in total) and 3,664,700 net new footage (4,483,000 square feet in total). The marginal contribution rate would be 0.3 parking spaces per 1,000 square feet. In total, the variant would have 1.0 parking spaces per 1,000 square feet (3.2, or 76 percent lower than existing conditions).

The variant would meet the VMT efficiency criterion and would therefore screen out from further VMT analysis. The proposed transportation network modifications under the variant would also fit in types of projects that would not substantially induce automobile travel.

SUMMARY

Given that the proposed project or variant meets the VMT efficiency screening criterion, they would not cause substantial additional VMT. Additionally, the proposed transportation network modifications under the proposed project or variant fall within the types of transportation project that would not substantially induce automobile travel. Therefore, the proposed project's or variant's impacts related would be ***less than significant***.

Impact TR-6: Operation of the proposed project or variant may result in a loading deficit and secondary effects may create potentially hazardous conditions for people walking, bicycling, or driving or substantially delay public transit. ***(Less than Significant with Mitigation)***

FREIGHT AND COMMERCIAL LOADING DEMAND

The freight and commercial loading demand by parcel for the project is presented in **Table 3.B-17**. Details on the freight and commercial loading demand calculations are provided in Appendix D.1, Travel Demand Memorandum. The proposed project would generate 188 daily delivery and service vehicle trips and generate demand for 36 spaces in the weekday peak hour for freight delivery. Based on this analysis, most of the parcels would have a demand for one to three freight loading spaces during the peak hour, with a maximum of four spaces needed for parcel E3.

The peak period of loading demand typically occurs between 10:00 a.m. and 1:00 p.m. and does not coincide with the weekday p.m. peak period. The average hour and peak hour demand by parcel were calculated for each land use. This analysis is based on conceptual development details for specific parcels.

PASSENGER LOADING DEMAND

The passenger loading demand by parcel for the proposed project is presented in Table 3.B-17. Details on the passenger loading demand calculations are provided in Appendix D.1, Travel Demand Memorandum. The proposed project would generate 307 daily passenger trips and generate demand for 50 spaces in the weekday peak hour for passenger loading (i.e., weekday p.m. peak period).

The passenger peak hour demand by parcel was calculated by land use. This analysis, similar to freight and commercial loading spaces, is based on conceptual development details for specific parcels.

Table 3.B-17 Freight and Passenger Loading Demand by Parcel for Proposed Project

	Freight Loading Demand		Passenger Loading Demand	
Component	Average Hour	Peak Hour	Daily Total	Peak Hour
E1	3	3	31	3
E2	2	2	22	2
E3	4	4	39	7
E4	2	2	24	2
E5	3	3	13	5
E6	1	1	11	6
E7	2	2	3	3
W1	2	2	13	2
W2	2	2	11	3
W3	2	2	24	2
W4	2	2	22	2
S1	3	3	27	3
S2	3	3	33	3
S3	1	1	9	1
NW1	2	2	18	4
NW2	1	1	5	1
NW3	1	1	2	1
Total	***36***	***36***	***307***	***50***

SOURCE: Kittelson & Associates Inc., 2022

LOADING SPACES PROPOSED

Preliminary site plans for the proposed project or variant do not provide the quantity, type, precise location, or other details of any proposed passenger or freight loading spaces. Therefore, estimated demand cannot be compared to proposed supply.

Because of the absence of localized loading supply information, the transportation analysis conservatively assumed that loading supply may be mismatched to demand and a loading deficit may occur in some or all locations on the project site. Depending on each building's entrance and loading locations in relation to sidewalks, crosswalks, bicycle lanes, and transit routes, loading activities may occur in locations that would block, create queues, and/or conflicts at some or all the above facilities, resulting in potentially hazardous conditions and/or substantial delay to transit operations. Therefore, the proposed project may result in a significant impact at the following locations:

- Internal circulation streets that include Muni bus routes

- 20th Avenue, Winston Drive, Buckingham Way South (between Winston Drive and 20th Avenue)
- Proposed two-way class IV bikeways
- 20th Avenue, Winston Drive, Buckingham Way North (between Winston Drive and 20th Avenue)

VARIANT

The freight and passenger loading demand by parcel for the variant is presented in **Table 3.B-18**. Details on the freight and passenger loading demand calculations are provided in Appendix D.1, Travel Demand Memorandum. The variant would generate 192 daily delivery and service vehicle trips and generate demand for 38 spaces in the weekday peak hour for freight delivery. Most of the parcels require zero to three freight loading spaces during the peak hour, with a maximum of six spaces needed for parcel E3.

Table 3.B-18 Freight and Passenger Loading Demand by Parcel for the Variant

	Freight Loading Demand		Passenger Loading Demand	
Component	Average Hour	Peak Hour	Daily Total	Peak Hour
E1	3	3	31	3
E2	2	2	22	2
E3	4	6	47	9
E4	2	2	25	2
E5	3	3	12	5
E6	1	1	9	5
E7	2	2	3	3
W1	2	2	13	2
W2	2	2	10	3
W3	2	2	24	2
W4	2	2	22	2
S1	3	3	27	3
S2	3	3	34	3
S3	1	1	9	1
NW1	2	2	19	3
NW2	1	1	5	1
NW3	1	1	2	1
Total	***36***	***38***	***314***	***50***

SOURCE: Kittelson & Associates Inc., 2022

The variant would generate 314 daily passenger trips and generate demand for 50 spaces in the weekday peak hour for passenger loading (i.e., weekday p.m. peak period).

Similar to the proposed project, due to the absence of localized loading supply information, the analysis conservatively assumes that loading supply may be mismatched to demand and a loading deficit may occur in some or all locations on the project site and the secondary effects could create significant effects.

SUMMARY

With the available information, estimated demand cannot be compared with proposed loading supply for each parcel. Therefore, the analysis conservatively assumes that both freight and commercial loading and passenger loading might result in loading deficit and the secondary effects could create significant impacts. Implementation of **Mitigation Measure M-TR-6, Driveway and Loading Operations Plan (DLOP)**, would be required to reduce impacts related to a potential loading deficit.

> **Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP).** The project sponsor of the project or variant shall prepare and submit a DLOP to the planning department in accordance with any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects), in consultation with the San Francisco Municipal Transportation Agency (SFMTA). The purpose of the DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project- or variant-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes.
>
> The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's or variant's off-street facility and blocking any portion of any private street or public right-of-way during project or variant operations for:
>
> 1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and
> 2. For at least three 24-hour periods in any consecutive seven-day period.
>
> The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase of project construction. A project phase may not begin construction until its DLOP has received Planning approval.
>
> The DLOP may also include, but not limited to, the following measures to reduce potential conflicts:
>
> - **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue. Where no alternative location exists, design driveway or loading dock entrance with sufficient storage

for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks.

- **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time.
- **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock.
- **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility.
- **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business.

The DLOP shall be implemented by the project sponsor of the project or variant in accordance with any guidelines issued by the department pursuant to planning code section 155(u).

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-TR-6 would be required to develop a plan to satisfy freight and commercial and passenger loading demand through loading supply and management at each phase or building. The mitigation measure requires that the project or variant satisfy a performance standard to prevent vehicle queueing and associated secondary effects that would result in conflicts with people walking, bicycling, or driving or to transit. With each building or phase, the project sponsor shall prepare a DLOP, and the DLOP would be reviewed and approved by the department, in consultation with the SFMTA.

Therefore, freight and commercial and passenger loading associated with the proposed project or variant would not create queues and therefore not impede transit operations or create conflicts people walking or bicycling. Given the above, the impact would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative transportation impacts includes the pedestrian facilities, bicycle facilities, transit facilities, and roadways within the transportation study area. The discussion of cumulative transportation impacts assesses the degree to which overall citywide growth, the project or variant, and other reasonably foreseeable projects would affect the transportation network.

Impact C-TR-1: The proposed project or variant, in combination with cumulative projects, would not result in significant construction-related transportation impacts. ***(Less than Significant with Mitigation)***

Construction of the proposed project or variant may overlap with construction of other reasonably foreseeable future development and transportation infrastructure projects in the project vicinity, including future phases of Parkmerced, and SFSU FutureState 2035 projects.

It is anticipated that construction of the proposed project or variant would occur over eight years in overlapping phases. Construction of other reasonably foreseeable future projects in the vicinity of the project site could temporarily generate increased traffic at the same time and on the same roads as the proposed project or variant and influence area-wide circulation patterns. As part of the construction permitting process, the project sponsors of each development project would be required to work with the various City departments to develop detailed and coordinated construction logistics and contractor parking plans, as applicable, that would address construction vehicle routing, traffic control, transit movement, pedestrian movement, and bicycle movement adjacent to the construction area. Although the SFSU Future State 2035 project would not be required to comply with all city requirements, SFSU would be required to adhere to the blue book regulations and public works code addressing transportation-related circulation, access, staging and hours of delivery when working on city streets.

Some portions of the proposed project or variant (those located within public right-of-way) would be subject to city regulations that would require coordination and review with public works and SFMTA that would avoid transportation-related construction impacts. However, the portions of the proposed project or variant that are located in private right-of-way would not be subject to those city regulations so could result in sufficient disruption to result in significant impacts. Therefore, there would be cumulative construction impact to which the proposed project or variant would contribute considerably.

Implementation of Mitigation Measure M-TR-1 would be required to reduce proposed project or variant impacts. The project sponsor would submit a plan to the planning department for review and approval by Public Works in consultation with SFMTA, SFPUC, and any other applicable City agency to demonstrate compliance with the regulations cited in the mitigation measure. The plan would demonstrate how the project's construction would reduce potential conflicts with people walking or bicycling and minimize sidewalk closure or transit stop disruption. The plan would need to be approved prior to the start of construction and would be monitored for compliance throughout. Implementation of Mitigation Measure M-TR-1 would reduce any potential construction-related transportation and circulation impacts to less-than-significant levels. The cumulative impact would be ***less than significant with mitigation***.

Impact C-TR-2: The proposed project or variant, in combination with cumulative projects, would not create potentially hazardous conditions and would not interfere with accessibility. *(Less than Significant)*

Under cumulative conditions, vehicle activity on the surrounding street network would generally increase as a result of the proposed project or variant along with cumulative projects. As with the proposed project or variant, other cumulative development projects subject to city requirements such as Parkmerced would be required to conform to the Better Streets Plan, the Transit-First Policy, and Vision Zero, as applicable. All cumulative projects would be designed consistent with standards that address transportation safety. Further, the effects of increased vehicular traffic from cumulative projects would also be reduced by cumulative transportation infrastructure projects that would improve transportation safety and accessibility, including the Ocean Avenue Mobility Plan, the 19th Avenue Rapid Project, and the Lake Merced Pedestrian Safety Project. Some examples of these projects and their components that would improve transportation safety or accessibility include:

- The Ocean Avenue Mobility Plan would develop new concepts or identify funding and implementation strategies for already-identified projects like protected bike lanes or reconfiguration of the Ocean Avenue/Geneva Avenue/Frida Kahlo Way intersection.
- The 19th Avenue Rapid Project would implement transit priority and pedestrian safety improvements along 19th Avenue to make it safer to walk in the area.
- The Lake Merced Pedestrian Safety Project includes quick-build pedestrian safety improvements like striping and crosswalk upgrades, additional signage, narrowing of traffic lanes, and similar treatments.

Although the SFSU FutureState 2035 project would not be required to comply with the City's Better Streets Plan, the Transit-First Policy, or the TDM program, the SFSU Future State 2035 planning principles encourage the use of various modes of transportation, including BART, Muni, bicycles, and walking and providing convenient connections between transit stops and campus and safe routes for bicycle and pedestrian infrastructure.[117] Additionally, the planning principles identify development of facilities and site improvements that create usable open spaces, universal accessible design standards, and well-integrated design."

Therefore, the proposed project or variant in combination with cumulative projects, would result in ***less than significant*** cumulative impacts related to potentially hazardous conditions and accessibility. No mitigation is required.

Impact C-TR-3: The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably. *(Significant and Unavoidable with Mitigation)*

The same methodology described under Impact TR-4 was applied to the same Muni and SamTrans bus lines and directions. As described in *2050 Modeling*, p. 3.B-45, 2050 modeled volumes associated with the Housing Element 2022 Update EIR were compared to 2020 baseline volumes and 2022 traffic counts taken at study intersections to develop cumulative condition traffic volumes for transit delay analysis. The resulting

[117] San Francisco State University, *Future State 2035 San Francisco State University Campus Vision Plan*, September 14, 2018, https://plan.sfsu.edu/sites/default/files/documents/futurestate_draft.pdf, accessed November 18, 2022.

forecast cumulative volumes were adjusted upwards in the immediate vicinity of the project site to reflect proposed project trips, routes, and turn restrictions so that the cumulative scenario volumes incorporated anticipated turning movements related to project site access. The resulting turning movement counts capture anticipated growth under the Housing Element 2022 Update EIR Proposed Action modeling scenario, including the proposed project or variant. These cumulative turning movement counts thereby also account for Parkmerced's and SFSU's anticipated growth.

MUNI TRANSIT SERVICE

The combined, aggregated transit delay in minutes for each line/route and direction is presented in **Table 3.B-19**. Detailed analysis showing vehicle trip assignment to individual stops and intersections and associated delay increases is included in the calculation sheets in Appendix D.2, Transit Delay Analysis Memorandum.

Table 3.B-19 shows that the cumulative projects would not exceed the delay threshold for all routes, except for two routes. These routes and associated directions consist of:

- 57 Parkmerced inbound and outbound
- 28 19th Avenue and 28R 19th Avenue Rapid combined southbound

The discussion under Impact TR-4 explains qualitatively why the variant's delay to the 57 Parkmerced would constitute a significant impact for existing plus variant conditions. The same rationale applies to why the 57 Parkmerced cumulative delay impacts would be significant. For the 28 19th Avenue and 28R 19th Avenue Rapid combined line analysis, similar considerations apply. The 28 19th Avenue and 28R 19th Avenue Rapid routes travel exclusively along 19th Avenue within the area studied. 19th Avenue typically observes an auto-to-transit travel speed ratio of 1.8 to 2.3 (indicating that auto trips are 1.8 to 2.3 times faster than transit trips).[118] The 28 19th Avenue has an average of between 4,800 and 10,200 average weekday daily boardings in 2022, and the 28R 19th Avenue Rapid had an average of between 700 and 3,400 in 2020.[119,120] Substantial impacts to transit travel time for these routes could result in passengers switching from transit to other modes (e.g., private vehicles, ride-hailing vehicles). Therefore, the cumulative delay impacts to the 28 and 28R combined would be significant.

Table 3.B-20, p. 3.B-81, demonstrates the proposed project and variant contributions to transit corridor delay for the significant cumulative impacts. Proposed project and variant contributions to each route's cumulative delay would range from 17 to 34 percent and would be cumulatively considerable to both routes.

REGIONAL TRANSIT SERVICE

Similar to with the evaluation of Impact TR-4, the analysis of Impact C-TR-4 also evaluates the proposed project or variant's effects on cumulative transit delay for SamTrans Route 122 travel times and applies the half-headway threshold. The results of the transit delay analysis for SamTrans Route 122 are presented in **Table 3.B-21**, p. 3.B-81.

[118] SFCTA, *SFCTA Congestion Tracker*, https://congestion.sfcta.org/.
[119] SFMTA, *SFMTA Weekly Transit Bus Ridership*, https://www.sfmta.com/reports/weekly-transit-bus-ridership.
[120] The daily boarding information of the latest available year is used. Therefore, 2020 data is used for 28R 19th Avenue and 2022 data is used for the other MUNI lines.

Table 3.B-19 Cumulative Local Transit Delay Analysis Results by Line and Direction

Route	Direction	Headway (minutes)	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)
K Ingleside	IB	8	4	4.0	1.0
	OB	8	4	4.0	1.5
M Ocean View	IB	9	4.5	4.0	1.5
	OB	9	4.5	4.0	0.7
18 46th Avenue	IB	20	10	4.0	1.3
	OB	20	10	4.0	2.7
28 19th Avenue	IB	10	5	4.0	1.4
	OB	10	5	4.0	3.0
28R 19th Avenue Rapid	IB	8	5	4.0	1.3
	OB	8	5	4.0	2.0
29 Sunset	IB	9	4.5	4.0	2.4
	OB	9	4.5	4.0	3.6
57 Parkmerced	IB	20	10	4.0	10.0
	OB	20	10	4.0	4.7
58 Lake Merced	IB	30	15	4.0	3.0
	OB	30	15	4.0	1.4
28 + 28R Combined	NB	4.4	2.2	2.2	1.4
	SB	4.4	2.2	2.2	3.0
Winston, 19th/20th	WB	9	4.5	4.5	-0.3
	EB	4.1	2.0	2.0	0.1

ABBREVIATIONS:
IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound
NOTE:
Orange-highlighted cells indicate delay values above the significance threshold.

As shown in Table 3.B-21, the SamTrans Route 122 northbound bus would incur additional delay above the threshold in cumulative conditions. SamTrans Route 122 had an average of 1,891 weekday daily boardings during the one-month period between August 22, 2022, and September 19, 2022. (For more detail refer to Appendix D.1, Travel demand memorandum). Substantial increases in transit travel time on these lines could result in passengers switching from transit to other modes (e.g., private vehicles, ride-hailing vehicles). Therefore, the delay impacts would be substantial and are significant. **Table 3.B-22** demonstrates the proposed project and variant contributions of delay for the significant cumulative impact. Proposed project and variant contributions to the route's cumulative delay would range from 11 to 14 percent and would be cumulatively considerable.

Table 3.B-20 Project and Variant Contributions to Cumulative Impacts

Route	Direction	Total Corridor Travel Delay				Incremental Delay Compared to Existing			Percent Share of Total Cumulative Travel Delay (Contribution)	
		Existing	Existing + Project	Existing + Variant	Cumulative	Existing + Project	Existing + Variant	Cumulative	Project	Variant
57 Parkmerced	IB	4.2	8.1	9.0	14.2	3.9	4.8	10.0	3.9 / 14.2 = 28%	4.8 / 14.2 = 34%
	OB	6.7	9.2	9.7	11.4	2.5	3.0	4.7	2.5 / 11.4 = 22%	3.0 / 11.4 = 27%
28 + 28R Combined	OB	9.7	11.8	11.8	12.6	2.1	2.1	3.0	2.1 / 12.6 = 17%	2.1 / 12.6 = 17%

ABBREVIATIONS:

IB = inbound; OB = outbound

NOTE:

This analysis uses the incremental delay calculated under existing plus project or variant conditions to assess proposed project or variant contributions to cumulative travel delay. However, travel delay increases exponentially with traffic volume, the contributions as shown are a coarse approximation but are appropriate to demonstrate an order of magnitude.

Table 3.B-21 SamTrans Cumulative Transit Delay Analysis Results by Line and Direction

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)
122	NB	20	10	4.0	8.9
	SB	20	10	4.0	1.6

ABBREVIATIONS:

NB = northbound; SB = southbound

NOTE:

Orange highlighted cells indicate delay values above the significance threshold.

Table 3.B-22 Project and Variant Contributions to Cumulative Impacts

Route	Direction	Total Corridor Travel Delay				Incremental Delay Compared to Existing			Percent Share of Total Cumulative Travel Delay (Contribution)	
		Existing	Existing + Proposed Project	Existing + Variant	Cumulative	Existing + Proposed Project	Existing + Variant	Cumulative	Proposed Project	Variant
122	NB	2.4	3.7	4.0	11.3	1.3	1.5	8.9	1.3 / 11.3 = 11%	1.5 / 11.3 = 14%

ABBREVIATIONS:

IB = inbound; OB = outbound

SUMMARY

The proposed project or variant, in combination with cumulative projects, would substantially delay both Muni and regional transit service. Implementation of Mitigation Measure M-TR-4a, M-TR-4b, and M-C-TR-3 would be required.

> **Mitigation Measure M-C-TR-3: Signal Coordination and Transit Signal Priority along 19th Avenue.** The project sponsor of the proposed project or variant shall pay a fair-share contribution for SFMTA to design and install up to two additional closed circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation].
>
> The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-TR-4a would be applicable to both the proposed project and variant under the cumulative conditions. Implementation of Mitigation Measure M-TR-4a would reduce total vehicle trips generated by the proposed project or variant by up to 10 percent on a daily basis and during the weekday p.m. peak hour. The reduction of project vehicle trips would reduce the additional transit delay associated with the proposed project or variant for all Muni and SamTrans routes and reduce the proposed project and variant's contributions to cumulative impacts. However, the effectiveness of this mitigation measure in reducing the proposed project or variant vehicle trips cannot be guaranteed. The 10 percent reduction is an achievable amount for this project based on published research and the applicability of project location and design. However, it would be speculative to quantify the precise number of vehicle trips (and hence transit travel times) eliminated or reduced along any given segment.

Mitigation Measure M-TR-4b would provide transit travel time reduction measures. This mitigation measure would include a signal coordination plan to reduce northbound bus delay along the corridor by reducing the expected number of stops for buses (and other vehicles) between Winston Drive and Eucalyptus Drive. The coordination would be implemented at the proposed traffic signals along 20th Avenue in between Eucalyptus Drive and Buckingham Way South.

The measure would also include transit signal priority at those signals, which would increase the likelihood that an approaching bus would receive a green signal indication. This would reduce average bus delay in the weekday p.m. peak hour and throughout the day, but the reduction cannot be known at this time and cannot be guaranteed to reduce delay below the significance threshold. This is because the effectiveness of the measure would be subject to uncontrollable factors, including the arrival of buses within the traffic signal cycle and the location of buses in the traffic stream—both of which affect whether and how much a green phase can be triggered preemptively, whether and how much a green phase can be extended, and whether the bus would benefit from transit signal priority if it were triggered. The delay reductions associated with implementation of this measure would not be uniformly distributed to all bus arrivals within the weekday p.m. peak period and would not be guaranteed to reduce delay to less-than-significant levels. Further, the SFMTA would ultimately review and implement a signal coordination plan, optimizing to balance the

competing needs at the subject intersections. Implementation of Mitigation Measure M-TR-4b would require SFMTA approval and therefore cannot be guaranteed.

Mitigation Measure M-C-TR-3 would include a fair-share contribution for the design and install of up to two additional closed circuit televisions (CCTVs) at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections. The CCTVs, once installed, would assist the SFMTA staff in observing and responding to sources of delay (i.e., reducing delay) for Muni routes 28 19th Avenue and 28R 19th Avenue. The mitigation measure requires a fair share contribution and does not itself provide for the installation of the CCTVs. Further, the CCTVs allow SFMTA staff to make design changes to reduce delay but do not themselves guarantee delay reduction.

No additional feasible measures were identified that could reduce delays to the 28 and 28R along 19th Avenue.

For SamTrans Route 122, the following two study intersections would experience increases in delay of 7.3 minutes, or almost 500 percent, under cumulative conditions compared to existing plus variant conditions:

- #24 Lake Merced Boulevard/Font Boulevard
- #21 Lake Merced Boulevard/Winston Drive

Incremental delay in the cumulative condition at these two intersections accounts for approximately 7.3 minutes of additional delay to SamTrans Route 122.

Under cumulative conditions, both intersections would experience substantial growth in total entering vehicles in the weekday p.m. peak hour. Most of these total entering vehicles would be associated with the future Parkmerced development to the south of the project site. The proposed project and variant would contribute 3 and 5 percent of all cumulative trips to these intersections, respectively. The Parkmerced EIR identified significant impacts to SamTrans Route 122 northbound and identified mitigation measures to reduce the impact, which include additional lane capacity along Lake Merced Boulevard and queue jump lanes along SamTrans Route 122 to reduce delay for northbound buses.[121] However, these mitigation measures cannot be guaranteed because they are tied to Parkmerced's construction and because the associated transit improvements have not been approved for construction as of this EIR. If they were implemented, the significant cumulative impact would be reduced. No other feasible measures are applicable to SamTrans Route 122.

See Appendix D.2, Transit Delay Analysis Memorandum for discussion on other measures considered but rejected. Thus, this impact would be ***significant and unavoidable with mitigation***.

---

[121] San Francisco Planning Department, *Park Merced Project Final EIR*, November 18, 2010, https://sfplanning.org/project/parkmerced#info, accessed October 2, 2022.

Impact C-TR-4: The proposed project or variant, in combination with cumulative projects, would not cause substantial additional vehicle miles traveled or substantially induce automobile travel. ***(Less than Significant)***

As stated in the approach to analysis, VMT by its very nature is largely a cumulative impact. As discussed under Impact TR-5, p. 3.B-43, the proposed project or variant would not exceed the project-level quantitative thresholds of significance for VMT. In addition, Plan Bay Area meets greenhouse gas reduction targets set by the California Air Resources Board. Furthermore, as shown in **Table 3.B-23**, projected 2050 average daily VMT per capita for the TAZ the project site is located in (i.e., TAZ 918) is more than 15 below the projected 2050 regional average daily VMT:

- For residential uses, the projected 2050 average household daily VMT per capita is 11.1, which is about 35 percent below the projected 2050 regional average household daily VMT per capita of 17.1.
- For office uses, the projected 2050 average daily VMT per office employee is 15.8, which is about 34 percent below the projected 2050 regional average household daily VMT per capita of 23.8. The proposed project or variant would include non-retail sales and service uses to be assessed as office for this analysis. The proposed project or variant would also include institutional uses (including childcare and other institutional uses), which are analyzed as office uses per the SF transportation guidelines.
- For retail uses, the projected 2050 average daily VMT per size is 6.7, which is about 57 percent below the projected 2050 regional average household daily VMT per capita of 15.7. The variant would include religious institutional uses, which are analyzed as retail uses per the SF transportation guidelines.

Therefore, no significant cumulative VMT impacts would occur, and impacts would be ***less than significant***.

Table 3.B-23 Cumulative (2050) Daily Vehicle Miles Traveled per Capita

Land Use	Bay Area Regional Average	Bay Area Regional Average Minus 15 Percent	Project TAZ (TAZ 918)
Residential	17.1	14.5	11.1
Office	23.8	20.	15.8
Retail	15.7	13.3	6.7

SOURCE: San Francisco Housing Element 2022 Update Draft Environmental Impact Report, 2022

Impact C-TR-5: The proposed project or variant, in combination with cumulative projects, would not result in cumulative loading impacts. ***(Less than Significant with Mitigation)***

Under cumulative conditions, freight and passenger loading activity on the surrounding street network would increase as a result of cumulative projects within the study area. While there would be a general increase in vehicle traffic and freight and passenger loading demand associated with planned and reasonably foreseeable development, loading impacts would be localized and site-specific. There are no cumulative projects that could combine with the impacts from project or variant to result in cumulative loading impacts. That is, because loading would occur near the delivery or drop-off/pick-up site, it is not likely that any unmet loading demand from other cumulative projects within the study area would interfere with transportation and circulation within the project site or vice versa. Nonetheless, as discussed under Impact TR-6, a loading deficit may occur in cumulative conditions. Unmet demand could result in secondary

effects to public transit buses or to people walking, biking, or driving, such as blocking, creating queues, and/or conflicts at sidewalks, crosswalks, Muni routes, and bike facilities, which cumulative projects traffic could contribute to.

Given the considerations outlined above, the analysis conservatively assumes the proposed project or variant in combination with cumulative projects in the project vicinity would have significant loading impacts such as blocking bus routes and/or bicycle facilities. Implementation of Mitigation Measure M-TR-6 would be required.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-TR-6 would be required to develop a plan to satisfy freight and commercial and passenger loading demand through loading supply and management at each phase or building. The mitigation measure requires that the project or variant satisfy a performance standard to prevent vehicle queueing and associated secondary effects that would result in conflicts with people walking, bicycling, or driving or to transit. With each building or phase, the project sponsor shall prepare a DLOP, and the DLOP would be reviewed and approved by the department, in consultation with the SFMTA. Therefore, freight and commercial and passenger loading associated with the proposed project or variant would not create queues and therefore not impede transit operations or create conflicts people walking or bicycling. Given the above, the impact would be ***less than significant with mitigation***.

INTENTIONALLY BLANK

3.C Noise and Vibration

3.C.1 Introduction

This section describes the existing noise and vibration environmental setting in the project area, identifies the regulatory framework, evaluates the potential construction-related and operational noise and vibration impacts associated with proposed project or variant implementation, and identifies mitigation measures to avoid or reduce potential significant impacts. Noise and vibration topics consist of temporary or permanent increases in ambient noise levels, generation of excessive groundborne vibration or noise, and exposure to excessive noise levels near airports. Supporting detailed technical information is included in Appendix E, Noise Technical Memorandum.

3.C.2 Environmental Setting

GENERAL CHARACTERISTICS OF NOISE

Sound is characterized by parameters that describe the rate of *oscillation* (frequency) of sound waves, the distance between successive troughs or crests in waves, the speed at which they travel, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize how loud a sound is, and the decibel (dB) scale is used to quantify sound intensity. Because the human ear is not equally sensitive to all sound frequencies, human response is factored into sound descriptions in a process called *A-weighting*, expressed as *dBA*. The dBA, or A-weighted decibel, refers to a scale of noise measurement that reflects the different frequencies that humans can hear. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Human sound perception, in general, is such that a change of only 1 dBA in sound level cannot typically be perceived by the human ear, a change in sound level of 3 dBA is just perceptible, and a change of 5 dBA is clearly noticeable. A 10 dBA increase in the level of a continuous noise represents a perceived doubling of loudness.[122]

NOISE DESCRIPTORS

Noise is commonly defined as sound that is loud, disagreeable, unexpected, or unwanted. Variations in noise exposure over time are typically expressed in terms of a steady-state energy level (called L_{eq}) that represents the acoustical energy of a given measurement, or alternatively as a statistical description of what sound level is exceeded over some fraction (10, 50, or 90 percent) of a given observation period (i.e., L10, L50, L90). L_{max} is the maximum, instantaneous noise level registered during a measurement period. Because people in residential areas are more sensitive to noise intrusion during the evening and at night, an artificial 5 dBA penalty is added to evening noise levels (7 to 10 p.m.) and an artificial 10 dBA penalty is added to nighttime noise levels (10 p.m. to 7 a.m.) to form a 24-hour noise descriptor called the *Community Noise Equivalent Level* (CNEL). Another 24-hour noise descriptor, called the *day-night noise level* (L_{dn}), is similar to CNEL, but L_{dn} does not add the evening 5 dBA penalty between 7 and 10 p.m. In practice, L_{dn} and CNEL usually differ by less than 1 dBA at any given location from transportation noise sources.[123] Community noise environments are generally perceived to be quiet when the day-night L_{dn} is below 45 dBA, moderate in the 45 to 60 dBA

[122] California Department of Transportation, *Technical Noise Supplement (TeNS) to the Traffic Noise Analysis Protocol,* September 2013, pp. 2-44 to 2-45, http://www.dot.ca.gov/env/noise/docs/tens-sep2013.pdf, accessed September 9, 2022.
[123] Caltrans, *Technical Noise Supplement (TeNS) to the Traffic Noise Analysis Protocol*, September 2013, p. 2-48, http://www.dot.ca.gov/env/noise/docs/tens-sep2013.pdf, accessed September 9, 2022.

range, and loud above 60 dBA. Very noisy urban residential areas are usually around 70 dBA L_{dn}. **Table 3.C-1** presents representative noise sources and their corresponding noise levels in dBA at varying distances from the noise sources.

Table 3.C-1 Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 100 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck going 50 mph at 50 feet		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area during daytime		
Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban area during daytime	50	Dishwasher in next room
Quiet urban area during nighttime	40	Theater, large conference room (background)
Quiet suburban area during nighttime		
	30	Library
Quiet rural area during nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

SOURCE: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, p. 2-20.
ABBREVIATION:
dBA = A-weighted decibel

NOISE FROM MULTIPLE SOURCES

In urban environments, noise commonly occurs from multiple sources simultaneously. Because sound pressure levels, in decibels, are based on a logarithmic scale, they cannot be combined in an additive

fashion. When a new noise source is added to an existing noise source, with both producing noise at the same level, the noise-level value would not double, as would be the case when adding arithmetically.

Decibel additions from multiple noise sources can be estimated when the noise levels from two simultaneously operating sources are known. If the difference between the two noise sources is 1 dBA or less, the resultant noise level will be 3 dBA greater than the source with the higher decibel value. If the difference between the two noise sources is 2 to 3 dBA, the resultant noise level will be 2 dBA greater than the source with the higher decibel value. If the difference between two noise sources is 4 to 10 dBA, the resultant noise level will be 1 dBA greater than the source with the higher decibel value. When the difference between two noise sources is 10 dBA or more, the source with the higher decibel value will dominate, and the resultant noise level will be roughly equal to the source with the higher decibel value.

HEALTH EFFECTS OF ENVIRONMENTAL NOISE

The World Health Organization is a recognized source of knowledge regarding health impacts, including those generated by noise. According to the World Health Organization, one health effect is sleep disturbance, which can occur when continuous indoor noise levels exceed 30 dBA (L_{eq}) or when intermittent interior noise levels reach or exceed 45 dBA (L_{max}), particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the World Health Organization criteria suggest that acceptable nighttime ambient noise levels should be 45 dBA (L_{eq}) or below, and short-term events should not generate noise in excess of 60 dBA (L_{max}). The World Health Organization also notes that maintaining noise levels within the recommended levels during the first part of the night helps people to fall asleep.[124]

Other potential health effects of noise identified by the World Health Organization include decreased performance on complex cognitive tasks, such as reading, attention, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, or shorter-term exposure to very high noise levels, for example, exposure several times a year to a concert with noise levels at 100 dBA). Noise can also disrupt speech intelligibility at relatively low levels; for example, in a classroom setting, a noise level as low as 35 dBA can disrupt clear understanding. Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. The World Health Organization reports that during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA, or moderately annoyed by activities with noise levels below 50 dBA.

Vehicle traffic and continuous sources of machinery and mechanical noise contribute to unhealthy ambient noise levels. Short-term noise sources, such as large vehicle audible warnings, the crashing of material being loaded or unloaded, car doors slamming, and engines revving, contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and annoyance. The effect of noise on sensitive receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels at night can disturb sleep.

[124] World Health Organization, *Guidelines for Community Noise,* April 1999, Chapter 3, p. 46.

Long-term or permanent hearing loss may result from the cumulative effects of exposure to high noise levels. The potential for hearing loss increases with higher noise levels, which can occur over shorter durations of exposure.

VIBRATION AND GROUNDBORNE NOISE

Vibration is an oscillatory motion through a solid medium. Typically, groundborne vibrations generated by man-made activities attenuate rapidly with the distance from the source of the vibration. The effects of vibration on structures are typically measured by peak particle velocity (PPV) in inches per second (in/sec). Vibration decibels (VdB) is the unit used to assess effects of vibrations on people and to distinguish vibration decibels from sound decibels (dB). With the exception of long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. People may tolerate infrequent, short-duration vibration levels, but human annoyance to vibration becomes more pronounced if the vibration is continuous or occurs frequently. High levels of vibration can damage fragile buildings or interfere with sensitive equipment. Depending on the age of the structure and type of vibration (transient, continuous, or frequent intermittent sources), vibration levels as low as 0.5 to 2.0 in/sec PPV can damage a structure.[125]

Typical sources of groundborne vibration in San Francisco are large-scale construction projects that involve pile driving, vibratory construction equipment, or underground tunneling. Vibration is also caused by transit vehicles in the subway system and on the surface, including Muni light-rail vehicles, historic streetcars, and Bay Area Rapid Transit (BART) trains. In general, such vibration is only an issue when there are sensitive receptors located nearby. Since rubber tires and suspension systems reduce vibrations, rubber tire vehicles such as Muni buses, trucks, and automobiles rarely create substantial vibration absent a bump in the road surface.[126]

Groundborne noise refers to noise generated by vibrations from outside a structure but experienced inside the structure. Groundborne noise can be a problem in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing near homes or other noise-sensitive structures. The proposed project or variant would not generate appreciable levels of groundborne noise; therefore, groundborne noise is not discussed further.

EXISTING CONDITIONS

EXISTING NOISE SOURCES

The project site is located in the Lakeshore area in southwest San Francisco and currently includes the Stonestown Galleria shopping mall and surrounding surface parking. Adjacent land uses consist primarily of institutional, residential, and open space land uses. The project site is generally bounded by San Francisco State University (SFSU) Campus to the south; Lowell High School, SFSU housing, and Buckingham Way to the west. Noise sources in the project area consist of vehicle traffic on Buckingham Way, 20th Avenue, Winston Drive, Eucalyptus Drive, and 19th Avenue. Other noise sources that marginally contribute to the noise environment are Muni M-Ocean View light-rail operations adjacent to the project site on 19th Avenue. Noise

[125] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2020, Table 19, p. 38, https://dot.ca.gov/programs/environmental-analysis/noise-vibration/guidance-manuals, accessed September 9, 2022.
[126] U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018, p. 11, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed September 9, 2022.

sources at the project site consist of vehicle traffic within the 27-acre surface parking lot and internal roadways, trucks, and loading activities.

EXISTING GROUNDBORNE VIBRATION SOURCES

The only existing source of vibration in the project area is from the Muni M-Ocean View light-rail operations on 19th Avenue adjacent to the eastern project boundary. The light-rail tracks are located approximately 80 feet east of the project site and constitute the only source of vibration within 1,000 feet of the project site. Light-rail passenger trains generate a vibration level of 69 VdB (0.01 in/sec PPV) at a distance of 80 feet from the rail centerline.[127] A vibration velocity level of 75 VdB is considered to be the approximate transition zone between barely perceptible and distinctly perceptible levels for many people.[128]

NOISE-SENSITIVE RECEPTORS

Noise-sensitive receptors are defined as residential land uses, hospitals, convalescent homes, schools, and churches.[129] Wildlife may also be sensitive to noise; however, because the proposed project or variant is in an urban area and would not introduce new development near sensitive wildlife habitat, noise impacts on sensitive wildlife are not discussed further. In addition, this analysis considers hotels and motels to be noise-sensitive receptors during nighttime hours. As noted above, sensitivity to noise may vary with the source of noise and land use context. Human reaction to a new noise environment may be predicted by comparing it with the existing ambient noise level. In general, the more a new noise source exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. Existing noise-sensitive receptors within 900 feet of the project site are composed of residential, school, library and churches, as listed below in **Table 3.C-2** and shown in **Figure 3.C-1**, p. 3.C-7.[130]

Table 3.C-2 Existing Noise-Sensitive Receptors within 900 Feet of the Project Site

Type of Sensitive Receptor	Location	Distance from Project Site Work Area	Representative Monitoring Location
WITHIN 900 FEET OF NORTHERN EXTENT OF PROJECT SITE			
Single Family Residential	3000 block 19th Avenue	280–900 feet	LT-6
Single Family Residential	3000 block 20th Avenue	280–900 feet	LT-6
Single Family Residential	3000 block 21st Avenue	420–900 feet	ST-3
Single Family Residential	3000 block 22nd Avenue	420–900 feet	ST-4
Single Family Residential	3000 block 23rd Avenue	200–900 feet	ST-4
Single Family Residential	3000 block 24th Avenue	200–900 feet	ST-2
Single Family Residential	3000 block 25th Avenue	350–900 feet	ST-2

[127] U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018, p. 137, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed September 22, 2022.
[128] Ibid., p. 120.
[129] Governor's Office of Planning and Research, *State of California 2017 General Plan Guidelines,* 2017, p. 136, http://www.opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf, accessed September 19, 2022.
[130] This distance accounts for typical construction noise levels, which attenuate to approximately 55 dBA at a distance of 900 feet if there is a direct line-of-sight between a noise source and a noise-sensitive receptor (i.e., two pieces of equipment generating 85 dBA would attenuate to 55 dBA over a distance of 900 feet).

Type of Sensitive Receptor	Location	Distance from Project Site Work Area	Representative Monitoring Location
Single Family Residential	100 block Inverness Drive	700–900 feet	ST-2
Single Family Residential	479, 485, and 501 Eucalyptus Drive	100–170 feet	ST-2
St. Stephen Catholic Church and School	451 and 601 Eucalyptus Drive	40 feet	ST-2
Lowell High School	1101 Eucalyptus Drive	330–900 feet	ST-2
Lakeside Presbyterian Church and Child Center	201 Eucalyptus Drive	170–350 feet	LT-6
WITHIN 900 FEET OF EASTERN EXTENT OF PROJECT SITE			
Single Family Residential	100 block of Eucalyptus Drive	550–900 feet	ST-4
Single Family Residential	All homes on Rossmoor Drive	280–900 feet	ST-4
Single Family Residential	All homes on Stonecrest Drive	180–870 feet	LT-4
Single Family Residential	All homes on Broadmoor Drive	460–680 feet	ST-5
Single Family Residential	500 to 700 block Junipero Serra Boulevard (East side only)	720–900 feet	ST-5
Single Family Residential	1 to 77 Denslowe Drive	320–900 feet	LT-5
Single Family Residential	1 to 39 Stratford Drive	750–900 feet	LT-5
Single Family Residential	1 to 189 Winston Drive	190–720 feet	LT-5
Chinese American International School[a]	3250 19th Avenue	250 feet	ST-5
SF Library Merced Campus	155 Winston Drive	200 feet	LT-7
Authentic Church	3355 19th Avenue	25 feet	LT-5
WITHIN 900 FEET OF WESTERN AND SOUTHERN EXTENT OF PROJECT SITE			
SFSU Residential Housing	400 Block Winston Avenue	50–220 feet	LT-2
SFSU Residential Housing	Buckingham Way	80–780 feet	LT-3

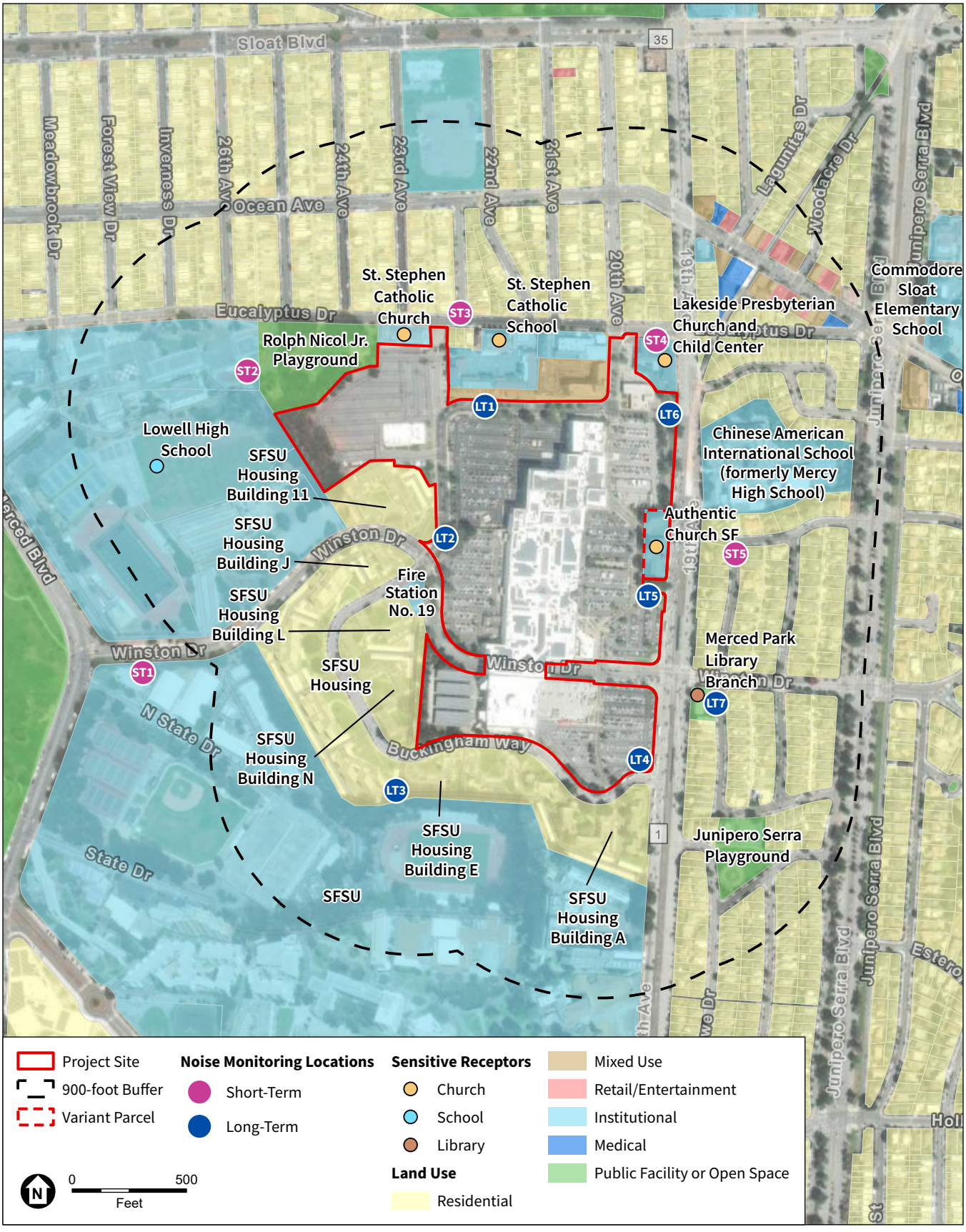
SOURCES: ESA, 2022; Google Earth, Imagery Date 9/11/2017, for parcel data (address and distance to the site).

ABBREVIATIONS:

LT = long term; ST = short term

NOTES:

[a] Formerly Mercy High School



SOURCE: Maxar, 2021; San Francisco Planning Department, 2022; Google, 2022; ESA, 2022

Stonestown Development Project

FIGURE 3.C-1
NOISE MONITORING LOCATIONS, SENSITIVE RECEPTORS, AND SURROUNDING LAND USE

AMBIENT NOISE MEASUREMENTS

To characterize the background noise environment in the project vicinity, seven long-term (24 hours) and five short-term (15 minutes) measurements were collected in May 2022 (see Figure 3.C-1).[131] The monitoring locations were selected to characterize the existing noise environment at sensitive receptors in the project vicinity, as outlined above.

A summary of noise measurement results is presented in **Table 3.C-3** (see Appendix E for noise measurement data). As shown in Table 3.C-3, noise measurements indicate that daytime noise levels in the study area range from 50 to 69 dBA, while nighttime noise levels range from 53 to 65 dBA. Noise sources vary by monitoring location but generally consist of vehicle and bus traffic on the local roadways.

Table 3.C-3 Existing Noise Environment in the Project Vicinity

	Location	Date and Time Period	Daytime[a] L_{eq} dB	Nighttime[b] L_{eq} dB	CNEL	L_{dn}	Noise Sources
LONG TERM MEASUREMENTS (24 HOURS)							
LT-1	Across the street from 553 Buckingham Way	5/24/22 24-hour measurement	60	53	62	61	Vehicle and bus traffic on Buckingham Way
LT-2	Intersection of Winston Drive and Buckingham Way	5/24/22 24-hour measurement	64	57	65	65	Vehicle and bus traffic on Buckingham Way and Winston Drive.
LT-3	Buckingham Way between SFSU Housing Building E and Building F	5/26/22 24-hour measurement	55	55	61	61	Vehicle traffic on Buckingham Way
LT-4	Southeast corner of the shopping mall parking lot (Lot B) at Buckingham Way and 19th Avenue	5/26/22 24-hour measurement	69	65	73	72	Vehicle traffic on Buckingham Way and 19th Avenue and in parking lot traffic (Lot B)
LT-5	Parking lot (Lot C) on the south side of Authentic Church	5/26/22 24-hour measurement	65	60	67	67	Parking lot vehicle traffic (Lot C)
LT-6	Behind Lot F of the shopping mall parking lot adjacent to 19th Avenue	5/24/22 24-hour measurement	60	55	63	63	Parking lot vehicle traffic (Lot F)
LT-7	Stonecrest Drive adjacent to Merced Branch Library	5/26/22 24-hour measurement	61	55	63	62	Vehicle traffic on Winston Drive and Stonecrest Drive

[131] All monitoring was conducted using a Larson Davis LxT sound level meter, which was calibrated prior to use and operated according to the manufacturer's specifications.

	Location	Date and Time Period	Daytime[a] L_{eq} dB	Nighttime[b] L_{eq} dB	CNEL	L_{dn}	Noise Sources
SHORT-TERM MEASUREMENTS (15 MINUTES)							
ST-1	1600 North State Drive	5/24/22 1:06 to 1:21 p.m.	64.7	N/A	N/A	N/A	Vehicle and bus traffic on North State Drive, and nearby pedestrians talking
ST-2	Between Lowell High School and Rolph Nicol Jr. Playground	5/24/22 12:19 to 12:34 p.m.	49.7	N/A	N/A	N/A	Vehicle traffic on Meadowbrook Drive and nearby pedestrians talking, and birds
ST-3	Melba Avenue and Eucalyptus Drive	5/24/22 11:42 to 11:57 a.m.	51.8	N/A	N/A	N/A	Vehicle traffic on Eucalyptus Drive and Melba Avenue, distant bird chirping, and nearby pedestrians talking
ST-4	201 Eucalyptus Drive	5/24/22 11:11 to 11:27 a.m.	66.1	N/A	N/A	N/A	Vehicle and bus traffic on 19th Avenue and Eucalyptus Drive, and nearby pedestrians talking
ST-5	100 Stonecrest Drive	5/24/22 1:33 to 1:48 p.m.	50.2	N/A	N/A	N/A	Vehicle traffic on Stonecrest Drive, and birds

ABBREVIATIONS:

N/A = data point not applicable to short term measurements; LT = long term; ST = short term; L_{eq} dB = average or constant sound level; CNEL = Community Noise Equivalent Level; L_{dn} = day-night noise level

NOTES:

[a] Daytime hours are 7 a.m. to 10 p.m.
[b] Nighttime hours are 10 p.m. to 7 a.m.

VIBRATION-SENSITIVE RECEPTORS

Receptors sensitive to vibration include structures (especially older masonry structures), special buildings as defined by the Federal Transit Administration (e.g., concert halls, TV and recording studios, and theaters),[132] people (especially residents, the elderly, and the sick), and equipment (e.g., magnetic resonance imaging equipment, high-resolution lithographic, optical and electron microscopes).[133] **Table 3.C-4** presents the offsite structures adjacent to the project boundary that could be sensitive to vibration. There are no hospitals, recording studios, performance studios or land uses likely to operate vibration-sensitive equipment within 500 feet of the project site.

[132] United States Department of Transportation, Federal Transit Administration, Office of Planning and Environment, *Transit Noise and Vibration Impact Assessment Manual,* September 2018, p. 124.
[133] Ibid., p. 8-3.

Table 3.C-4 Vibration-Sensitive Structures Adjacent to Project Boundary

Address	Use	Distance from Project Boundary	Year Built[a]
201 Eucalyptus Drive	Church	55 feet	1952
333 Eucalyptus Drive	School	100 feet	1953
3355 19th Avenue	Church	25 feet	1947
1-387 Buckingham Way	SFSU Student Housing	50 feet (at nearest point)	1951
390 Buckingham Way	Fire Station 19	80 feet	1953[b]
601 Eucalyptus Drive	School	400 feet	1963
473 Eucalyptus Drive	School	200 feet	1954
479 Eucalyptus Drive	Residential	175 feet	N/A
485 Eucalyptus Drive	Residential	150 feet	1948
501 Eucalyptus Drive	Residential	125 feet	1949
595 Buckingham Way	Commercial	100 feet	1948

NOTES:

N/A= Not available

[a] Ages of structures were obtained from the planning department's Project Information Map website, https://sfplanninggis.org/pim/.
[b] Fire Station 19 is a contributor to the California Register-eligible San Francisco 1852 Firehouse Bond Act Thematic District and is considered a historic resource.

3.C.3 Regulatory Framework

FEDERAL REGULATIONS

NOISE

In 1972, Congress passed the Noise Control Act (42 United States Code section 4901, et seq.) to establish a requirement for all federal agencies to administer their programs in a manner that promotes an environment that is free of noise that jeopardizes public health and welfare. The U.S. EPA established guidelines for noise levels that would be considered safe for community exposure without the risk of adverse health or welfare effects, which are summarized in **Table 3.C-5**.

The U.S. EPA found that to prevent hearing loss over the lifetime of a sensitive receptor, the yearly average L_{eq} should not exceed 70 dBA, and the L_{dn} should not exceed 55 dBA in outdoor activity areas or 45 dBA indoors to prevent interference and annoyance.[134] In 1982, noise control was largely passed to state and local governments.

[134] U.S. Environmental Protection Agency (U.S. EPA), *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974.

Table 3.C-5 Summary of Noise Level Effects

Effect	Level	Area
Hearing loss	< 70 dBA[a] (L_{eq}, 24-hour)	All areas
Outdoor activity interference and annoyance	< 55 dBA (L_{dn})	Outdoor residential areas and farms as well as other outdoor areas where people spend varying amounts of time and places where quiet is a basis for use
Outdoor activity interference and annoyance	< 55 dBA (L_{eq}, 24-hour)	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	< 45 dBA (L_{dn})	Indoor residential areas
Indoor activity interference and annoyance	< 45 dBA (L_{eq}, 24-hour)	Other indoor areas with human activities, such as schools, etc.

SOURCE: U.S. EPA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974, http://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.pdf, accessed September 9, 2022.

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level; L_{dn} = day-night noise level

NOTE:

[a] Yearly average equivalent sound levels in decibels; the exposure period that results in hearing loss at the identified level is 40 years.

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating, or at least the size of a small delivery truck).[135] The federal truck pass-by noise standard is 80 dBA at 50 feet from the vehicle pathway centerline, under specified test procedures. These requirements are implemented through regulatory controls on truck manufacturers.

FEDERAL TRANSIT ADMINISTRATION STANDARDS FOR CONSTRUCTION NOISE

While the FTA's Transit Noise and Vibration Impact Assessment Manual (FTA Manual) was developed for determining significant noise and vibration impacts for transit projects and is not a regulation, it is one of the few federal sources that suggest both a methodology and criteria for assessing construction noise impacts. The FTA Manual does not contain standardized criteria for assessing construction noise impacts but does include guidelines for noise limits at land uses where an adverse community reaction may occur. **Table 3.C-6** provides the FTA guidelines. These criteria are absolute noise contribution values from construction activity and are independent of existing background noise levels. The planning department uses the FTA's residential daytime construction noise criteria of 90 dBA L_{eq} when assessing daytime construction noise impacts.

[135] Code of Federal Regulations title 40, part 205, subpart B.

Table 3.C-6 Federal Transit Administration Construction Noise Impact Guidelines

Adjacent Land Use	Maximum 1-Hour L_{eq} (dBA)	
	Day	Night
Residential	90	80
Commercial	100	100
Industrial	100	100

SOURCE: Federal Transit Administration, Office of Planning and Environment, *Transit Noise and Vibration Impact Assessment Manual*, September 2018, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed September 22, 2022

ABBREVIATIONS: dBA = A-weighted decibels; L_{eq} = average or constant sound level;

NOTES: Day = 7 a.m. to 10 p.m.; Night = 10 p.m. to 7 a.m.

VIBRATION

Groundborne vibration and noise can also disturb people who are generally more sensitive to vibration during nighttime hours when sleeping than during daytime waking hours. The FTA has developed guidelines for the assessment of vibration impacts. **Table 3.C-7** provides FTA's criteria regarding vibration annoyance potential (expressed here as VdB).

Table 3.C-7 Federal Transit Administration General Assessment Criteria for Groundborne Vibration

Land Use Category	Impact Levels (VdB; relative to 1 micro-inch/second)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

SOURCE: Federal Transit Administration, Office of Planning and Environment, *Transit Noise and Vibration Impact Assessment Manual*, September 2018, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed September 22, 2022.

ABBREVIATION:

VdB = Vibration decibel

NOTES:

[a] "Frequent events" is defined as more than 70 vibration events from the same source per day.
[b] "Occasional events" is defined as 30 to 70 vibration events from the same source per day.
[c] "Infrequent events" is defined as fewer than 30 vibration events from the same source per day.
[d] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define what is acceptable.

STATE REGULATIONS

NOISE

California requires each local government entity to perform noise studies and implement a noise element as part of its general plan. Land use guidelines for evaluating the compatibility of various land uses as a function of community noise exposure are discussed under "Local Regulations."

The 2019 California Building Code (California Code of Regulations title 24, part 2) requires that walls and floor/ceiling assemblies separating dwelling units from each other, or from public or service areas, have a sound transmission class of at least 50, meaning they can reduce noise by a minimum of 50 dB.[136] Building code section 1207.4, Allowable Interior Noise Levels, also specifies a maximum interior noise limit of 45 dBA (L_{dn} or CNEL) in habitable rooms, and requires that common interior walls and floor/ceiling assemblies meet a minimum sound transmission class rating of 50 for airborne noise. It also sets an interior performance standard of 45 dBA from exterior noise sources.

VIBRATION

There are no state regulations related to construction-induced vibration. However, the California Department of Transportation (Caltrans) provides guidance regarding the evaluation of vibration impacts associated with construction activities in the *Transportation and Construction Vibration Guidance Manual.*[137] **Table 3.C-8** shows the criteria developed by Caltrans. The building damage criteria for continuous vibration sources is about half of the criteria for transient sources.

Table 3.C-8 Vibration Guidelines for Potential Damage to Structures

Structure Type and Condition	Maximum PPV (in/sec)	
	Transient Sources[a]	Continuous/Frequent Intermittent Sources[b]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

SOURCE: Caltrans, *Transportation and Construction Vibration Guidance Manual*, April 2020.

ABBREVIATIONS:

in/sec = inches per second; PPV = peak particle velocity

NOTES:

[a] Transient sources create a single, isolated vibration event, such as blasting or drop balls.
[b] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

[136] California Building Standards Code section 1206.2.
[137] Caltrans, *Transportation and Construction Vibration Guidance Manual,* April 2020, Table 19, p. 38, https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf, accessed September 20, 2022.

LOCAL REGULATIONS

SAN FRANCISCO GENERAL PLAN

The Environmental Protection Element of the San Francisco General Plan contains Land Use Compatibility Guidelines for Community Noise for determining the compatibility of various land uses with different noise levels (see **Table 3.C-9**). These guidelines, which are similar to the state guidelines set forth by the Governor's Office of Planning and Research, indicate maximum acceptable noise levels for various land uses. Although this table presents a range of noise levels that are considered compatible or incompatible with various land uses, the maximum *satisfactory* noise level is 60 dBA (L_{dn}) for residential and hotel uses; 65 dBA (L_{dn}) for school classrooms, libraries, churches, and hospitals; 70 dBA (L_{dn}) for playgrounds, parks, office uses, retail commercial uses, and noise-sensitive manufacturing/communications uses; and 77 dBA (L_{dn}) for other commercial uses such as wholesale, some retail, industrial/manufacturing, transportation, communications, and utilities.

The Environmental Protection Element includes the following objectives and policies that pertain to noise: impose traffic restrictions to reduce transportation noise; discourage changes in streets that will result in greater traffic noise in noise-sensitive areas; minimize impact of noise on affected areas; promote site planning, building orientation and design, and interior layout that lessen noise intrusion; promote the incorporation of noise insulation materials in new construction; construct physical barriers to reduce noise transmission from heavy traffic carriers; and promote land uses that are compatible with various transportation noise levels.

SAN FRANCISCO NOISE ORDINANCE

In San Francisco, regulation of noise is addressed in article 29 of the San Francisco Police Code (noise ordinance), which states the city's policy is to prohibit unnecessary, excessive, and offensive noises from all sources subject to police power. Noise ordinance section 2900 makes the following declaration with regard to community noise levels: "It shall be the policy of San Francisco to maintain noise levels in areas with existing healthful and acceptable levels of noise and to reduce noise levels, through all practicable means, in those areas of San Francisco where noise levels are above acceptable levels as defined by the World Health Organization's Guidelines on Community Noise."

Construction Noise

Noise ordinance article 29, sections 2907 and 2908, regulates construction equipment and construction work at night, while section 2909 provides for limits on any machine, or device, music or entertainment, or any combination of such sources. Sections 2907 and 2908 are enforced by San Francisco Public Works (public works), and section 2909 is enforced by the San Francisco Department of Public Health. Summaries of these and other relevant sections are presented below.

Noise ordinance section 2907(a) limits noise from construction equipment to 80 dBA when measured at a distance of 100 feet from such equipment, or an equivalent sound level at some other convenient distance. Exemptions to this requirement include impact tools with approved mufflers, pavement breakers, and jackhammers with approved acoustic shields; and construction equipment used in connection with emergency work. However, section 2907(b) requires that all such equipment be used with manufacturer-approved acoustic shields. Noise ordinance section 2908 prohibits nighttime construction (between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dBA at the nearest property line unless a special permit has been issued by the City.

Table 3.C-9 San Francisco Land Use Compatibility Chart for Community Noise

Land Use Category	Sound Levels and Land Use Consequences (L_{dn} Values in dBA)							
	55	60	65	70	75	80	85	
Residential – All Dwellings, Group Quarters								
Transient Lodging – Motels, Hotels								
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes, etc.								
Auditoriums, Concert Halls, Amphitheaters, Music Shells								
Sports Arenas, Outdoor Spectator Sports								
Playgrounds, Parks								
Golf Courses, Riding Stables, Water-Based Recreation Areas, Cemeteries								
Office Buildings – Personal, Business, and Professional Services								
Commercial – Wholesale and Some Retail, Industrial/Manufacturing, Transportation, Communication, and Utilities								
Manufacturing – Noise-Sensitive Communications – Noise-Sensitive								

SOURCE: San Francisco Planning Department, *San Francisco General Plan*, Environmental Protection Element, adopted on June 27, 1996, https://generalplan.sfplanning.org/I6_Environmental_Protection.htm#ENV_TRA_11, accessed September 9, 2022.

ABBREVIATIONS: L_{dn} = day-night noise level; dBA = a-weighted decibel

Satisfactory, with no special noise insulation requirements. Noise levels in this range are considered "Acceptable."

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Noise levels in this range are considered "Conditionally Acceptable."

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Noise levels in this range are considered "Conditionally Unacceptable."

New construction or development should generally not be undertaken. Noise levels in this range are considered "Unacceptable."

Fixed Mechanical Noise

Noise ordinance section 2909 generally prohibits fixed mechanical equipment noise and music in excess of 5 dBA above the ambient noise level from residential sources, 8 dBA more than the ambient noise level from commercial sources, and 10 dBA more than the ambient noise level on public property at a distance of 25 feet or more. Specifically, section 2909(c) generally prohibits noise from being produced by any machine or device, or any combination of the two, on public property, that exceeds the local ambient noise level more than 10 dBA at a distance of 25 feet or more, unless the machine or device is being operated to serve or maintain the property.

The standards in section 2909(d), 45 dBA between 10 p.m. and 7 a.m. and 55 dBA between 7 a.m. and 10 p.m., are the absolute maximum allowable level of interior noise, produced from any combination of mechanical device(s) and audio systems(s) under one ownership/use originating from outside the dwelling unit. The standards in this section may not apply to areas in which the ambient noise level exceeds the limits.

ENTERTAINMENT NOISE

San Francisco Administrative Code section 90.1 establishes the role of the San Francisco Entertainment Commission to regulate, promote, and enhance the field of entertainment in San Francisco.

Pursuant to police code section 1060.1, the entertainment commission has permit authority over a variety of different permit types including Place of Entertainment permits, Outdoor Amplified Sound/Loudspeaker permits, and Limited Live Performance permits. Promoters of any proposed outdoor events that would use amplified sound or music are required to obtain a permit from the City prior to the event. Permit hearings require the applicant to provide proof of neighborhood outreach to the entertainment commission. Note that police code article 1, section 47.2, while generally focused on truck-mounted amplification equipment, regulates the use of any sound amplifying equipment, whether truck-mounted or otherwise. Hours of operation are restricted to between 9 a.m. and 10 p.m., unless otherwise permitted by the entertainment commission.

3.C.4 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

San Francisco Administrative Code chapter 31 directs the planning department to identify the environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G, as modified by the San Francisco Planning Department. As it relates to noise and vibration, the checklist asks whether the project would result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a project located within the vicinity of a private airstrip or an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels.

The project site is not within the vicinity of a private airstrip or an airport land use plan area.[138] Therefore, the proposed project or variant would not result in the long-term exposure of people residing or working in the area to excessive airport-related noise levels and this topic is not addressed further.

APPROACH TO ANALYSIS

METHODOLOGY FOR ASSESSMENT OF CONSTRUCTION NOISE

SENSITIVE RECEPTORS AND CONSTRUCTION PHASING

Project construction would require the operation of heavy equipment on the project site, which could potentially affect existing, offsite noise-sensitive receptors within 900 feet of the project site, as described in Table 3.C-2, p. 3.C-5 and shown in Figure 3.C-1, p. 3.C-7, and future onsite residential sensitive receptors, shown as residential uses in Figure 2-4, p. 2-11. This analysis considers the potential noise effects on these sensitive receptors with respect to construction phasing.

For this draft EIR, it was conservatively assumed that the proposed project or variant is estimated to be constructed over a period of eight years in six phases, as shown in **Table 3.C-10**. The first phase of construction is anticipated to start on the northwest portion of the project site, near Eucalyptus Drive, and the last phase of construction is anticipated to end in the south portion of the project site, near Buckingham Way and 19th Avenue. Project construction could occur over a longer period, depending on market conditions and permitting requirements.

Table 3.C-10 Preliminary Estimated Construction Schedule

Construction Phase	Start	Finish	Duration (Months)
Phase 1 and 1B	Month 1	Month 45	45
Phase 2	Month 12	Month 56	44
Phase 3	Month 26	Month 54	28
Phase 4[a]	Month 36	Month 80	44
Phase 5	Month 48	Month 91	43
Phase 6	Month 60	Month 96	36
Total	***Month 1***	***Month 96***	***96***

SOURCE: Brookfield Properties Development 2022

NOTE:

[a] The construction of the Authentic Church parcel under the variant would be accommodated within Phase 4.

Applying the most condensed construction schedule is a conservative assumption (i.e., would result in the noisiest conditions) because it assumes the maximum equipment operations and truck hauling in a given phase of construction as well as overlapping construction phases. All construction phases could affect the existing, offsite sensitive receptors (the first group of sensitive receptors discussed above). Potential impacts to future onsite of sensitive receptors would occur following completion of earlier phases and occupation of

[138] San Francisco International Airport, 2019 Noise Exposure Map, August 13, 2015.

the sensitive receptors (residential, childcare and hotel uses) constructed therein. The proposed phasing schedule would expose future onsite residents/occupants of earlier, completed phases to noise and/or vibration from the construction of later phases.

CONSTRUCTION NOISE

The proposed project variant's construction equipment and schedule were provided by the project sponsor, as shown above. The daytime construction noise analysis uses quantitative metrics in addition to other construction characteristics to determine whether a significant construction noise impact would occur as a result of implementation of the proposed project or variant.

Noise levels for individual pieces of construction equipment are regulated by noise ordinance section 2907(a), which requires that equipment have a noise-level limit of 80 dBA at 100 feet from the source; impact tools that exceed the limit are required to be fitted with mufflers, acoustical shields, or enclosures. The use of multiple pieces of equipment simultaneously on one or more building sites is not covered under the ordinance. Therefore, the impacts of combined construction noise is analyzed based on FTA guidance. The construction noise analysis evaluates, using the FTA general construction assessment criterion (i.e., 90 dBA 1-hour L_{eq} at the nearest noise-sensitive receptor), the noise level resulting from simultaneous operation of the two loudest pieces of equipment and whether the noise level would be 10 dBA or greater above the ambient noise level at the locations of sensitive receptors. FTA's general construction noise assessment approach recommends assessing the two noisiest pieces of construction equipment operating concurrently at the center of the project site.[139] However, for the purpose of conducting a conservative analysis and given the size of the project site, equipment noise was assumed to occur in areas closest to a sensitive receptor instead of at the center of the site. Consistent with FTA and the Federal Highway Administration (FHWA) methodology, this increase in construction noise is assessed relative to an hourly L_{eq} and accounts for equipment percentage uses as inventoried by FHWA. If any of these quantitative standards are met or exceeded, the impact analysis evaluates the frequency, duration, and intensity of that noise above the quantitative standards to determine whether a significant noise impact would occur.

This analysis also considers the potential for nighttime construction activities to result in sleep disturbance at nearby sensitive receptor locations, which includes future onsite residential and hotel uses if occupied during subsequent construction phases. The potential for sleep disturbance is evaluated based on whether nighttime construction activities would result in indoor noise levels of 45 dBA or more (assuming windows closed) at sensitive receptor locations.

METHODOLOGY FOR ASSESSMENT OF CONSTRUCTION TRUCK AND WORKER TRAFFIC

This analysis assesses construction worker and truck traffic noise levels based on FHWA's Traffic Noise Prediction Model, which includes the existing environmental setting developed as part of the transportation analysis. This analysis considers a 3 dBA increase to be a substantial temporary increase in roadside noise levels along these roadways (see Impact NO-2).

METHODOLOGY FOR ASSESSMENT OF VIBRATION IMPACTS

Construction activities that would occur within the project site include grading, excavation, and compaction, which would have the potential to generate groundborne vibration. Groundborne vibration levels resulting

[139] The FTA does not publish a software noise model; as such, the Federal Highway Administration's model was used and impacts were assessed using FTA's methodology for assessing impacts.

from construction activities at the project site were estimated using data published by Caltrans in its *Transportation and Construction Vibration Guidance Manual* (2020) document. The potential vibration levels at offsite sensitive locations and onsite vibration-sensitive uses constructed during previous construction phases are analyzed against the vibration criteria for structural damage and human annoyance established in Caltrans' *Transportation and Construction Vibration Guidance Manual*, and shown in Table 3.C-7, p. 3.C-12, and Table 3.C-8, p. 3.C-13, respectively, are used in this analysis with respect to construction, including nighttime construction. As shown in Table 3.C-5, p. 3.C-11, vibration impact criteria for structural damage depends on the type of structure potentially impacted. The vibration building damage thresholds for modern industrial/commercial buildings is 0.5 PPV. The building damage threshold for older residential structures is 0.3 PPV and for historic structures (Fire Station 19) the threshold is 0.25 PPV.

Given the nature of the proposed project or variant as a mixed-use development, any "excessive" groundborne vibration or noises that would be generated would be those generated during project construction. Once construction is complete, the proposed project or variant would not involve the use of heavy machinery that is associated with large commercial or industrial uses. As such, no sources of "excessive" groundborne vibration or noise levels are anticipated as part of project operations and operational vibration impacts are not discussed further.

METHODOLOGY FOR ASSESSMENT OF OPERATIONAL NOISE

STATIONARY SOURCES

To determine whether the proposed project or variant would result in the exposure of persons to or would generate noise levels that exceed established noise standards, the project's stationary operational noise sources are evaluated and compared to the criteria established in the noise ordinance section 2909. Noise from fixed mechanical sources from the proposed project or variant's residential uses are assessed relative to the standards of section 2909(a), which establishes a standard of 5 dBA increase over ambient noise levels at the property plane. Noise from commercial uses associated with the proposed project or variant are assessed relative to the standards of section 2909(b), which establishes a standard of 8 dBA increase over ambient noise levels for fixed sources of noise emanating from commercial properties at the property plane.

Additionally, operation of fixed mechanical equipment during nighttime hours is also considered with respect to section 2909(d) of the noise ordinance. The ordinance establishes a standard that no fixed noise source may cause the noise level measured inside any sleeping or living room in any dwelling unit located on residential property to exceed 45 dBA between the hours of 10 p.m. to 7 a.m. or 55 dBA between the hours of 7 a.m. to 10 p.m. with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

With respect to noise from backup diesel generators, potential impacts are qualitatively assessed when two or fewer generators are proposed for any given building. This qualitative assessment considers the frequency of testing for maintenance purposes, and the inclusion of noise attenuation features such as parapets, enclosures, baffles, or silencers.

ROADWAY NOISE LEVELS

Noise modeling for the proposed project and variant was completed to estimate existing and future traffic noise levels along 30 street segments in the project area based on trip generation and traffic volume data

prepared for the proposed project and variant.[140,141] The roadway segments selected for analysis are expected to be most directly impacted by project-related traffic. For this analysis, these roadway segments include the streets that are nearest to the project site and adjacent to the identified noise-sensitive receptors (i.e., residences in proximity to the project site). The noise levels were calculated using the algorithms of the FHWA's Highway Traffic Noise Model. The model results (included in Appendix E) are used to identify the future noise level increases attributable to the vehicle trips generated by the proposed project and variant.

The CEQA Guidelines do not define the levels at which permanent and temporary increases in ambient noise are considered "substantial." Therefore, regarding traffic noise, the proposed project or variant's noise effects were evaluated by comparing estimated project-related noise levels to existing noise levels. Caltrans identifies an increase of traffic noise of 3 dBA as barely perceptible and an increase of 5 dBA as clearly perceptible. Therefore, permanent increases in ambient noise levels of 5 dBA or more are considered to be unacceptable and a significant noise impact in any existing or resulting noise environment. Additionally, it is widely accepted methodology by both FTA and the Federal Interagency Committee on Noise that thresholds should be more stringent for environments that are already noise impacted.[142] Accordingly, the following thresholds are applied to determine the significance of project-related traffic noise increases: (1) an increase of 5 dBA or greater is considered a significant traffic noise increase; and (2) in places where the existing or resulting noise environment is "conditionally acceptable," "conditionally unacceptable," or "unacceptable," based on the San Francisco Land Use Compatibility Chart for Community Noise, a noise increase of 3 dBA or greater is considered a significant traffic noise increase.

METHODOLOGY FOR ASSESSMENT OF CUMULATIVE IMPACTS

The geographic scope of potential cumulative construction noise impacts encompasses a 900-foot radius from the boundaries of the project site. The geographic scope for cumulative traffic noise increases is consistent with the transportation analysis and includes the street segments adjacent to intersections analyzed in Section 3.B, Transportation and Circulation. Thus, the geographic scope for the analysis of cumulative traffic noise increases is larger than the geographic scope for the analysis of cumulative construction impacts.

Cumulative construction noise and vibration impacts are assessed based on a list-based approach of cumulative projects located within a 900-foot area of the project site and are expected to be under construction at the same time as the proposed project or variant. Cumulative projects that meet these criteria and could affect the same noise-sensitive receptors (those located adjacent to or near the project site or along shared construction haul routes) are identified below under Impacts C-NO-1 and C-NO-2.

Cumulative operational traffic noise impacts are assessed by modeling 2050 cumulative traffic noise levels (including the proposed project or variant) under Impact C-NO-4. The cumulative analysis considers whether the effects of project implementation, in combination with other cumulative projects, would cause a significant, adverse cumulative impact, and if so, whether the project's contribution to the cumulative impact would be considerable. Both conditions must apply for a project to result in a significant cumulative impact.

[140] Kittelson & Associates, *Stonestown Galleria Final Travel Demand Memorandum,* August 8, 2022.
[141] Kittelson & Associates, *Stonestown Volume Spreadsheets for Noise,* July 19, 2022.
[142] Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, p. 2-44.

IMPACT EVALUATION

CONSTRUCTION NOISE

Impact NO-1: Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. ***(Significant and Unavoidable with Mitigation)***

DAYTIME CONSTRUCTION NOISE

Construction of the proposed project would generate temporary noise increases in the project area throughout the proposed eight years of construction duration. **Table 3.C-11** shows typical noise levels associated with a range of construction equipment that would be required for the proposed project or variant at a distance of 50 feet between the equipment and noise sensitive receptor. It should be noted that the hourly noise levels (L_{max}) associated with the construction equipment would only be generated when equipment is operated at full power. Typically, the operating cycle for a piece of construction equipment would involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Therefore, the L_{max} noise levels shown in Table 3.C-11 would be expected to only occur occasionally throughout the construction day.

Section 2907 of the noise ordinance prohibits operation of *any* powered construction equipment (non-impact), regardless of age or date of acquisition, if the operation of any such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet from such equipment. As shown in Table 3.C-11, construction equipment used would operate within the constraints of the noise ordinance standards except for concrete saws. Concrete saws are generally used for relatively detailed demolition work, such as opening a specific area of roadway or sidewalk. As such, the duration and frequency of their use is usually not extensive. Concrete saws would be used during approximately 10 percent of the entire 5-week long period for demolition for each of the six construction phases, or about 4 workdays per phase, and any noise impacts at a distance of 100 feet from such equipment would not be considered substantial as they would be short in duration. Given that all equipment, except the concrete saw, would meet the limits specified in the noise ordinance, and given the generally limited duration of concrete saw use, noise levels resulting from the use of individual pieces of equipment would generally be expected to comply with noise ordinance limits.

Phases 1 through 6 would each include demolition, site preparation, grading/excavation, building construction, and paving. Construction of the proposed project or variant would require the use of heavy equipment during demolition, grading and excavation activities, paving, and during building fabrication. Construction activities would also involve the use of smaller power tools, generators, and other lesser sources of noise. During each stage of a given construction phase, there would be a different mix of equipment. The six phases of construction for the proposed project or variant would involve a similar selection of construction equipment; however, construction activity noise levels at and near the project site would fluctuate depending on the type, number, and duration of use of the various pieces of construction equipment.

Because the proposed project or variant would be constructed in six overlapping phases over an eight-year period, multiple construction activities could occur on different blocks simultaneously within the project site. Therefore, construction activity on one block could overlap with another nearby noisy construction activity.

Table 3.C-11 Maximum Noise Levels from Construction Equipment

Construction Equipment	Noise Level at 50 Feet (dB, L_{max})	Noise Level at 100 Feet (dB, L_{max})
Air Compressor	78	72
Auger Drill Rig	84	78
Backhoe	78	72
Concrete Pump Truck	81	75
Concrete Saw[a]	90	84
Concrete Truck	79	73
Crane	81	75
Dozer	82	76
Dump Truck	76	70
Excavator	81	75
Front End Loader	79	73
Generator	81	75
Gradall Forklift	83	77
Grader	85	79
Paver	77	71
Roller	80	74
Scraper	84	78
Tractor	84	78
Welder	74	68

SOURCE: Federal Highway Administration, *Roadway Construction Noise Model User's Guide,* 2006.

ABBREVITIONS:

dB = decibels; L_{max} = The maximum, instantaneous noise level registered during a measurement period.

NOTES: The above noise levels are calculated assuming a 100 percent usage factor at full load (i.e., L_{max} noise level).

[a] Concrete saws are generally used for relatively detailed demolition work, such as opening up a specific area of street or sidewalk. As such, the duration and frequency of their use is usually not extensive.

Based on construction phasing assumptions, the maximum combined noise levels from operation of the two noisiest pieces of equipment associated with each construction phase throughout the estimated eight-year construction period are presented in **Table 3.C-12** through **Table 3.C-17**, pp. 3.C-25 to 3.C-30, and compared to both the FTA's limit of 90 dBA at sensitive receptor locations and whether it would exceed 10 dBA above the ambient noise level. As shown in Table 3.C-12 through Table 3.C-17, the estimated construction noise levels generated by the proposed project or variant would range from 65 to 90 dBA L_{eq} at the nearest sensitive receptors. Impacts to existing offsite and future onsite sensitive receptors are described below by phase.

Construction Noise Impacts on Existing Offsite and Future Onsite Sensitive Receptors

- **Phase 1:** During construction of Phase 1 of the proposed project or variant, the nearest offsite sensitive receptors would include SFSU student housing Building 11 at the northwest corner of Winston Drive and Buckingham Way, and St. Stephen Catholic Church and St. Stephen Catholic School adjacent to the northwest corner of the project site. These sensitive receptors would be approximately 50 feet from the proposed structures included in Phase 1 development. As shown in Table 3.C-9, p. 3.C-15, the estimated construction noise levels generated by Phase 1 of the proposed project or variant would range from 77 to 84 dBA L_{eq} at the nearest sensitive receptors. Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor but would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors (St. Stephen Church and SFSU student housing Building 11).

- **Phase 2:** During construction of phase 2 of the proposed project or variant, the nearest offsite sensitive receptors would include SFSU student housing Buildings J and L and St. Stephen Catholic School. Additionally, Phase 1 construction would be complete during Phase 2 building construction. Therefore, future onsite residents of the Phase 1 buildings could be exposed to Phase 2 construction noise.

  As shown in Table 3.C-11, p. 3.C-22, the estimated construction noise levels generated by the proposed project or variant would range from 68 to 80 dBA L_{eq} at the nearest offsite and future onsite sensitive receptors. Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor but would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors (SFSU student housing Buildings J and L, St. Stephen Catholic School, and Phase 1 residents).

- **Phase 3:** During construction of Phase 3 of the proposed project or variant, the nearest offsite sensitive receptors would include Lakeside Presbyterian Church and residences on 20th Avenue. As shown in Table 2-3, p. 3.C-17, construction of Phase 2 would not be completed until approximately 2 months after Phase 3. Phase 1 would be completed and potentially ready for occupancy during the final approximately 9-month period of Phase 3 construction, which would consist of interior architectural coating application work that would generally only require air compressors. An air compressor operating within a building under construction would generate a noise level of 74 dBA, L_{eq}, which would conservatively be attenuated by approximately 15 dBA by the exterior walls to 59 dBA at a distance of 50 feet. Because existing monitored noise levels in the area are approximately 60 dBA (LT-1 and LT-6), operation of an air compressor would not result in a noise level that exceeds 10 dBA above the ambient noise level. Therefore, future occupants of Phase 1 and Phase 2 would not be affected by Phase 3 construction activities.

  As shown in Table 3.C-12, p. 3.C-25, the estimated construction noise levels generated by the proposed project or variant would range from 73 to 83 dBA L_{eq} at the nearest offsite sensitive receptors (Lakeside Presbyterian Church and residences on 20th Avenue). Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor but would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors for the majority of Phase 3.

- **Phase 4:** During construction of Phase 4 of the proposed project, the nearest offsite sensitive receptors would include the Authentic Church, Stonecrest Drive residences, and the Merced Branch Library. Additionally, Phase 3 construction would be completed during Phase 4 building construction and paving, while Phases 1 and 2 would also be completed during Phase 4 construction. Only future residents of Phase 3 buildings would be considered onsite sensitive receptors for Phase 4 because they would be adjacent to Phase 4 construction. This is because although Phases 1 and 2 would be completed, these onsite sensitive receptors would be shielded from Phase 4 construction noise by the existing Stonestown Galleria shopping mall.

While Phase 4 demolition and grading would overlap with Phase 3 grading and building construction, the equipment associated with the demolition and grading phases of Phase 4 would represent the two noisiest pieces of equipment associated with the proposed project or variant during that overlapping period. Therefore, the maximum analyzed impact is captured in the analysis of Phase 4 demolition and grading phases.

As shown in **Table 3.C-13**, p. 3.C-26, the estimated construction noise levels generated by the proposed project would range from 66 to 90 dBA L_{eq} at the nearest offsite and future onsite sensitive receptors. Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor for the majority of Phase 4 but would meet the 90 dBA criterion during the demolition phase at the Authentic Church sensitive receptor. Noise levels would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors.

The two noisiest pieces of construction equipment would be the same under the variant as under the proposed project. Under the variant, the Authentic Church would no longer represent a noise sensitive receptor as it would be demolished, and the parcel would be developed as part of Phase 4. Under the proposed project, the church would experience the greatest increase in noise during construction of Phase 4, which would occur within approximately 25 feet of the building. Under the variant, the construction noise impacts would not occur at this sensitive receptor. Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor but would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors (the Stonecrest Drive residences, Merced Branch Library, and future Phase 3 residences).

- **Phase 5:** During construction of Phase 5 of the proposed project or variant, the nearest offsite sensitive receptors would include Stonecrest Drive residences and SFSU student housing Building A. Future occupants of Phases 1, 2, and 3 would be shielded from Phase 5 construction by the existing Stonestown Galleria shopping mall and the buildings constructed in Phase 4. However, Phase 4 construction would be complete during the adjacent Phase 5 building construction. Therefore, future onsite residents of Phase 4 could be exposed to Phase 5 construction noise.

  As shown in **Table 3.C-14**, p. 3.C-27, the estimated construction noise levels generated by the proposed project or variant would range from 65 to 80 dBA L_{eq} at the nearest offsite and onsite sensitive receptors. Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor but would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors (Stonecrest Drive residences, SFSU student housing Building A, and future Phase 4 residents).

- **Phase 6:** During construction of Phase 6 of the proposed project or variant, the nearest offsite sensitive receptors would include SFSU student housing Buildings N and E. Additionally, future onsite residents of Phase 2 could be exposed to construction noise from Phase 6. Future onsite residents of Phases 1 and 3 would be shielded by Phase 2 buildings and the intervening shopping mall, respectively. Construction of Phases 4 and 5 would occur simultaneously with Phase 6 and would not be occupied by sensitive receptors.

  As shown in Table 3.C-15, p. 3.C-28, the estimated construction noise levels generated by the proposed project or variant would range from 71 to 84 dBA L_{eq} at the nearest offsite and onsite sensitive receptors. Noise levels would not exceed the FTA's 90 dBA criterion for daytime construction noise at a residential receptor but would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors (SFSU student housing Buildings N and E and Phase 2 residents).

Table 3.C-12 Exterior Noise at Offsite Sensitive Uses from Project Construction – Phase 1

Nearest Offsite Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Daytime Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	Exceed 10 dBA Above the Ambient Noise Level?
CONSTRUCTION PHASE – DEMOLITION								
St. Stephen Church	50	52	Concrete saw Dozer	84	No	84	+32	**Yes**
SFSU Housing	50	64		84	No	84	+20	**Yes**
CONSTRUCTION PHASE – SITE PREPARATION								
St. Stephen Church	50	52	Tractor Dozer	82	No	82	+30	**Yes**
SFSU Housing	50	64		82	No	82	+18	**Yes**
CONSTRUCTION PHASE – GRADING/EXCAVATION								
St. Stephen Church	50	52	Auger Drill Grader	83	No	83	+31	**Yes**
SFSU Housing	50	64		83	No	83	+19	**Yes**
CONSTRUCTION PHASE – BUILDING CONSTRUCTION								
St. Stephen Church	50	52	Crane Forklift	80	No	80	+28	**Yes**
SFSU Housing	50	64		80	No	80	+16	**Yes**
CONSTRUCTION PHASE – PAVING								
St. Stephen Church	50	52	Paver Roller	77	No	77	+25	**Yes**
SFSU Housing	50	64		77	No	77	+13	**Yes**

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

Bolded values exceed 10 dBA above the ambient noise level during daytime hours.

[a] The approximate distances are measured from the nearest edge of the construction activity to the nearest sensitive-receptor property line.

Table 3.C-13 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 2

Construction Phase	Nearest On- or Offsite Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Daytime Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	10 dBA Above the Ambient Noise Level?
Demolition	St. Stephen Catholic School	100	52	Concrete saw Dozer	78	No	78	+26	**Yes**
	SFSU Housing Building J	165	64		73	No	74	+10	**Yes**
	SFSU Housing Building L	140	64		75	No	75	+11	**Yes**
Site Preparation	St. Stephen Catholic School	100	52	Tractor Dozer	73	No	73	+21	**Yes**
	SFSU Housing Building J	165	64		69	No	70	+6	No
	SFSU Housing Building L	140	64		70	No	71	+7	No
Grading/ Excavation	St. Stephen Catholic School	100	52	Auger Drill Grader	77	No	77	+25	**Yes**
	SFSU Housing Building J	165	64		72	No	73	+9	No
	SFSU Housing Building L	140	64		74	No	74	+10	**Yes**
Building Construction	St. Stephen Catholic School	100	52	Crane Forklift	74	No	74	+22	**Yes**
	SFSU Housing Building J	165	64		70	No	71	+7	No
	SFSU Housing Building L	140	64		71	No	72	+8	No
	Phase 1 Residences	50	64		80	No	80	+16	**Yes**
Paving	St. Stephen Catholic School	100	52	Paver Roller	71	No	71	+19	**Yes**
	SFSU Housing Building J	165	64		66	No	68	+4	No
	SFSU Housing Building L	140	64		68	No	70	+6	No
	Phase 1 Residences	50	64		77	No	77	+13	**Yes**

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

Bolded values exceed 10 dBA above the ambient noise level during daytime hours.

[a] The approximate distances are measured from the nearest edge of the construction activity to the nearest sensitive-receptor property line.

Table 3.C-14 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 3

Construction Phase	Nearest Offsite Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Daytime Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	10 dBA Above the Ambient Noise Level?
Demolition	Lakeside Presbyterian Church	55	66	Concrete saw Dozer	83	No	83	+17	**Yes**
	20th Avenue Residents	80	66		80	No	80	+14	**Yes**
Site Preparation	Lakeside Presbyterian Church	55	66	Tractor Dozer	81	No	81	+15	**Yes**
	20th Avenue Residences	80	66		78	No	78	+12	**Yes**
Grading/ Excavation	Lakeside Presbyterian Church	55	66	Auger drill Grader	82	No	82	+16	**Yes**
	20th Avenue Residences	80	66		79	No	79	+13	**Yes**
Building Construction	Lakeside Presbyterian Church	55	66	Crane Forklift	79	No	79	+13	**Yes**
	20th Avenue Residences	80	66		76	No	76	+10	**Yes**
Paving	Lakeside Presbyterian Church	55	66	Paver Roller	76	No	76	+10	**Yes**
	20th Avenue Residences	80	66		73	No	74	+8	No

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES**:**

Bolded values exceed 10 dBA above the ambient noise level during daytime hours.

[a] The approximate distances are measured from the nearest edge of the construction activity to the nearest sensitive-receptor property line.

Table 3.C-15 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 4

Construction Phase	Nearest Offsite Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Daytime Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	10 dBA Above the Ambient Noise Level?
Demolition	Stonecrest Drive Residences	175	50	Concrete saw Dozer	73	No	73	+23	**Yes**
	Merced Branch Library	155	61		74	No	74	+13	**Yes**
	Authentic Church[b]	25	65		90	**Yes**	90	+25	**Yes**
Site Preparation	Stonecrest Drive Residences	175	50	Tractor Dozer	71	No	71	+21	**Yes**
	Merced Branch Library	155	61		72	No	73	+12	**Yes**
	Authentic Church[b]	25	65		88	No	88	+23	**Yes**
Grading/ Excavation	Stonecrest Drive Residences	175	50	Auger drill Grader	72	No	72	+22	**Yes**
	Merced Branch Library	155	61		73	No	73	+12	**Yes**
	Authentic Church[b]	25	65		89	No	89	+24	**Yes**
Building Construction	Stonecrest Drive Residences	175	50	Crane Forklift	69	No	69	+19	**Yes**
	Merced Branch Library	155	61		70	No	71	+10	**Yes**
	Phase 3 Residences	50	60		80	No	80	+20	**Yes**
	Authentic Church[b]	25	65		86	No	86	+21	**Yes**
Paving	Stonecrest Drive Residences	175	50	Paver Roller	66	No	66	+16	**Yes**
	Merced Branch Library	155	61		67	No	68	+7	No
	Phase 3 Residences	50	60		77	No	77	+17	**Yes**
	Authentic Church[b]	25	65		83	No	83	+18	**Yes**

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES**:**

Bolded values exceed the 90 dBA standard or 10 dBA above the ambient noise level during daytime hours. The grey shading is only applicable for the proposed project.

[a] The approximate distances are measured from the nearest edge of the construction activity to the nearest sensitive-receptor property line.
[b] Under the proposed project, the Authentic Church parcel would not be developed and would represent a sensitive receptor.

Table 3.C-16 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 5

Construction Phase	Nearest Offsite Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Daytime Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	10 dBA Above the Ambient Noise Level?
Demolition	Stonecrest Drive Residences	185	61	Concrete saw Dozer	72	No	72	+11	**Yes**
	SFSU Housing Building A	130	69		76	No	77	+8	No
Site Preparation	Stonecrest Drive Residences	185	61	Tractor Dozer	71	No	71	+10	**Yes**
	SFSU Housing Building A	130	69		74	No	75	+6	No
Grading/ Excavation	Stonecrest Drive Residences	185	61	Auger drill Grader	71	No	71	+10	**Yes**
	SFSU Housing Building A	130	69		74	No	75	+6	No
Building Construction	Stonecrest Drive Residences	185	61	Crane Forklift	69	No	70	+9	No
	SFSU Housing Building A	130	69		72	No	74	+5	No
	Phase 4 Residences	50	65		80	No	80	+15	**Yes**
Paving	Stonecrest Drive Residences	185	61	Paver Roller	65	No	67	+6	No
	SFSU Housing Building A	130	69		68	No	72	+3	No

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES**:**

Bolded values exceed 10 dBA above the ambient noise level during daytime hours.

[a] The approximate distances are measured from the nearest edge of the construction activity to the nearest sensitive-receptor property line.

Table 3.C-17 Exterior Noise at On- and Offsite Sensitive Uses from Project Construction – Phase 6

Construction Phase	Nearest On- and Offsite Sensitive Receptor	Distance to Receptor (feet)[a]	Existing Monitored Daytime Noise Level (dBA L_{eq})	Loudest Two Noise Sources	Estimated Construction Noise Level (dBA L_{eq})	Exceed 90 dBA Daytime Standard?	Resultant Noise Level (Existing + Construction) (dBA L_{eq})	Increase over Existing (dBA L_{eq})	10 dBA Above the Ambient Noise Level?
Demolition	SFSU Housing Building N	50	55	Concrete saw Dozer	84	No	84	+29	**Yes**
	SFSU Housing Building E	100	55		78	No	78	+23	**Yes**
	Phase 2 Residences	100	55		78	No	78	+23	**Yes**
Site Preparation	SFSU Housing Building N	50	55	Tractor Dozer	82	No	82	+27	**Yes**
	SFSU Housing Building E	100	55		74	No	74	+19	**Yes**
	Phase 2 Residences	100	55		76	No	76	+21	**Yes**
Grading/ Excavation	SFSU Housing Building N	50	55	Auger drill Grader	83	No	83	+28	**Yes**
	SFSU Housing Building E	100	55		77	No	77	+22	**Yes**
	Phase 2 Residences	100	55		77	No	77	+22	**Yes**
Building Construction	SFSU Housing Building N	50	55	Crane Forklift	80	No	80	+25	**Yes**
	SFSU Housing Building E	100	55		74	No	74	+19	**Yes**
	Phase 2 Residences	100	55		74	No	74	+19	**Yes**
Paving	SFSU Housing Building N	50	55	Paver Roller	77	No	77	+22	**Yes**
	SFSU Housing Building E	100	55		71	No	71	+16	**Yes**
	Phase 2 Residences	100	55		71	No	71	+16	**Yes**

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES**:**

Bolded values exceed 10 dBA above the ambient noise level during daytime hours.

[a] The approximate distances are measured from the nearest edge of the construction activity to the nearest sensitive-receptor property line.

As described above and shown in Table 3.C-9 through Table 3.C-15, pp. 3.C-15 to 3.C-28, existing offsite and future onsite sensitive receptors would be subject to significant construction-related noise levels. Implementation of **Mitigation Measure M-NO-1, Construction Noise Control**, would reduce the severity of noise impacts on future onsite sensitive receptors.

> **Mitigation Measure M-NO-1: Construction Noise Control.** The project sponsor shall submit a project-specific construction noise control plan to the environmental review officer (ERO) for approval prior to issuance of any demolition or building permit. The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include measures to reduce construction noise with the target to meet performance standards of 90 dBA 1-hour L_{eq}, 10 dBA above the ambient noise level, nor an interior level of 45 dBA during nighttime hours at noise sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels, and motels). The project sponsor shall ensure that requirements of the construction noise control plan are included in contract specifications.
>
> The construction noise control plan shall include specific measures to reduce nighttime construction noise.
>
> The construction noise control plan shall include the following measures to the degree feasible, or other equally effective measures, to reduce construction noise levels:
>
> - Use "quiet" models of air compressors and other stationary equipment where such technology exists;
> - Use construction equipment with lower noise emission ratings to the extent feasible, particularly for air compressors;
> - Prohibit the idling of inactive construction equipment for more than 5 minutes;
> - Muffle and maintain all equipment used on site. All internal combustion engine driven equipment shall be fitted with mufflers that are in good working condition;
> - Position stationary noise sources, such as temporary generators and pumps, as far from nearby receptors to the extent feasible, within temporary enclosures and shielded by barriers (which could reduce construction noise by as much as 5 dB) or other measures, to the extent feasible;
> - Avoid placing stationary noise-generating equipment (e.g., generators, compressors) within noise-sensitive buffer areas (as determined by the acoustical consultant) immediately adjacent to neighbors;
> - Enclose or shield stationary noise sources from neighboring noise-sensitive properties with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas, if feasible;
> - Install temporary barriers, barrier-backed sound curtains, and/or acoustical panels around working powered impact equipment and, if necessary, around the construction area perimeter. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise;

- Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be "quiet" gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, which could achieve a reduction of 5 dBA. Quieter equipment shall be used when feasible, such as drills rather than impact equipment;

The construction noise control plan shall include specific measures to reduce nighttime construction noise. In addition, the construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures and monitoring of construction noise levels:

- Designate a construction manager;
- Notify neighboring noise-sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating or nighttime noise activities (i.e., activities that may generate noise levels greater than 90 dBA at noise sensitive receptors) about the estimated duration of the activity;
- Post a sign on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
- Implement a procedure for notifying the planning department of any noise complaints within one week of receiving a complaint;
- Develop a list of measures for responding to and tracking complaints pertaining to construction noise; such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and
- Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation), during high-intensity construction activities, and during nighttime construction to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures. Selection of the monitoring locations shall be coordinated between the planning department, construction contractor and, if warranted, affected residential property owners. The program shall be set up to alert the construction manager or other designated person(s) when noise levels exceed allowable limits (10 dBA above established ambient levels). If noise levels are found to exceed applicable noise limits due to construction-related activities, corrective action shall be taken, such as moving specific construction activities if feasible, fixing faulty or poorly operating equipment, and installing portable barriers.

SIGNIFICANCE AFTER MITIGATION

The above measures would be effective in reducing construction-related noise and have the potential to reduce the impacts of Phases 3 and 5 construction to less than 10 dBA above the existing ambient noise levels. However, as previously shown in Table 3.C-12 through Table 3.C-17, pp. 3.C-25 to 3.C-30, construction of the proposed project or variant would result in noise levels at sensitive receptors of up to 32 dBA above the ambient noise level for Phase 1, up to 26 dBA for Phase 2, up to 24 dBA for Phase 4 and up to 29 dBA for

Phase 6. Implementation of Mitigation Measure M-NO-1 would reduce the severity of the proposed project or variant's construction noise impacts on existing offsite and future onsite sensitive receptors. However, the construction noise control measures would not necessarily reduce these noise increases to below the 10 dBA above ambient noise level standard. Even the most effective noise control measures, such as construction of temporary barriers, have an upper limit of 15 dBA of noise reduction, which would not be sufficient to reduce some of the noisiest construction phases. Although overall construction for a given phase would be as much as 45 months, construction activities would vary and move around the site and the noisiest construction phases (demolition and grading) would only occur for the first 10 months of each phase. However, given the duration of the noisiest construction anticipated over approximately 10 months in close proximity to sensitive receptors and the overall duration of construction would exceed eight years, construction noise impacts would be significant. Even with implementation of Mitigation Measure M-NO-1, construction noise levels would exceed 10 dBA above the ambient noise level for multiple phases of project construction For these reasons, this impact is would be ***significant and unavoidable with mitigation***.

NIGHTTIME CONSTRUCTION

Section 2908 of the noise ordinance prohibits nighttime construction between the hours of 8 p.m. and 7 a.m. if the noise level exceeds the ambient noise level by 5 dBA at the nearest property line, unless a special permit has been applied for and granted. Maintaining a 45 dBA interior noise limit at sensitive receptors prevents or reduces health effects resulting from sleep disturbance caused by nighttime construction activities.

Nighttime construction work would occur for several phases as necessary to avoid conflicts with the existing shopping mall loading dock operations, utilities connections and switchovers, and for concrete pours. The project sponsor has indicated that concrete pours of 24 to 48 hours would occur on a case-by-case basis and would occur through nighttime hours. This analysis conservatively assumes concrete pours for each phase to be 24- to 48-hours in duration. Because of this limited duration and because concrete pours would occur during the first few months of the building construction subphase for each phase of construction, it is unlikely that such nighttime activities of any two phases would overlap to further exacerbate nighttime noise levels.

Equipment used for continuous concrete pours would typically include concrete mixer trucks, concrete pumps, and water trucks. Approximately one month of nighttime work would be necessary for Phase 1 construction to avoid impacts to existing loading dock operations, and nighttime construction would also be required for utilities connections and switchovers in Phase 2. For Phases 1 and 2 the analysis assumes that building construction equipment would be operating, while the remaining phases assume the operation of a concrete truck and a concrete pump for nighttime concrete pours.

Noise level increases in excess of 5 dBA over the ambient noise levels would occur during nighttime work associated with Phases 1 and 2, resulting in the need for a special permit to conduct construction activities outside of the restrictions of section 2908(d) of the noise ordinance. The special permit under section 2908(d) is subject to the approval of the director of public works or director of building inspection, who must weigh factors such as traffic versus noise effects on neighboring uses, sleep disturbance effects, economic hardship, and general public interest. The permit would prescribe working times, types of construction equipment to be used, and permissible noise emissions, as required in the public interest. Permit approval by the City would ensure that the proposed project or variant would meet section 2908 ordinance requirements.

Table 3.C-18 shows the construction noise levels expected to be generated during nighttime construction activities and compares them to the 45 dBA interior standard. As shown in Table 3.C-16, p. 3.C-29, estimated interior noise levels at the nearest residential sensitive receptors would reach or exceed the 45 dBA interior standard. Therefore, the nighttime construction noise impact would be significant. Implementation of Mitigation Measure M-NO-1 would reduce nighttime construction noise levels. However, similar to the daytime construction noise impact, although the noise reduction measures in Mitigation Measure M-NO-1 would reduce the severity of the proposed project or variant's temporary or periodic increases in ambient noise levels, these measures would not necessarily reduce noise increases to below the 45 dBA interior standard. Therefore, the nighttime construction noise impact would be ***significant and unavoidable with mitigation***.

Table 3.C-18 Nighttime Noise Levels from Construction by Phase

Sensitive Receptor	Existing Nighttime Noise Level (dBA, L_{eq})[a]	Distance to Sensitive Receptor[b] (feet)	Adjusted L_{eq} Level (dBA)[c]	Existing plus Construction Noise Level (dBA)	Existing plus Construction Noise Interior Level (dBA)[d]	Exceed Ambient 45 dBA Interior Standard?
PHASE 1						
SFSU Housing	57	50	80	80	**55**	**Yes**
PHASE 2						
SFSU Housing Building J	57	165	70	70	**45**	**Yes**
SFSU Housing Building L	57	140	71	71	**46**	**Yes**
PHASE 3						
20th Avenue Residences	53	80	74	74	**49**	**Yes**
PHASE 4						
Stonecrest Drive Residences	55	175	67	67	42	No
Phase 3 Residences	55	50	78	78	**53**	**Yes**
PHASE 5						
Stonecrest Drive Residences	55	185	67	66	41	No
SFSU Housing Building A	65	130	67	69	44	No
PHASE 6						
SFSU Housing Building N	55	50	78	78	**53**	**Yes**
SFSU Housing Building E	55	100	72	72	**47**	**Yes**
Phase 2 Residences	55	100	72	72	**47**	**Yes**

SOURCES: FHWA 2005; ESA 2022

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

Bolded values exceed the 45 dBA interior standard.

[a] Monitored average hourly L_{eq} between 10 p.m. and 7 a.m.
[b] Distance between approximate location of equipment and property line of sensitive receptor.
[c] The L_{eq} level is adjusted for distance and percentage of usage.
[d] Assumes a 25 dBA exterior to interior noise reduction attributable to standard building construction materials and windows closed.

Impact NO-2: Construction truck traffic from the proposed project or variant would not cause a substantial temporary or periodic increase in ambient noise levels along access streets in the project vicinity. *(Less than Significant)*

Construction trucks would access the project site from 19th Avenue and use Winston Drive, and Buckingham Way to access the construction areas. Off-haul trucks would exit the project site and use Winston Drive to 19th Avenue. During the eight year phased construction period, the number of construction trucks traveling to and from the site would vary, depending on the phase and type of construction activity. Maximum daily haul and vendor truck trips are anticipated to occur during the Phase 2 grading and excavation sub phase. During this sub phase approximately 9,000 truck trips are estimated to occur over 240 days of Phase 2, or about 38 trips per day. Spread across the proposed 10-hour workday, maximum hourly truck trips would be 4 trips per hour. The maximum number of construction worker trips would occur during the building construction sub phase of Phase 1 with an estimated 800 trips per day. These worker trips would be a mix of light duty automobiles and light-duty trucks and, similar to haul trucks, would be expected to use Winston Drive and 19th Avenue as the primary access roadways. It is conservatively assumed that half of these trips would leave the site during the p.m. peak hour.

Construction worker and truck traffic noise levels were calculated based on the FHWA's Prediction Model, which includes the existing environmental setting developed as part of the transportation analysis (the calculations are included in Appendix D.1). Modeled weekday noise level estimates for roadway segments are presented in **Table 3.C-19** for the weekday p.m. peak hour. As shown in Table 3.C-19, increases in roadside noise levels from construction worker and truck traffic would result in an increase of 0.4 to 1.0 dBA along 19th Avenue and Winston Drive, respectively. The noise increases would not be perceptible and would not exceed the 3 dBA noise increase standard for traffic noise. Therefore, increases in roadway noise from construction traffic along these roadways used to access the project site would be ***less than significant***, and no mitigation measures are required.

Table 3.C-19 Roadway Noise Levels with Project Construction Truck and Worker Traffic in the Vicinity of the Project

Roadway Segment[a,b]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing + Project or Variant and Existing (dBA)	Exceed 3 dBA Standard?
Winston Drive from Buckingham Way to 19th Avenue	62.8	3 dBA or greater increase	63.8	1.0	No
19th Avenue from Buckingham Way to Holloway Avenue	70.6	3 dBA or greater increase	71.0	0.4	No

SOURCE: ESA 2022

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

[a] Road center to sensitive receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the algorithms of the Federal Highway Administration Traffic Noise Prediction Model.

[b] The analysis considered the vehicle mix based on Caltrans data for 19th Avenue (SR 1). Traffic speeds for all vehicle classes were set at 35 miles per hour (mph) for 19th Avenue and 25 mph for Winston Drive.

Impact NO-3: Construction of the proposed project or variant would not generate excessive groundborne vibration or groundborne noise levels. *(Less than Significant)*

The proposed project or variant would not require impact or vibratory pile driving. Construction activities that typically involve groundborne vibration generating equipment (e.g., bulldozers, drill rigs, and vibratory compaction equipment) would include grading, excavation, and compaction. These construction activities have the potential to generate low levels of groundborne vibration. As such, the existing structures located within 90 feet[143] of the project site could be exposed to some degree of groundborne vibration related to construction activities. The effects from vibration can range from none at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels.

BUILDING DAMAGE FROM CONSTRUCTION-RELATED VIBRATION OF THE PROPOSED PROJECT

There are two historic structures within 90 feet of the project site. The vacant theater at 501 Buckingham Way is proposed for demolition under both the proposed project and the variant. Fire Station 19 at 390 Buckingham Way is a contributor to the California Register-eligible San Francisco 1952 Firehouse Bond Act Thematic District and, as such is conservatively considered a historic structure. The other structures presented in Table 3.C-4, p. 3.C-10, located 25 to 90 feet from construction activities at the project site would be of potential concern with respect to potential building damage from construction-related vibration, due to their age.

As shown in Table 3.C-8, p. 3.C-13, Caltrans vibration impact criteria for structural damage depends on the type of structure potentially impacted. The vibration building damage threshold for older residential structures is 0.3 PPV. The vibration building damage threshold for historic structures is 0.25 PPV. As shown in Table 3.C-4, p. 3.C-10, offsite structures within 90 feet of the project site were constructed between 1947 and 1953. With the exception of Fire Station 19, these structures are not historic resources; therefore, the 0.3 PPV criterion for older residential structures is applied. For Fire Station 19, the 0.25 PPV criterion is applied.

The proposed construction equipment with the greatest potential to generate vibration would be vibratory rollers and auger drills. Vibratory rollers are largely used for compaction and paving, and auger drill rigs are used for installation of auger-cast or micro piles for building foundations and utility shoring. At a distance of 20 feet, vibration generated by a vibratory roller would be attenuated to below the threshold for continuous impacts to older residential structures of 0.3 PPV. At a distance of 23 feet, vibration generated by a vibratory roller would be attenuated to below the threshold for continuous impacts to historic structures of 0.25 PPV. Because all of the nearest structures would be more than 25 feet from potential construction areas, the construction vibration levels would be below the applicable Caltrans building damage threshold.

Table 3.C-20 presents the reference vibration level at a distance of 25 feet as published by FTA as well as the calculated distances at the closest structures within 90 feet of the project site. Under the proposed project, the Authentic Church would be the closest existing structure, approximately 25 feet from the nearest work areas. As shown in Table 3.C-20, the greatest vibration level would be 0.2 PPV from operation of a vibratory roller. This vibration level would be below the 0.3 PPV threshold for an older structure. The vibration levels for the other buildings within 90 feet of the project site would range between 0.013 to 0.064 PPV and would be well below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures.

[143] At a distance of 90 feet, vibration from non-impact construction equipment associated with the maximum vibration potential (vibratory roller) would be attenuated to below the impact criterion established for human perception (0.1 PPV), which is also below the building damage criteria for all building types.

Therefore, construction-related vibration impacts to structures under the proposed project would be ***less than significant***.

Table 3.C-20 Vibration Levels for Construction Equipment

Equipment	Estimated Peak Particle Velocity (inches per second)		
	At 25 Feet (FTA reference level) (3355 19th Avenue-Authentic Church)	At 55 Feet (201 Eucalyptus Drive, SFSU Student Housing)	At 80 Feet (390 Buckingham Way)
Dozer (Small)	0.003	0.0009	0.0005
Jackhammer	0.035	0.011	0.006
Loaded Trucks	0.076	0.023	0.013
Caisson Drilling	0.089	0.027	0.016
Large Bulldozer	0.089	0.027	0.016
Vibratory Roller	0.20	0.064	0.037

SOURCES: California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, September 2013; Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

ABBREVIATION:

FTA = Federal Transit Administration

BUILDING DAMAGE FROM CONSTRUCTION-RELATED VIBRATION OF THE VARIANT

The primary difference between the variant and the proposed project with respect to construction-related vibration is that the Authentic Church would be demolished and developed as part of Block E3 and, therefore, no longer a sensitive receptor. Under the proposed project, the church would experience the greatest vibration during Phase 4 construction, which would occur within approximately 25 feet of the building. Under the variant, construction vibration impacts would not occur at this sensitive receptor. The vibration levels for the other buildings within 90 feet of the project site would be the same under the variant. As with the proposed project, construction-related vibration associated with the variant would not result in building damage and the impact would be ***less than significant***.

SLEEP DISTURBANCE FROM CONSTRUCTION-RELATED VIBRATION

People are generally more sensitive to vibration during nighttime hours when sleeping than during daytime waking hours. Nighttime construction activities associated with the proposed project or variant would have the potential to affect the nearest offsite and onsite residential sensitive receptors, which are as close as 50 feet from the project site. Nighttime sleep disturbance impacts at these sensitive receptor locations would occur if vibration levels were to exceed the strongly perceptible threshold of 0.1 PPV for frequent intermittent construction sources. As shown in Table 3.C-20, construction-related groundborne vibration levels at a distance of 55 feet would range between 0.0009 to 0.064 PPV and would be below the 0.1 PPV threshold. Therefore, impacts related to sleep disturbance and groundborne vibration as a result of construction of the proposed project or variant would be ***less than significant***.

OPERATIONAL IMPACTS

Impact NO-4: Operation of stationary equipment on the project site from the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance. ***(Less than Significant with Mitigation)***

Operation of the proposed project or variant would increase ambient noise levels in the immediate vicinity of the project site primarily through the use of new stationery noise equipment such as heating, ventilating, and air conditioning (HVAC) units and exhaust fans, and a total of 12 emergency diesel generators. Operation of stationary equipment for the proposed residential uses would be subject to noise ordinance section 2909(a), which limits noise produced at residential properties to no more than 5 dBA above the local ambient condition at any point outside the property plane. Operation of stationary equipment for the proposed commercial uses would be subject to section 2909(c) of the noise ordinance, which limits noise produced at commercial properties to no more than 8 dBA above the local ambient condition at any point outside the property plane.

In addition, section 2909(d) states that in order to prevent sleep disturbance, no fixed noise source may cause the noise level measured inside any sleeping or living room in a dwelling unit on residential property to exceed 45 dBA between 10 p.m. and 7 a.m. or 55 dBA between 7 a.m. and 10 p.m. with windows open, except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

At the time of this analysis, specific noise ratings for HVAC equipment are not yet available for the proposed project or variant. However, the project sponsor stated that the HVAC equipment would be located within mechanical rooms in the garage of each respective building and would exhaust at grade. While mechanical equipment would be located within mechanical rooms, which would interrupt the line-of-sight from any sensitive receptor view, fan noise would emanate from air intakes and exhaust points. Although the exact noise levels from stationary equipment cannot be quantified at this time, noise from louder equipment (depending on the size) and noise from HVAC equipment and exhaust fans can produce sound levels ranging between 70 and 75 dBA at 50 feet, depending on the size of the unit.[144] All equipment would be located within mechanical rooms in garages, which would offer some level of attenuation; however, fan and exhaust noise would still represent a potential source of unshielded noise on the exterior of the buildings.

Consequently, the stationary equipment noise levels may exceed section 2909(a) and (b) limits of 5 and 8 dBA, respectively, at the property plane. Given that the closest sensitive receptor under the proposed project (Authentic Church) would be approximately 25 feet from the project site, HVAC units could contribute substantially to noise levels at the property plane or nearest sensitive receptors. Therefore, the stationary equipment could result in the proposed project exceeding the sections 2909(a), (b), and (d) standards, which would be significant.

Additionally, emergency generators are required by the San Francisco Building Code for buildings with occupied floor levels greater than 75 feet in height. A total of 12 emergency generators would be required in the new buildings and would range from 470 to 1,005 horsepower (hp). Each residential block would have a generator located in a fire-rated room adjacent to the building entrance facing the street or roadway. Except

[144] Hoover and Keith, Noise Control for Buildings and Manufacturing Plants, Equipment and Products, 1981.

for emergency conditions during which noise emitted from generators would be exempt from restrictions of the noise ordinance, all of these generators would be tested for maintenance approximately once a week for less than one hour, up to a maximum of 50 hours per year as restricted by the applicable air quality permit. Maintenance testing is typically conducted either by a professional technician during normal work (e.g., daytime) hours or on a programmed basis. These generators would be enclosed and are not anticipated to generate substantial noise. Specific exhaust port locations for the generators have not yet been identified; however, the project sponsor has stated that they would be vented at the street level of each building for which they would be required.

Weekly testing (generally less than one hour) of emergency backup generators typically do not result in a substantial temporary increase in ambient noise levels provided the project being analyzed includes no more than two generators for any given building. However, because of the potential for multiple generators to be operated for maintenance purposes within 100 to 200 feet of each other for the proposed project, noise levels could substantially increase if these operations were to regularly overlap. Therefore, the combined operation of the generators could result in noise increases exceeding ambient noise levels, which would be a significant impact.

With the incorporation of noise attenuation measures for mechanical equipment **Mitigation Measure M-NO-4, Noise Analysis and Attenuation**, fixed mechanical equipment noise would be reduced and would not substantially increase ambient noise levels. Therefore, noise impacts from the proposed project on sensitive receptors associated with the operation of stationary equipment would be ***less than significant with mitigation***.

VARIANT

The primary difference for the variant with respect to operational noise is that the Authentic Church would not be a sensitive receptor with respect to potential operational noise increases, as it would be demolished and developed as part of Block E3. As noted above, under the proposed project, the church could experience an increase in HVAC noise from the adjacent proposed building on Block E3. However, under the variant, other adjacent sensitive receptors, including those of the proposed project would still remain potentially affected. Therefore, the stationary equipment could result in the variant exceeding the noise ordinance standards. Implementation of Mitigation Measure M-NO-4 would reduce mechanical equipment noise to meet section 2909(a), (b), and (d) standards; therefore, noise impacts from the variant on sensitive receptors associated with the operation of stationary equipment would be ***less than significant with mitigation***.

> **Mitigation Measure M-NO-4: Noise Analysis and Attenuation.** Prior to approval of the first building permit, the project sponsor shall submit documentation to the Environmental Review Officer (ERO), demonstrating with reasonable certainty that the proposed approach to the construction of the various building types fixed mechanical equipment (such as heating, ventilation and air conditioning [HVAC] equipment) meets the noise limits specified in section 2909 of the noise ordinance (i.e., a 5 dB increase above the ambient noise level at the property plane for noise from residential uses or an 8 dB increase above the ambient noise level at the property plane for noise from commercial or industrial uses; and interior noise limits of 55 dBA and 45 dBA for daytime and nighttime hours inside any sleeping or living room in a nearby dwelling unit on a residential property assuming windows

open, respectively). Acoustical treatments required to meet the noise ordinance may include but are not limited to:

- Enclosing noise-generating mechanical equipment;
- Installing relatively quiet models of air handlers, exhaust fans, and other mechanical equipment;
- Using mufflers or silencers on equipment exhaust fans;
- Orienting or shielding equipment to protect noise sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat) to the greatest extent feasible;
- Increasing the distance between noise-generating equipment and noise-sensitive receptors; and/or
- Placing barriers around the equipment to facilitate the attenuation of noise.

Emergency Generators. Prior to approval of the first building permit, the property owner shall submit documentation to the ERO, demonstrating with reasonable certainty that project generator(s) do not exceed 75 dBA at the property plane or generator(s) meet the interior noise limits of noise ordinance section 2909(d) (55 dBA and 45 dBA for daytime and nighttime hours assuming windows open, respectively). Acoustical treatments may include but are not limited to:

- Enclosing generator(s);
- Installing relatively quiet model generator(s);
- Orienting or shielding generator(s) to protect noise-sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat) to the greatest extent feasible;
- Increasing the distance between generator(s) and noise-sensitive receptors; and/or
- Placing barriers around generator(s) to facilitate the attenuation of noise.

In addition, all project generator(s) shall be tested only between the hours of 7 a.m. and 8 p.m.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure M-NO-4 would ensure that mechanical equipment installed as part of the proposed project or variant would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose persons to noise levels in excess of noise ordinance standards. This impact would be ***less than significant with mitigation***.

Impact NO-5: Events that include outdoor amplified sound would result in substantial temporary or periodic increases in ambient noise levels in the immediate project vicinity, or expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance. ***(Less than Significant with Mitigation)***

The project sponsor proposes to use two open space areas for events that may result in operational noise associated with crowd gatherings and amplified music, which are shown as Town Square and the Commons

(see Figure 2-10, p. 2-19). Events at the Town Square – located on the west side of the site adjacent to the shopping mall entry between Blocks W3 and W2 – would occur on weekend mornings and evenings and two daytimes/evenings during the week. Events at the Commons – located on the east side of the site adjacent to 20th Avenue between Blocks E2 and E3 – would occur on weekend evenings (including Fridays) with an approximate frequency of one evening per week. Morning and afternoon events would occur between 11 a.m. and 2 p.m. and afternoon/evening events would occur between 2 p.m. and 8 p.m.

Specific speaker layout and amplification equipment are not available as these components can vary widely depending on the event or type of live performance. Additionally, some amount of shielding would be provided by the buildings, walls, landscape, and topography. Police code article 1, section 49 regulates the use of specified amplified sound equipment and prohibits the operation of such equipment between the hours of 10 p.m. and 7 a.m. if the amplified sound would be plainly audible at a distance of 50 feet from the property line of where the sound is generated.[145] Event noise generated from a public property would be limited to 10 dBA above the local ambient noise level at a distance of 25 feet or more; event noise generated from a commercial property would be limited to 8 dBA above the local ambient at any point outside the property plane. In addition, compliance with Section 2909(d) would limit noise from outdoor activities in residential interiors to 45 dBA between 10 p.m. and 7 a.m. or 55 dBA between 7 a.m. and 10 p.m. with windows open. Any variance to these limits granted pursuant to Section 2910 of the Police Code could only be approved through the Entertainment Commission hearing process required by Section 1060.1 of the police code. Sound amplifying equipment is prohibited from causing noise levels to exceed standards that may be established in the permit requirements set forth in noise ordinance section 2909(e).

The event organizers would also be subject to the following noise regulations:

- Police code section 1060.1 requires a permit for operation of amplified sound equipment at any place of entertainment, limited live performance locales, one-time events, fixed place outdoor amplified sound locales, one-time outdoor amplified sound, or sound truck. The permit requires businesses to comply with the maximum noise levels established under the police and health codes. The San Francisco Entertainment Commission is required to hold a public hearing as part of the permit review process. Permit hearings require the project sponsor or event organizer to provide proof of neighborhood outreach to the commission. Such outreach must consist of at least two of four types of outreach: (1) presentation to a neighborhood, community or residential group; (2) presentation to the leadership of a local not-for-profit that deals with community support such as housing, at risk youth, health, or mental services; (3) a petition including an appropriate number of neighbor signatures according to the sponsor's business address; and/or (4) presentation to a business association if no community organization or not-for-profit exists near the venue.
- As part of the permit application process for limited live performance locales, police code section 1060.5.1 requires preparation of a plan for the business to operate, specifying information such as the days and hours of operation, number of patrons, the types or classes of live performances (in terms of the types of instruments, number of performers, and sound levels), specific description of the sound amplification system, and whether the business intends to project sound outside of any building or at an outdoor location. If amplified sound would occur outdoors, a statement certifying compliance with maximum noise levels established under the police and health codes, and whether the event would

[145] San Francisco Police Code Article 29: Regulation of Noise Guidelines for Noise Control Ordinance Monitoring and Enforcement, December 2014, p. 9, https://www.sfdph.org/dph/files/ehsdocs/ehsnoise/guidelinesnoiseenforcement.pdf, accessed November 8, 2022.

take place within 300 feet of a hospital, school, place of worship, courthouse, public library, or mortuary, would be required.

Due to uncertainties as to the nature and extent of future outdoor events at the project site, the use of amplified sound equipment could still have the potential for significant noise impacts to nearby sensitive receptors in excess of standards established in the San Francisco Noise Ordinance. Uses of the open spaces for events in proximity to existing offsite and future onsite sensitive receptors could increase the potential for noise conflicts or sleep disturbance. The potential noise conflicts would be greatest where amplified sound systems would be used and/or events occur during the more noise-sensitive late evening/nighttime hours when sleep disturbance could occur. As discussed above, promoters of any proposed outdoor events on the project site's outdoor plaza that would use amplified sound or music would be required to obtain a permit from the City prior to the event. The proposed hours of events would be consistent with the restrictions of police code section 49. However, if operational protocols are not established, outdoor events with live performances and amplified sound could potentially exceed the standards that may be established in the permit requirements set forth in section 2909(e) of the noise ordinance. Given that any applicable standards would not be established until the permit is issued, the impact of event noise on existing offsite and future onsite sensitive receptors could be significant. Implementation of **Mitigation Measure M-NO-5, Noise Limits for Outdoor Amplified Sound**, would reduce the potential for substantial event-generated noise.

Mitigation Measure M-NO-5: Noise Limits for Outdoor Amplified Sound.

- The special-event sponsor shall comply with noise controls and restrictions in the amplified sound event permit.
- Speaker systems shall be directed away from the nearest residences to the degree feasible.
- Amplified sound equipment use shall be restricted to the hours between 9 a.m. and 10 p.m., unless an amplified sound permit is received from the Entertainment Commission that would outline a different operation window.
- Outdoor speaker systems shall be operated such that amplified event noise levels do not exceed 80 dBA at a distance of 100 feet from the equipment or as otherwise required by the permit.
- The special-event sponsor shall notify residents within 300 feet of the project site in advance of each special event. The notice shall include the phone number of a contact for noise complaints.
- The special-event sponsor shall have a contact person available to respond to noise complaints, monitor noise levels to confirm compliance with permit requirements, and adjust noise levels (if needed).

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-NO-5 includes restrictions on the hours, duration, and sound levels of voice or music generated by amplified equipment and to require advance notice of events to residents. The mitigation measure identifies specific performance standards consistent with the restrictions of the police code to ensure that events employing amplified sound would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or expose persons to noise levels in excess of standards in noise ordinance. Periodic and temporary noise increases from amplified sound associated with the various proposed events that could occur under the proposed project would be ***less than significant with mitigation***.

VARIANT

The primary difference of the variant with respect to event noise is that the church would no longer be a sensitive receptor with respect to potential operational noise increases, as it would be demolished and developed as part of Block E3. Under the proposed project, the church could experience an increase in noise from events employing amplified sound. However, under the variant, other adjacent sensitive receptors, including those of the proposed project could still be potentially impacted. Therefore, events employing amplified sound could result in the variant exceeding noise ordinance and standards that apply to live events. Mitigation Measure M-NO-5 is identified to establish a performance standard to ensure that event noise would meet noise ordinance standards. Periodic and temporary noise increases from amplified sound associated with the various proposed events that could occur under the variant would be ***less than significant with mitigation***.

Impact NO-6: Proposed project or variant traffic and loading operations would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity. ***(Less than Significant)***

TRAFFIC NOISE

Residential and non-residential development under the proposed project or variant would increase traffic volumes on local roadways used to access the project site as well as the surrounding roadway network. Traffic resulting from implementation of the proposed project or variant would increase the ambient noise levels at sensitive receptors located along roadways in proximity to the project site. Noise levels along the 30 street segments were quantitatively modeled based on the travel demand memorandum prepared for the proposed project or variant and the existing and predicted roadway volumes using the FHWA Traffic Noise Model to determine if vehicular traffic on local roadways would result in impacts at noise-sensitive receptor locations in proximity to the project site.[146,147]

Weekday p.m. peak hour[148] roadway segment volumes generated as part of the travel demand memorandum were analyzed to evaluate resulting traffic-generated noise increases on roadway links most affected by project-related traffic and presented in **Table 3.C-21**, p. 3.C-45. As explained above under Methodology for Assessment of Operational Noise, p. 3.C-19, the following thresholds are applied to determine the significance of project-related traffic noise increases: (1) an increase of more than 5 dBA is considered a significant traffic noise increase; and (2) in places where the existing or resulting noise environment is "conditionally acceptable," "conditionally unacceptable," or "unacceptable" for noise-sensitive uses based the San Francisco Land Use Compatibility Chart for Community Noise (Table 3.C-9, p. 3.C-15), any noise increase greater than 3 dBA is considered a significant traffic noise increase.

As shown in Table 3.C-21, the addition of the proposed project's traffic volumes would result in traffic noise increases ranging from 0 to 3.5 dBA along the roadway segments. Traffic noise levels along the segment of Eucalyptus Drive between 19th Avenue and Junipero Serra Boulevard would increase by 3.5 dBA. Because the existing noise level along this segment is within the "normally acceptable" range of the applicable noise compatibility standard, the 5 dBA increase standard applies; therefore, the applicable standard would be an increase of 5 dBA or more. Traffic noise increases along all other roadway segments would be less than 3 dBA with implementation of the proposed project. Overall, traffic noise impacts associated with the proposed

[146] Kittleson & Associates, *Stonestown Galleria Final Travel Demand Memorandum,* December 8 2022.
[147] Kittelson & Associates, *Stonestown Volume Spreadsheets for Noise,* July 19, 2022.
[148] Defined in the Travel Demand Memo as 3 p.m. to 7 p.m.

project at all analyzed roadway segments in the project vicinity would not exceed the identified applicable standards. Therefore, increases in roadway traffic noise from operation of the proposed project would be ***less than significant***, and no mitigation is required.

Variant

Under the variant, the development of the church site would increase vehicle trip generation and result in a marginal addition of traffic volume to the roadway segments.[149] The same roadway segments analyzed for the proposed project were also analyzed for the variant and the results of the noise increases resulting from modeling are shown in **Table 3.C-22**, p. 3.C-48.

As shown in Table 3.C-22, the addition of the variant's traffic volumes would result in traffic noise increases ranging from 0 to 3.8 dBA along the roadway segments. Traffic noise levels along the segment of Eucalyptus Drive between 19th Avenue and Junipero Serra Boulevard would increase by 3.8 dBA. Because the existing noise level along this segment is within the "normally acceptable" range of the applicable noise compatibility standard, the 5 dBA increase standard applies. Traffic noise increases along all other roadway segments would be less than 3 dBA with implementation of the variant. Overall, traffic noise impacts associated with the variant at all analyzed roadway segments in the project vicinity would not exceed the identified applicable standards. Therefore, increases in roadway traffic noise from operation of the variant would be ***less than significant***, and no mitigation is required.

ONSITE LOADING IMPACTS

The proposed project or variant would include mixed-use buildings generally concentrated along the realigned 20th Avenue, which would install loading zones to serve businesses at the street level of the buildings. Additionally, on-street loading areas would be designated along Buckingham Way and Winston Drive, while off-street loading entrances are proposed for all proposed buildings. Noise from the loading and unloading of goods from trucks or vans is a common occurrence in the city including at the existing Whole Foods Market on the project site and part of the Stonestown Galleria shopping mall. Noise generated in loading zones typically consists of engine idling, backup alarms, and equipment associated with vehicle loading. Loading activities would occur predominantly during daytime hours when people are less sensitive to noise and would not be noticeable due to noise levels of local traffic and other urban noise sources. Intermittent noise from on-street loading activities would not be expected to result in a noticeable increase in overall ambient noise levels. The uses of the proposed project or variant that could generate loading activity would represent only a fraction of the existing loading activity along adjacent roads, such as 20th Avenue, Buckingham Way and Winston Drive. Because noise from loading activity is localized and would be noticeable only in areas adjacent to a building, the potential operation of loading zones would not cause a substantial increase in ambient noise levels. On-street loading activities would be temporary and intermittent when they do occur, and noise from this activity is not expected to substantially increase ambient noise levels by 3 dBA or more. Therefore, increases in truck loading activities from proposed project or operation would be ***less than significant***, and no mitigation is required.

[149] Kittelson & Associates, *Stonestown Volume Spreadsheets for Noise,* July 19, 2022.

Table 3.C-21 P.M. Peak Hour Traffic Noise Level increases in the Vicinity of the Project Site

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Project (dBA)[c]	Exceed Standard?
Eucalyptus Drive from Middlefield Drive to 25th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	No
Eucalyptus Drive from 25th to 19th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	No
Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	59.6	3.5	No
19th Avenue from Sloat Boulevard to Eucalyptus Drive	Residential	60	68.7	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.3	No
19th Avenue from Eucalyptus Drive to Buckingham Way	Residential/ Commercial	60	70.1	3 dBA increase in an area >60 dBA L_{dn}	70.4	0.3	No
19th Avenue from Buckingham Way to Holloway Avenue	Residential/ University	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	No
19th Avenue from Holloway Avenue Junipero Serra Boulevard	Residential	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	No
Holloway Avenue from Font Boulevard to 19th Avenue	Residential/ University	60	55.3	5 dBA increase in an area <60 dBA L_{dn}	55.3	0.0	No
Holloway Avenue from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	56.1	0.0	No
Winston Drive from Lake Merced Boulevard to Buckingham Way	Residential/ University	60	59.5	3 dBA increase in an area >60 dBA L_{dn}	62.0	2.5	No
Winston Drive from Buckingham Way to 19th Avenue	Commercial	75	62.8	5 dBA increase in an area <75 dBA L_{dn}	63.2	0.4	No
Winston Drive from 19th Avenue to Junipero Serra Blvd.	Residential	60	58.9	5 dBA increase in an area <60 dBA L_{dn}	60.0	1.1	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Project (dBA)[c]	Exceed Standard?
Buckingham Way from Winston Drive to 19th Avenue	Residential/ University/ Commercial	60	58.4	5 dBA increase in an area <60 dBA L_{dn}	60.9	2.5	No
Lake Merced Boulevard from Sunset Boulevard to Winston Drive	Residential	60	69.5	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.2	No
20th Avenue from Ocean Avenue to Eucalyptus Drive	Residential	60	57.9	5 dBA increase in an area <60 dBA L_{dn}	58.3	0.4	No
Lake Merced Boulevard from Winston Drive to Font Boulevard.	University, Golf Course	72	67.0	5 dBA increase in an area <72 dBA L_{dn}	67.2	0.2	No
Sunset Boulevard from Lake Merced Boulevard to Sloat Boulevard	Residential	60	68.0	3 dBA increase in an area >60 dBA L_{dn}	68.1	0.1	No
Lake Merced Boulevard from Sunset Blvd. to Skyline Boulevard	Residential	60	59.4	5 dBA increase in an area <60 dBA L_{dn}	59.4	0.0	No
Lake Merced Boulevard from Font Boulevard to Higuera Avenue	Residential/ University	60	71.2	3 dBA increase in an area >60 dBA L_{dn}	71.4	0.2	No
Junipero Serra Boulevard from 19th Avenue to Font Boulevard	Residential	60	74.1	3 dBA increase in an area >60 dBA L_{dn}	74.3	0.2	No
19th Avenue from Santiago Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.4	0.3	No
19th Avenue from Ulloa Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.3	0.2	No
19th Avenue from Vicente Street to Ulloa Street	Residential/ Park	60	69.4	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.3	No
19th Avenue from Wawona Street to Vicente Street	Residential/ Park	60	69.6	3 dBA increase in an area >60 dBA L_{dn}	69.8	0.2	No
19th Avenue from Sloat Boulevard to Wawona Street	Park/ Institutional	70	69.7	5 dBA increase in an area <70 dBA L_{dn}	69.9	0.2	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Project (dBA)[c]	Exceed Standard?
Sloat Boulevard from 19thAvenue to Junipero Serra Boulevard	Residential	60	67.0	3 dBA increase in an area >60 dBA L_{dn}	67.0	0.0	No
Portola Drive from 15th Avenue to Sloat Boulevard	Residential	60	69.0	3 dBA increase in an area >60 dBA L_{dn}	69.2	0.2	No
Junipero Serra Boulevard from Eucalyptus Drive to Sloat Boulevard	Residential/ School	60	68.1	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.9	No
Ocean Avenue from 19th Avenue to Aptos Avenue	Residential/ Park	60	62.6	5 dBA increase in an area <60 dBA L_{dn}	63.5	0.9	No
Ocean Avenue from Aptos Avenue to Westgate Drive	Residential/ Park	60	62.6	3 dBA increase in an area >60 dBA L_{dn}	63.5	0.9	No

SOURCE: ESA 2022

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

[a] Road center to sensitive receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the algorithms of the FHWA Traffic Noise Prediction Model.

[b] The analysis considered the vehicle mix based on truck percentages for 19th Avenue (SR-1) as documented by Caltrans for the year 2020. Traffic speeds for all vehicle classes were set consistent with the City and County of San Francisco's interactive map of speed limits, https://data.sfgov.org/Transportation/Map-of-Speed-Limits/ttcm-fwt2.

[c] Compatibility standards are taken from the City and County of San Francisco's General Plan Noise Element. Refer to Table B-5 in Attachment B of this memorandum.

Table 3.C-22 P.M. Peak Hour Traffic Noise Level increases of the Variant in the Vicinity of the Project

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Variant (dBA)[c]	Exceed Standard?
Eucalyptus Drive from Middlefield Drive to 25th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	No
Eucalyptus Drive from 25th to 19th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	No
Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	59.9	3.8	No
19th Avenue from Sloat Boulevard to Eucalyptus Drive	Residential	60	68.7	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.3	No
19th Avenue from Eucalyptus Drive to Buckingham Way	Residential/ Commercial	60	70.1	3 dBA increase in an area >60 dBA L_{dn}	70.4	0.3	No
19th Avenue from Buckingham Way to Holloway Avenue	Residential/ University	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	No
19th Avenue from Holloway Avenue Junipero Serra Boulevard	Residential	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	No
Holloway Avenue from Font Boulevard to 19th Avenue	Residential/ University	60	55.3	5 dBA increase in an area <60 dBA L_{dn}	55.3	0.0	No
Holloway Avenue from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	56.1	0.0	No
Winston Drive from Lake Merced Boulevard to Buckingham Way	Residential/ University	60	59.5	3 dBA increase in an area >60 dBA L_{dn}	62.0	2.5	No
Winston Drive from Buckingham Way to 19th Avenue	Commercial	75	62.8	5 dBA increase in an area <75 dBA L_{dn}	63.4	0.6	No
Winston Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	58.9	5 dBA increase in an area <60 dBA L_{dn}	60.1	1.2	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Variant (dBA)[c]	Exceed Standard?
Buckingham Way from Winston Drive to 19th Avenue	Residential/ University/ Commercial	60	58.4	5 dBA increase in an area <60 dBA L_{dn}	60.9	2.5	No
Lake Merced Boulevard from Sunset Boulevard to Winston Drive	Residential	60	69.5	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.2	No
20th Avenue from Ocean Avenue to Eucalyptus Drive	Residential	60	57.9	5 dBA increase in an area <60 dBA L_{dn}	58.3	0.4	No
Lake Merced Boulevard from Winston Drive to Font Boulevard.	University, Golf Course	72	67.0	5 dBA increase in an area <72 dBA L_{dn}	67.2	0.2	No
Sunset Boulevard from Lake Merced Boulevard to Sloat Boulevard	Residential	60	68.0	3 dBA increase in an area >60 dBA L_{dn}	68.1	0.1	No
Lake Merced Boulevard from Sunset Boulevard to Skyline Boulevard	Residential	60	59.4	5 dBA increase in an area <60 dBA L_{dn}	59.4	0.0	No
Lake Merced Boulevard from Font Boulevard to Higuera Avenue	Residential/ University	60	71.2	3 dBA increase in an area >60 dBA L_{dn}	71.4	0.2	No
Junipero Serra Boulevard from 19th Avenue to Font Boulevard	Residential	60	74.1	3 dBA increase in an area >60 dBA L_{dn}	74.3	0.2	No
19th Avenue from Santiago Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.4	0.3	No
19th Avenue from Ulloa Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.3	0.2	No
19th Avenue from Vicente Street to Ulloa Street	Residential/ Park	60	69.4	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.3	No
19th Avenue from Wawona Street to Vicente Street	Residential/ Park	60	69.6	3 dBA increase in an area >60 dBA L_{dn}	69.8	0.2	No
19th Avenue from Sloat Boulevard to Wawona Street	Park/ Institutional	70	69.7	5 dBA increase in an area <70 dBA L_{dn}	69.9	0.2	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Variant (dBA)[c]	Exceed Standard?
Sloat Blvd. from 19th Avenue to Junipero Serra Boulevard	Residential	60	67.0	3 dBA increase in an area >60 dBA L_{dn}	67.0	0.0	No
Portola Drive from 15th Avenue to Sloat Boulevard	Residential	60	69.0	3 dBA increase in an area >60 dBA L_{dn}	69.2	0.2	No
Junipero Serra Boulevard from Eucalyptus Drive to Sloat Boulevard	Residential/ School	60	68.1	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.9	No
Ocean Avenue from 19th Avenue to Aptos Avenue	Residential/ Park	60	62.6	5 dBA increase in an area <60 dBA L_{dn}	63.5	0.9	No
Ocean Avenue from Aptos Avenue to Westgate Drive	Residential/ Park	60	62.6	3 dBA increase in an area >60 dBA L_{dn}	63.5	0.9	No

SOURCE: ESA 2022

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

[a] Road center to sensitive receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the algorithms of the FHWA Traffic Noise Prediction Model.

[b] The analysis considered the vehicle mix based on truck percentages for 19th Avenue (SR-1) as documented by Caltrans for the year 2020. Traffic speeds for all vehicle classes were set consistent with the City and County of San Francisco's interactive map of speed limits, https://data.sfgov.org/Transportation/Map-of-Speed-Limits/ttcm-fwt2.

[c] Compatibility standards are taken from the City and County of San Francisco's General Plan Noise Element. Refer to Table B-5 in Attachment B of this memorandum.

CUMULATIVE IMPACTS

Impact C-NO-1: Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. ***(Significant and Unavoidable with Mitigation)***

In general, the potential for cumulative noise increases associated with project construction would result if there are any other projects located nearby that could be constructed at the same time and could affect the same sensitive receptors. The geographic scope of potential cumulative construction noise impacts encompasses a 900-foot radius from the boundaries of the project site. As noted in Section 3.C.2, Environmental Setting, p. 3.C-1, a distance of 900 feet was selected because typical construction noise levels attenuate to approximately 55 dBA at a distance of 900 feet if there is a direct line-of-sight between a noise source and a noise-sensitive receptor. Cumulative projects within the 900-foot area that could generate construction-related noise levels at the same time as the proposed project or variant include the Lake Merced Boulevard Quick-Build Pedestrian Safety Improvements Project, SFSU Future State 2035, and a portion of the Parkmerced project (see Table 3-1, p. 3-7). Of these projects, SFSU Future State 2035 and Parkmerced projects could generate construction-related noise levels at the same time as the proposed project or variant.

The SFSU Future State 2035 long-term planning projects would include the construction of nearly 10,000 student housing and apartments over a 15-year timeframe. This project would construct new multi-story residential buildings on either side of Buckingham Way, adjacent to the project site. However, these proposed buildings would replace the existing SFSU housing, which are currently the closest noise sensitive land uses to the project site. Future State 2035 includes the replacement of student housing located near the project site; therefore, it is reasonable to assume that some sensitive receptors would not be present to experience combined construction noise impacts. However, SFSU sensitive receptors could remain during construction of portions of the SFSU Future State 2035 project and may experience the combined construction noise from the proposed project or variant and SFSU construction.

The Parkmerced project would add up to 5,679 new residential units as well as new commercial and retail services and open space. This project is approximately 600 feet south of the project site and separated from the project site by the SFSU campus and substantial intervening structures. Therefore, the Parkmerced construction would not substantially combine with the proposed project or variant to result in a significant cumulative impact.

The timing of the demolition and construction of student housing along Buckingham Way is unknown. The construction-related noise levels associated with the SFSU Future State 2035 project would be associated with site preparation, demolition, and building construction activities. The construction of the SFSU cumulative projects and proposed project or variant could result in combined noise levels that would exceed 10 dBA above the ambient noise level at the nearest sensitive receptors, which would be a significant cumulative impact.

Construction of phases 1, 2, and 6 of the proposed project or variant would occur across the street from the existing and future SFSU housing. Implementation of noise controls as specified in Mitigation Measure M-NO-1 would reduce the proposed project or variant's contribution to temporary increases in noise levels at sensitive receptors. The largest predicted increase over ambient noise levels at the SFSU housing would be as much as 29 dBA during Phase 6 of the proposed project or variant's construction. Even the most effective noise control measures, such as construction of temporary barriers, have an upper limit of 15 dBA of noise reduction, which would not be sufficient to reduce some of the noisiest construction phases. Although

overall construction for a given phase would be as much as 45 months, construction activities would vary and move around the site and the noisiest construction phases (demolition and grading) would only occur for the first 10 months. However, given the duration of the noisiest construction anticipated over approximately 10 months of each phase in close proximity to sensitive receptors, construction noise impacts would still be a significant impact at the SFSU housing sensitive receptor. Therefore, the proposed project or variant's contribution to this cumulative impact would be cumulatively considerable, and this cumulative impact would be ***significant and unavoidable with mitigation***.

CUMULATIVE CONSTRUCTION EQUIPMENT NOISE DURING NIGHTTIME HOURS

Estimated interior noise levels from construction of the project or variant at the nearest residences would meet or exceed the 45 dBA interior standard. Therefore, the nighttime construction noise impact is significant and Mitigation Measure M-NO-1 is identified to reduce nighttime construction noise levels**.**

Construction of phases 1, 2, and 6 of the proposed project or variant would occur across the street from the existing SFSU housing and future SFSU housing (i.e., that would be developed as part of SFSU Future State 2035 project) on Buckingham Way. It is unknown to what degree the SFSU Future State 2035 project would require nighttime construction work; however, it is possible that some nighttime work would likely be required for some activities, such as limited concrete pours. While it is unlikely that such nighttime activities of this cumulative project and the proposed project or variant would occur simultaneously, it is conservatively assumed that such a scenario could occur. The duration of nighttime concrete pours is usually limited to one or two nights, which for the purposes of assessing construction noise impacts, would not be considered a substantial duration. However, similar to the daytime construction noise impact, the noise reduction measures identified in Mitigation Measure M-NO-1 would reduce the severity of the proposed project or variant's temporary or periodic increases in ambient noise levels; however, these measures would not necessarily reduce these noise increases to below the 45 dBA interior nighttime noise standard, which is considered significant and unavoidable. Therefore, the proposed project or variant's potentially significant cumulative nighttime construction noise impacts could overlap with other nighttime construction and would therefore contribute considerably to the cumulative impact. As such, the proposed project or variant's contribution to this cumulative impact would be cumulatively considerable, and this impact would be ***significant and unavoidable***.

Impact C-NO-2: Construction of the proposed project or variant, in combination with cumulative projects, would not result in the generation of excessive groundborne vibration or groundborne noise levels during construction. ***(Less than Significant)***

Vibration impact analysis is based on instantaneous PPV levels and worst-case groundborne vibration levels from construction are generally determined by whichever individual piece of equipment generates the highest vibration levels. Unlike the analysis for average noise levels, in which noise levels of multiple pieces of equipment can be combined to generate a maximum combined noise level, instantaneous PPV levels do not combine in this way. As described under Impact NO-3, the vibration levels from construction of the proposed project or variant would be well below the applicable 0.25 and 0.3 PPV thresholds. Vibration from construction of other cumulative projects, even if those projects are located in close proximity to the proposed project and variant and another structure (e.g., the SFSU student housing on Buckingham Way), would not combine to raise the maximum PPV because there would be sufficient distance (the 50-foot width of Buckingham Way) as well a substantial unlikelihood of simultaneous vibration peaks from separate construction sites. For these reasons, the impact of construction vibration from construction of cumulative

projects located near the proposed action and variant would be highly localized and would not be anticipated to combine to further increase vibration levels.

Therefore, cumulative groundborne vibration impacts would be ***less than significant***.

Impact C-NO-3: Operation of the stationary equipment on the project site from the proposed project or variant, in combination with cumulative projects, would not result in the generation of a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance. ***(Less than Significant)***

Estimated exterior noise levels from operation of the proposed project or variant at the nearest residences could meet or exceed the 5 dBA above the ambient level applicable to residential properties. Therefore, the noise impact with respect to operation of mechanical equipment is significant, and Mitigation Measure M-NO-4 is identified to reduce stationary equipment noise levels.

Similar to the cumulative construction analysis, the geographic scope of potential cumulative noise impacts encompasses a 900-foot radius from the boundaries of the project site. Other cumulative projects that could generate operational noise level increases within this proximity include SFSU Future State 2035.

Noise from operation of mechanical equipment at the SFSU Future State 2035 project would be localized. In addition, most impacts related to stationary equipment are localized and usually within 150 feet of equipment.[150] Most of the existing residential structures are located 150 feet or more from the proposed Stonestown project site and have existing, older HVAC equipment on the rooftops. Due to the distance of the proposed project or variant buildings from these SFSU sites and the typical rate of attenuation for noise, the potential for combined noise effects from operation of stationary equipment would be extremely limited, particularly given that many of the existing SFSU housing units that would be replaced already have HVAC equipment. Therefore, the proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative noise impact from operation of stationary equipment. Therefore, cumulative noise impacts from stationary equipment would be ***less than significant***.

Impact C-NO-4: Proposed project or variant traffic and loading operations, in combination with cumulative projects, would not cause a substantial permanent increase in ambient noise levels in the project vicinity. ***(Less than Significant)***

Roadway segment volumes generated as part of the travel demand memorandum were quantitatively modeled for the existing condition and 2050 cumulative condition with the proposed project.[151] The roadway segments analyzed and results of the cumulative noise increases are presented in **Table 3.C-23**. These cumulative traffic noise levels represent a conservative estimate that would occur with either the proposed project or variant. A cumulative traffic noise impact would occur if noise levels increase by more than 3 or 5 dBA, depending on whether the existing noise levels exceed the normally acceptable land use compatibility standard for the land uses along a given segment.

[150] At a distance greater than 150 feet, a rooftop HVAC unit with a specification of 75 dBA at 50 feet would not exceed the nighttime noise limit of section 2909(d) from the nearest residential building.
[151] The 2050 cumulative condition accounts for expected citywide growth by 2050 based on growth projections developed by the planning department.

Table 3.C-23 P.M. Peak Hour Traffic Noise Level Increases in the Vicinity of the Project under Cumulative Conditions with Either the Proposed Project or Variant

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Project or Variant (dBA)[c]	Exceed Standard?
Eucalyptus Drive from Middlefield Drive to 25th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	58.9	1.2	No
Eucalyptus Drive from 25th to 19th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	58.9	1.2	No
Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	60.9	4.8	No
19th Avenue from Sloat Boulevard to Eucalyptus Drive	Residential	60	68.7	3 dBA increase in an area >60 dBA L_{dn}	69.5	0.8	No
19th Avenue from Eucalyptus Drive to Buckingham Way	Residential/ Commercial	60	70.1	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.7	No
19th Avenue from Buckingham Way to Holloway Avenue	Residential/ University	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	71.1	0.5	No
19th Avenue from Holloway Avenue Junipero Serra Boulevard	Residential	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	71.1	0.5	No
Holloway Avenue from Font Boulevard to 19th Avenue	Residential/ University	60	55.3	5 dBA increase in an area <60 dBA L_{dn}	58.4	3.1	No
Holloway Avenue from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	59.5	3.4	No
Winston Drive from Lake Merced Boulevard to Buckingham Way	Residential/ University	60	59.5	3 dBA increase in an area >60 dBA L_{dn}	62.4	2.9	No
Winston Drive from Buckingham Way to 19th Avenue	Commercial	75	62.8	5 dBA increase in an area <75 dBA L_{dn}	64.2	1.4	No
Winston Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	58.9	5 dBA increase in an area <60 dBA L_{dn}	60.9	2.0	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Project or Variant (dBA)[c]	Exceed Standard?
Buckingham Way from Winston Drive to 19th Avenue	Residential/ University/ Commercial	60	58.4	5 dBA increase in an area <60 dBA L_{dn}	60.9	2.5	No
Lake Merced Boulevard from Sunset Boulevard to Winston Drive	Residential	60	69.5	3 dBA increase in an area >60 dBA L_{dn}	70.3	0.8	No
20th Avenue from Ocean Avenue to Eucalyptus Drive	Residential	60	57.9	5 dBA increase in an area <60 dBA L_{dn}	59.9	2.0	No
Lake Merced Boulevard from Winston Drive to Font Boulevard.	University, Golf Course	72	67.0	5 dBA increase in an area <72 dBA L_{dn}	68.5	1.5	No
Sunset Boulevard from Lake Merced Boulevard to Sloat Boulevard	Residential	60	68.0	3 dBA increase in an area >60 dBA L_{dn}	68.4	0.4	No
Lake Merced Boulevard from Sunset Blvd. to Skyline Boulevard	Residential	60	59.4	5 dBA increase in an area <60 dBA L_{dn}	61.1	1.7	No
Lake Merced Boulevard from Font Boulevard to Higuera Avenue	Residential/ University	60	71.2	3 dBA increase in an area >60 dBA L_{dn}	72.8	1.6	No
Junipero Serra Boulevard from 19th Avenue to Font Boulevard	Residential	60	74.1	3 dBA increase in an area >60 dBA L_{dn}	74.5	0.4	No
19th Avenue from Santiago Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.6	0.5	No
19th Avenue from Ulloa Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.5	0.4	No
19th Avenue from Vicente Street to Ulloa Street	Residential/ Park	60	69.4	3 dBA increase in an area >60 dBA L_{dn}	69.9	0.5	No
19th Avenue from Wawona Street to Vicente Street	Residential/ Park	60	69.6	3 dBA increase in an area >60 dBA L_{dn}	69.9	0.3	No
19th Avenue from Sloat Boulevard to Wawona Street	Park/ Institutional	70	69.7	5 dBA increase in an area <70 dBA L_{dn}	70.2	0.5	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Existing + Project (dBA, L_{eq})	Difference between Existing and Existing + Project or Variant (dBA)[c]	Exceed Standard?
Sloat Boulevard from 19thAvenue to Junipero Serra Boulevard	Residential	60	67.0	3 dBA increase in an area >60 dBA L_{dn}	68.3	1.3	No
Portola Drive from 15th Avenue to Sloat Boulevard	Residential	60	69.0	3 dBA increase in an area >60 dBA L_{dn}	69.6	0.6	No
Junipero Serra Boulevard from Eucalyptus Drive to Sloat Boulevard	Residential/ School	60	68.1	3 dBA increase in an area >60 dBA L_{dn}	69.3	1.2	No
Ocean Avenue from 19th Avenue to Aptos Avenue	Residential/ Park	60	62.6	5 dBA increase in an area <60 dBA L_{dn}	63.5	0.9	No
Ocean Avenue from Aptos Avenue to Westgate Drive	Residential/ Park	60	62.6	3 dBA increase in an area >60 dBA L_{dn}	63.5	0.9	No

SOURCES: Kittelson 2022; ESA 2022

ABBREVIATIONS:

dBA = A-weighted decibel; L_{eq} = average or constant sound level

NOTES:

a Road center to sensitive receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the algorithms of the FHWA Traffic Noise Prediction Model.

b The analysis considered the vehicle mix based on truck percentages for 19th Avenue (SR-1) as documented by Caltrans for the year 2020. Traffic speeds for all vehicle classes were set consistent with the City and County of San Francisco's interactive map of speed limits, https://data.sfgov.org/Transportation/Map-of-Speed-Limits/ttcm-fwt2.

c. Compatibility standards are taken from the City and County of San Francisco's General Plan Noise Element. Refer to Table B-5 in Attachment B of this memorandum.

As shown in Table 3.C-23, traffic noise increases related to the proposed project or variant in combination with cumulative projects would range from 0.3 to 4.8 dBA along the roadway segments. Roadside noise levels would increase by 4.8 dBA along Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard. The existing noise level along this segment is within the "normally acceptable" range of the applicable noise compatibility standard; therefore, the applicable standard would be an increase of 5 dBA or more. Overall, cumulative traffic noise impacts along all 30 roadway segments in the project vicinity would not exceed the identified applicable standards. Therefore, cumulative traffic noise impacts would be ***less than significant***.

INTENTIONALLY BLANK

3.D Air Quality

3.D.1 Introduction

This section describes the existing air quality conditions in the project area and vicinity, identifies the regulatory framework for air quality management, and analyzes the potential for the proposed project or variant construction and operation to affect air quality conditions, both regionally and locally. The analysis determines whether those emissions are significant in relation to applicable CEQA air quality standards and identifies mitigation measures to avoid or reduce potential adverse significant impacts.

The analysis in this section is based on a review of existing air quality conditions in the region and air quality regulations administered by the United States Environmental Protection Agency (U.S. EPA), the California Air Resources Board (the air board), and the Bay Area Air Quality Management District (air district). This analysis includes methods identified in the air district's 2017 California Environmental Quality Act Air Quality Guidelines (CEQA Air Quality Guidelines), the air board's Miscellaneous Process Methodology 7.9 for Paved Road Dust,[152] the San Francisco Citywide Health Risk Assessment,[153] and the health risk assessment methodology published by the Office of Environmental Health Hazard Assessment (OEHHA) in 2015.[154,155]

3.D.2 Environmental Setting

The project site is within the San Francisco Bay Area air basin (air basin), which includes all of San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa counties, and the southern and southwestern portions, respectively, of Sonoma and Solano counties. The air district is the regional agency responsible for air quality planning in the air basin.

CLIMATE AND METEOROLOGY

The air basin's moderate climate steers storm tracks away from the region for much of the year, although storms generally affect the region from November through April. San Francisco's proximity to the onshore breezes stimulated by the Pacific Ocean provides for generally good air quality in the Plan area and the city as a whole.

Temperatures in the project vicinity average in the mid-50s annually, generally ranging from the low 40s on winter mornings to mid-70s during summer afternoons. Daily and seasonal oscillations of temperature are small because of the moderating effects of San Francisco Bay. In contrast to the steady temperature regime, rainfall is highly variable and confined almost exclusively to the "rainy" period from November through April. Precipitation may vary widely from year to year as a shift in annual storm tracks of a few hundred miles can mean the difference between a wet year and drought conditions.

---

[152] California Air Resources Board, *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust*, March 2021, https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf, accessed November 3, 2022.
[153] San Francisco Department of Public Health, San Francisco Planning Department, & Ramboll, *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*, September 2020, https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf, accessed September 29, 2022.
[154] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.
[155] California Environmental Protection Agency, *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment*, February 2015, http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, accessed September 29, 2022.

Atmospheric conditions—such as wind speed, wind direction, and air temperature gradients—interact with the physical features of the landscape to determine the movement and dispersal of air pollutants regionally. The project area lies within the Peninsula climatological subregion. Marine air traveling through the Golden Gate is a dominant weather factor affecting dispersal of air pollutants within the region. Wind measurements collected on the San Francisco mainland indicate a prevailing wind direction from the west and an average annual wind speed of 10.6 miles per hour.[156] Increased temperatures create the conditions in which ozone formation can increase.

AMBIENT AIR QUALITY – CRITERIA AIR POLLUTANTS

As required by the federal Clean Air Act of 1970, the U.S. EPA initially identified six criteria air pollutants that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. The U.S. EPA calls these pollutants "criteria air pollutants" because the agency has regulated them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six criteria air pollutants originally identified by U.S. EPA. Since that time, subsets of particulate matter have been identified for which permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM_{10}) and particulate matter of 2.5 microns in diameter or less ($PM_{2.5}$). See Section 4.D.3, Regulatory Framework, for further discussion of specific pollutants and their attainment status within the air basin with respect to state and federal air quality standards.

The region's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the San Francisco Bay Area. **Table 3.D-1** presents a 5-year summary for the period 2017 to 2021 of the highest annual criteria air pollutant concentrations collected at the air quality monitoring station operated and maintained by the air district at 16th and Arkansas streets in San Francisco's Potrero Hill neighborhood. Table 3.D-1 also compares measured pollutant concentrations with the National Ambient Air Quality Standards (national air quality standards) and California Ambient Air Quality Standards (California air quality standards) for each of the criteria air pollutants. Concentrations shown in bold indicate an exceedance of the standard for the air basin (see **Table 3.D-2**, p. 3.D-4, for the air basin's attainment status for each criteria air pollutant). Table 3.D-1 does not include SO_2 because monitors are not required for the bay area as the air basin has never been designated as non-attainment for SO_2.

It should be noted that the ambient air quality standards—both federal and state—are expressed as airborne concentrations of various pollutants. Compliance with the standards is on a regional basis. In the bay area, compliance is demonstrated by ongoing measurements of pollutant concentrations at more than 30 air quality monitoring stations operated by the air district in all nine bay area counties. An exceedance of an ambient air quality standard at any one of the stations counts as a regional exceedance.

[156] Western Regional Climate Center, https://wrcc.dri.edu/Climate/comp_table_show.php?stype=wind_speed_avg, accessed September 29, 2022.

Table 3.D-1 Summary of San Francisco Air Quality Monitoring Data (2017–2021)

Pollutant	Most-Stringent Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured[a]				
		2017	2018	2019	2020	2021
OZONE						
Days 1-Hour Standard Exceeded		0	0	1	0	0
Maximum 1-Hour Concentration (ppm)	>0.090 ppm[b]	0.087	0.065	**0.091**	0.065	0.074
Days 8-Hour Standard Exceeded		0	0	1	0	0
Maximum 8-Hour Concentration (ppm)	>0.070 ppm[c]	0.054	0.049	**0.073**	0.056	0.054
CARBON MONOXIDE (CO)						
Days 1-Hour Standard Exceeded		0	0	0	0	0
Maximum 1-Hour Concentration (ppm)	>20 ppm[b]	2.5	1.9	1.2	1.8	1.2
Days 8-Hour Standard Exceeded		0	0	0	0	0
Maximum 8-Hour Concentration (ppm)	>9 ppm[b]	1.4	1.6	1.0	1.6	0.9
SUSPENDED PARTICULATES (PM_{10})						
Days 24-Hour Standard Exceeded		2	0	0	2	0
Maximum 24-Hour Concentration (µg/m^3)	>50 µg/m^3[b]	**77**	43	42	**105**	33.0
SUSPENDED PARTICULATES ($PM_{2.5}$)						
Days 24-Hour Standard Exceeded		7	14	0	8	0
Maximum 24-Hour Concentration (µg/m^3)	>35 µg/m^3[c]	**49.9**	**177.4**	25.4	**147.3**	22.4
Annual Average (µg/m^3)	>12 µg/m^3[b,c]	9.7	11.7	7.7	10.5	7.1
NITROGEN DIOXIDE (NO_2)						
Days 1-Hour Standard Exceeded		0	0	0	0	0
Maximum 1-Hour Concentration (ppm)	>0.100 ppm[c]	0.073	0.069	0.061	0.047	0.049

SOURCES: California Air Resource Board, Top 4 Summary for the San Francisco Arkansas Street monitoring site, 2017–2021, https://www.arb.ca.gov/adam/topfour/topfour1.php;
United States Environmental Protection Agency AirData Air Quality Monitors for Arkansas Street monitoring site, 2021, https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=5f239fd3e72f424f98ef3d5def547eb5 – for CO values

ABBREVIATIONS:

N/A = data not available; ppm = parts per million; µg/m^3 = micrograms per cubic meter

NOTES:

Bold values are in excess of applicable standard.

[a] Number of days exceeded is for all days in a given year, except for particulate matter. PM_{10} is monitored every 6 days. Therefore, the number of days exceeded is out of approximately 60 annual samples.
[b] California/State standard, not to be exceeded.
[c] National/Federal standard, not to be exceeded.

Table 3.D-2 State and Federal Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	State (California air quality standards[a])		Federal (national air quality standards[b])	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	1 hour	0.09 ppm	**N**	NA	—[c]
	8 hours	0.07 ppm	**N**[d]	0.070 ppm	**N**
Carbon monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hours	9 ppm	A	9 ppm	A
Nitrogen dioxide (NO_2)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur dioxide (SO_2)	1 hour	0.25 ppm	A	0.075	A
	24 hours	0.04 ppm	A	0.14	A
	Annual	NA	NA	0.03 ppm	A
Particulate matter (PM_{10})	24 hours	50 µg/m^3	**N**	150 µg/m^3	U
	Annual[e]	20 µg/m^3	**N**	NA	NA
Fine particulate matter ($PM_{2.5}$)	24 hours	NA	NA	35 µg/m^3	**N**
	Annual	12 µg/m^3	**N**	12 µg/m^3	U/A[f]
Sulfates	24 hours	25 µg/m^3	A	NA	NA
Lead	30 days	1.5 µg/m^3	A	NA	NA
	Cal. quarter	NA	NA	1.5 µg/m^3	A
Hydrogen sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-reducing particles	8 hours	—[g]	A	NA	NA

SOURCE: Bay Area Air Quality Management District, *Standards and Attainment Status*, 2021, https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status, accessed September 13, 2022

ABBREVIATIONS:

A = Attainment; **N** = Nonattainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter

NOTES:

[a] California air quality standards= State ambient air quality standards (California). California air quality standards for ozone, CO (except Lake Tahoe), SO_2 (one-hour and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All other State standards shown are values not to be equaled or exceeded.

[b] national air quality standards = national ambient air quality standards. National air quality standards, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The eight-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of the 98th percentile is less than the standard.

[c] U.S. EPA revoked the national one-hour ozone standard on June 15, 2005.

[d] This state eight-hour ozone standard was approved in April 2005 and became effective in May 2006.

[e] State standard = annual geometric mean; national standard = annual arithmetic mean.

[f] In December 2012, the U.S. EPA strengthened the annual $PM_{2.5}$ national air quality standard from 15 to 12 µg/m^3. In December 2014, the U.S. EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ national air quality standard. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

[g] Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

The national and California air quality standards were set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. As explained by the air board, "An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment."[157] That is, if a region is in compliance with the ambient air quality standards, its regional air quality can be considered protective of public health. The national air quality standards are statutorily required to be set by the U.S. EPA at levels that are "requisite to protect the public health."[158] Therefore, the closer a region is to attaining a particular national standard, the lower the human health impact is from that pollutant.

A brief description of the health effects of exposure to criteria air pollutants is provided below.

OZONE

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds [VOCs] by some regulating agencies) and nitrogen oxides (NOx). The main sources of ROG and NOx, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the bay area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional criteria air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.

Table 3.D-1, p. 3.D-3, shows that, according to published data, the most stringent applicable standards (state one-hour standard of 9 parts per hundred million was exceeded in 2019, and the federal eight-hour standard of 7 pphm) also was exceeded in San Francisco in 2019.

CARBON MONOXIDE

CO is an odorless, colorless gas usually formed as a result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 3.D-1, p. 3.D-3, the more stringent state CO standards were not exceeded between 2017 and 2021.

PARTICULATE MATTER (PM_{10} AND $PM_{2.5}$)

Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from man-made and natural sources. Particulate matter regulated by the state and federal Clean Air Acts is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In the bay area, motor vehicles generate about one-half of the air basin's

[157] California Air Resources Board, *California Ambient Air Quality Standards,* last updated August 10, 2017, https://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm, accessed September 29, 2022.
[158] See https://www.law.cornell.edu/uscode/text/42/7409.

particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the air board, studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children." The air board also reports that statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits and avoid hundreds of thousands of episodes of respiratory illness in California. Among the criteria air pollutants that are regulated, particulates appear to represent a serious ongoing health hazard. In 1999, the air district reported in its CEQA Air Quality Guidelines that studies had shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the bay area. High levels of particulate matter can exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.

$PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways and high-traffic roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and lung development in children.[159] New studies are also showing that long-term average exposure to $PM_{2.5}$ is associated with an increased risk of death from the novel coronavirus 2019 disease (COVID-19) in the United States. One study found that an increase of 1 microgram per cubic meter ($\mu g/m^3$) in $PM_{2.5}$ is associated with an 8 percent increase in the COVID-19 death rate.[160] Exposure to wildfire smoke (which includes $PM_{2.5}$) experienced by Californians in 2020 also could have contributed to increased cases of COVID-19.[161] Note that these studies all demonstrate a correlational relationship between exposure to $PM_{2.5}$ and increases in the COVID-19 death rate, not a causal relationship.

Table 3.D-1, p. 3.D-3, shows that the state 24-hour PM_{10} standard of 50 micrograms per cubic meter ($\mu g/m^3$) was exceeded on four monitored days per year between 2017 and 2021. The federal 24-hour $PM_{2.5}$ standard was exceeded on seven days per year in 2017, 14 days per year in 2018, and 8 days per year in 2020. The state annual average standard was not exceeded between 2017 and 2021.

NITROGEN DIOXIDE

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. In 2010, the U.S. EPA

[159] San Francisco Department of Public Health, *Assessment and Mitigation of Air Pollutant Health Effect from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008, p. 7, http://www.sfhealthequity.org/component/jdownloads/summary/3-air/90-assessment-and-mitigation-of-air-pollutant-health-effects-from-intra-urban-roadways-guidance-for-land-use-planning-and-environmental-review?Itemid=62, accessed September 29, 2022.
[160] X. Wu, R. C. Nethery, B. M. Sabath, D. Braun, and F. Dominici, *Exposure to Air Pollution and COVID-19 Mortality in the United States,* April 24, 2020, medRxiv 2020.04.05.20054502, https://doi.org/10.1101/2020.04.05.20054502, accessed September 15, 2022. Note that this article has not yet been peer-reviewed.
[161] Xiaodan Zhou, Kevin Josey, Leila Kamareddine, Miah C. Caine, Tianjia Liu, Loretta J. Mickley, Matthew Cooper, and Francesca Dominici, *Excess of COVID-19 Cases and Deaths due to Fine Particulate Matter Exposure During the 2020 Wildfires in the United States*, August 13, 2021, https://pubmed.ncbi.nlm.nih.gov/34389545/, accessed September 15, 2022.

implemented a new one-hour NO_2 standard presented in Table 3.D-2, p. 3.D-4. On November 15, 2012, the air board approved a revision to the State Implementation Plan for implementing the 2010 federal NO_2 standards. All areas in California are designated as attainment/unclassified for the federal NO_2 standards.[162] Table 3.D-1, p. 3.D-3, shows the new federal standard was not exceeded at the San Francisco station between 2017 and 2021.

U.S. EPA also has established requirements for a new monitoring network to measure NO_2 concentrations near major roadways in urban areas with a population of 500,000 or more. Sixteen new near-roadway monitoring sites are required in California, three of which are in the bay area. These monitors are located in Berkeley, Oakland, and San Jose. The Oakland station commenced operation in February 2014, the San Jose station commenced operation in March 2015, and the Berkeley station commenced operation in July 2016. The new monitoring data has not resulted in a need to change area attainment designations.[163]

SULFUR DIOXIDE

SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease.[164,165] SO_2 monitoring was terminated at the San Francisco station in 2009 because the state standard for SO_2 is being met in the bay area, and pollutant trends suggest that the air basin will continue to meet this standard for the foreseeable future.

In 2010, the U.S. EPA implemented a new one-hour SO_2 standard presented in Table 3.D-2, p. 3.D-4. The U.S. EPA has initially designated the air basin as an attainment area for SO_2. Similar to the new federal standard for NO_2, the U.S. EPA has established requirements for a new monitoring network to measure SO_2 concentrations.[166] No additional SO_2 monitors are required for the bay area because the air basin has never been designated as non-attainment for SO_2 and no State Implementation Plan or maintenance plans have been prepared for SO_2.[167]

LEAD

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which put children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the U.S. EPA strengthened the national

---

[162] California Air Resources Board, *State Implementation Plan Revision for Federal Nitrogen Dioxide Standard Infrastructure Requirements*, October 2012, http://www.arb.ca.gov/desig/no2isip.pdf, accessed September 29, 2022.
[163] Bay Area Air Quality Management District, *2013 Air Monitoring Network Plan*, July 2014, https://www.baaqmd.gov/about-air-quality/air-quality-measurement/ambient-air-monitoring-network, accessed September 16, 2022.
[164] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. B-2, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.
[165] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. C-16, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.
[166] United States Environmental Protection Agency (U.S. EPA), *Fact Sheet: Revisions to the Primary National Ambient Air Quality Standard, Monitoring Network, and Data Reporting Requirements for Sulfur Dioxide*, May 2016, https://www.epa.gov/sites/default/files/2016-05/documents/final_primary_naaqs_factsheet.pdf, accessed September 29, 2022.
[167] Bay Area Air Quality Management District, *2012 Air Monitoring Network Plan*, July 1, 2013, p. 30, https://www.baaqmd.gov/~/media/files/technical-services/2012_network_plan.pdf?la=en, accessed September 29, 2022.

ambient air quality standard for lead by lowering it from 1.5 µg/m^3 to 0.15 µg/m^3. The U.S. EPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas resulting in an increase in 76 monitors nationally.[168] Lead monitoring stations in the bay area are located at Palo Alto Airport, Reid-Hillview Airport (San Jose) and San Carlos Airport. Non-airport locations for lead monitoring are located in Redwood City and San Jose.

AIR QUALITY INDEX

The U.S. EPA developed the Air Quality Index scale to make the public health impacts of air pollution concentrations easily understandable. The AQI, much like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500. The numbers in the scale are divided into six color-coded ranges, with numbers 0–300 as outlined below:

- **Green (0–50)** indicates "good" air quality. No health impacts are expected when air quality is in the green range.
- **Yellow (51–100)** indicates air quality is "moderate." Unusually sensitive people should consider limited prolonged outdoor exertion.
- **Orange (101–150)** indicates air quality is "unhealthy for sensitive groups." Active children and adults, and people with respiratory disease, such as asthma, should limit outdoor exertion.
- **Red (151–200)** indicates air quality is "unhealthy." Active children and adults, and people with respiratory disease, such as asthma should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
- **Purple (201–300)** indicates air quality is "very unhealthy." Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit outdoor exertion.

The Air Quality Index numbers refer to specific amounts of pollution in the air and are based on the federal air quality standards for ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the AQI chart. If the concentration of any of these pollutants rises above its respective standard, it can be unhealthy for the public. In determining the air quality forecast, local air districts use the anticipated concentration measurements for each of the major pollutants, converts them into Air Quality Index numbers, and determines the highest Air Quality Index for each zone in a district.

Readings below 100 on the Air Quality Index scale would not typically affect the health of the general public (although readings in the moderate range of 50 to 100 may affect unusually sensitive people). Levels above 300 rarely occur in the United States, and readings above 200 have not occurred in the bay area in decades, with the exception of the October 2017 and November 2018 wildfires north of San Francisco and the August/September 2020 complex wildfires that occurred throughout the bay area.[169] Wildfires appear to be

[168] U.S. EPA, *Fact Sheet: Revisions to Lead Ambient Air Quality Monitoring Requirements*, March 2016, https://www.epa.gov/sites/default/files/2016-03/documents/leadmonitoring_finalrule_factsheet.pdf, accessed September 29, 2022.
[169] Bay Area Air Quality Management District, Current Air Quality, n.d., http://www.baaqmd.gov/about-air-quality/current-air-quality, accessed September 29, 2022.

occurring with increasing frequency in California and the bay area as the climate changes (since 2000, 17 of the state's 20 largest wildfires and 16 of the state's 20 most destructive fires on record have occurred).[170]

As a result, the Air Quality Index in several neighboring counties reached the "very unhealthy" and "hazardous" designations, ranging from values of 201 to above 350. During those periods, the air district issued "Spare the Air" alerts and recommended that individuals stay inside with windows closed and refrain from significant outdoor activity.

Air Quality Index statistics over recent years indicate that air quality in the bay area is predominantly in the "Good" or "Moderate" categories and healthy on most days for most people. Historical air district data in **Table 3.D-3** show that the air basin experienced air quality in the purple level (very unhealthy) on nine days, in the red level (unhealthy) on 35 days, and the orange level (unhealthy for sensitive groups) on 70 days, between 2017 and 2021. A number of these days are attributable to the increasing frequency of wildfires.

Table 3.D-3 Air Quality Index Statistics for the San Francisco Bay Area Air Basin

Air Quality Index Statistics for air basin	Number of Days by Year				
	2017	2018	2019	2020	2021
Unhealthy for Sensitive Groups (Orange)	9	8	10	34	9
Unhealthy (Red)	9	8	0	17	1
Very Unhealthy (Purple)	3	5	0	1	0

SOURCE: Air District 2022

TOXIC AIR CONTAMINANTS AND LOCAL HEALTH RISKS AND HAZARDS

In addition to criteria air pollutants, plans and individual projects may directly or indirectly emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but instead are regulated by the air district using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances to provide quantitative estimates of health risks.[171]

[170] CAL FIRE, Stats & Events, Top 20 Largest California Wildfires, April 28, 2021, https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf, accessed September 15, 2022; CAL FIRE, Stats & Events, Top 20 Most Destructive California Wildfires, April 28, 2021, https://www.fire.ca.gov/media/t1rdhizr/top20_destruction.pdf, accessed September 15, 2022.

[171] In general, a health risk assessment is required if the air district concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant of the project that would emit TACs is required to conduct a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

Exposure assessment guidance published by the air district in January 2016 adopts the assumption that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 30 years.[172] Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to $PM_{2.5}$ are strongly associated with mortality, respiratory diseases, and reductions in lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.[173] In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern. The air board identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.[174] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

In addition to monitoring criteria air pollutants, both the air district and the air board operate TAC monitoring networks in the air basin. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air and therefore tend to produce the most substantial risk. The nearest air district ambient TAC monitoring station to the Plan area is the station at 16th and Arkansas streets in San Francisco. **Table 3.D-4** shows ambient concentrations of carcinogenic TACs measured at the Arkansas Street station for the year 2019, which is the most recent year of available data, as well as the estimated cancer risks from a lifetime exposure (70 years) for these substances. When TAC measurements at this station are compared to ambient concentrations of various TACs for the bay area as a whole, the cancer risks associated with mean TAC concentrations in San Francisco are similar to those for the region.

ROADWAY-RELATED POLLUTANTS

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions contain diverse forms of particles and gases and also contribute to particulates by generating road dust and through tire wear. Epidemiologic studies have demonstrated that people living in proximity to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections and decreased pulmonary function and lung development in children. Air pollution monitoring conducted in conjunction with epidemiologic studies has confirmed that roadway-related health effects vary with modeled exposure to particulate matter and NO_2. In traffic-related studies, the additional non-cancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 300 feet.[175]

[172] Bay Area Air Quality Management District, *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016, http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en, accessed September 29, 2022.
[173] San Francisco Department of Public Works, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 6, 2008.
[174] California Air Resources Board, *Fact Sheet: The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-Fueled Engines*, October 1998.
[175] California ARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, http://www.arb.ca.gov/ch/handbook.pdf.

Table 3.D-4 Annual Average Ambient Concentrations of Carcinogenic Toxic Air Contaminants Measured at Air District Monitoring Station in 2019, 10 Arkansas Street, San Francisco

Substance	Concentration	Cancer Risk per Million
GASEOUS TACS	**(PPB)**	
Acetaldehyde	0.38	6
Benzene	0.111	29
1,3-Butadiene	0.024	26
Carbon Tetrachloride	0.069	53
Formaldehyde	1.29	27
Perchloroethylene	0.006	0.7
Methylene Chloride	0.078	0.8
Chloroform	0.017	1
Trichloroethylene	0.01	0.3
PARTICULATE TACS	**(NG/M^3)**	
Chromium (Hexavalent)	0.043	18
Total Risk for All TACs		***161.8***

SOURCE: California Air Resources Board, Ambient Air Toxics Summary, 2019, http://www.arb.ca.gov/adam/toxics/sitesubstance.html, accessed September 13, 2022

ABBREVIATIONS:

TACs = toxic air contaminants; ppb = part per billion; ng/m^3 = nanograms per cubic meter

DIESEL PARTICULATE MATTER

The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources, such as trucks and buses, are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The air board estimated average bay area cancer risk from exposure to diesel particulate, based on a population-weighted average ambient diesel particulate concentration, at about 480 in one million as of the year 2000, which is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. The statewide risk from DPM, as determined by the air board, declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, the air board estimated the average statewide cancer risk from DPM at 540 in 1 million.[176,177]

In 2000, the air board approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent air board regulations apply to new trucks and diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same

[176] California Air Resources Board, *California Almanac of Emissions and Air Quality*, 2009 Edition, Table 5-44 and Figure 5-12, https://www.arb.ca.gov/aqd/%E2%80%8Calmanac/almanac09/chap509.htm, accessed September 29, 2022.

[177] This calculated cancer risk value from ambient air exposure in the bay area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the American Cancer Society. (American Cancer Society, Lifetime Probability of Developing or Dying from Cancer, last revised July 13, 2009, https://www.cancer.org/cancer/cancer-basics/lifetime-probability-of-developing-or-dying-froM-Cancer.html, accessed September 29, 2022.

particulate exhaust emissions as one truck built in 1988.[178] The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel health risk in 2000. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California. Subsequent regulations regarding on-road diesel truck retrofits with particulate matter controls, 2010 or later engine standards, and fleet average emission rate standards to increase turnover have resulted in much lower DPM and $PM_{2.5}$ emissions. It is estimated that these regulations reduced diesel particulate emissions 78 percent from 1990 levels.[179]

Despite notable emission reductions, the air board recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. The air board notes that these recommendations are advisory and should not be interpreted as defined "buffer zones," and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, the air board's position is that infill development, mixed-use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.[180] Also see San Francisco Health Code article 38 discussed under Section 4.D.3, Regulatory Framework.

SENSITIVE RECEPTORS

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, population subgroups with higher rates of respiratory disease such as asthma and chronic obstructive pulmonary disease, and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases such as asthma and chronic obstructive pulmonary disease. The factors responsible for variation in exposure are also often similar to factors associated with greater susceptibility to air quality health effects. For example, lower income residents may be more likely to live in substandard housing and be more likely to live near industrial or roadway sources of air pollution.

The air district defines sensitive receptors as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals and residential areas.[181] Land uses such as schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Residential areas are considered more sensitive to air quality conditions compared to commercial and industrial areas because people generally spend longer periods of time at their residences, with associated greater exposure to ambient air quality conditions. Although workers are generally not considered sensitive receptors for several reasons including that all employers must follow regulations set

[178] Pollution Engineering, *New Clean Diesel Fuel Rules Start*, July 2, 2006, https://sj-admin.s3-us-west-2.amazonaws.com/2006_0700-PollutionEngineering_NewCleanDiesel.pdf, accessed September 29, 2022.
[179] Pollution Engineering, *New Clean Diesel Fuel Rules Start* (July 2, 2006), accessed March 14, 2022, https://sj-admin.s3-us-west-2.amazonaws.com/2006_0700-PollutionEngineering_NewCleanDiesel.pdf.
[180] California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005, http://www.arb.ca.gov/ch/handbook.pdf, accessed September 29, 2022.
[181] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. E-4, PDF page 224, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 4, 2022.

forth by the Occupational Safety and Health Administration to ensure the health and well-being of their employees,[182] workers near proposed project improvements (e.g., workers at Stonestown Galleria) are conservatively considered sensitive receptors in this analysis.

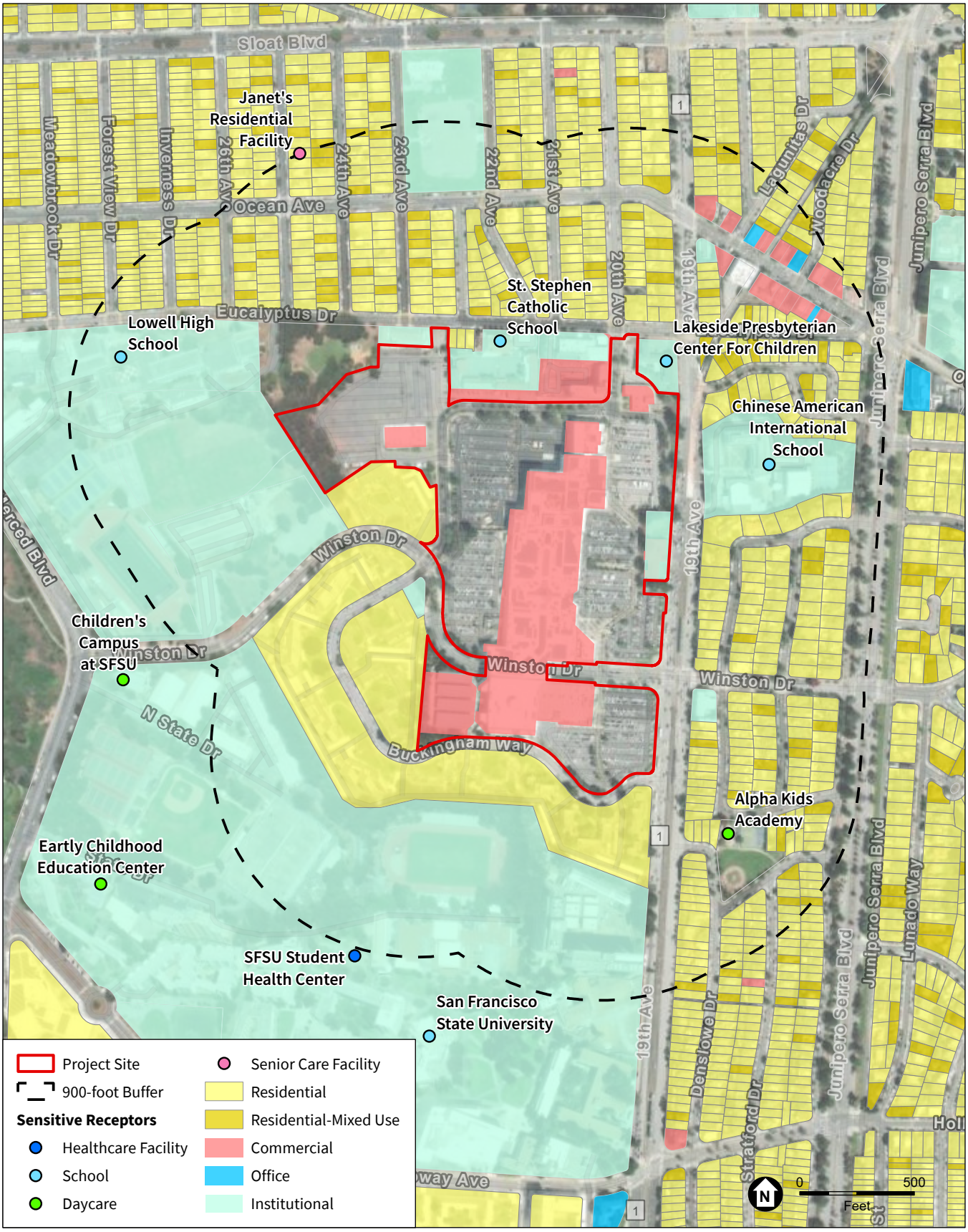
Sensitive receptors near the project site also include the Chinese American International School across 19th Avenue from the project site, the Lakeside Presbyterian Center for Children, at the northeast corner of the project site, and St. Stephen Catholic School, on the north side of the project site. In addition, residences are located directly north and east of the project site. Worker receptors were considered at the existing Stonestown Galleria at the 40-acre project area, the retail center just north of the Project site at the corner of Buckingham Way and 20th Avenue, and the library on the corner of 19th Avenue and Winston Drive. All other potential receptors were analyzed using residential exposure parameters.

SAN FRANCISCO MODELING OF AIR POLLUTANT EXPOSURE ZONES

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the air district to inventory and assess air pollution and exposure from mobile, stationary, and area sources within San Francisco. This analysis is known as the 2020 Citywide Health Risk Assessment (2020 Citywide HRA), and is documented in the *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*.[183] Areas with poor air quality, referred to as the Air Pollutant Exposure Zone (APEZ), were identified based on the following health-protective criteria: (1) excess cancer risk greater than 100 per one million population from the contribution of emissions from all modeled sources; or (2) cumulative annual average $PM_{2.5}$ concentrations greater than 10 µg/m^3. The APEZ is expanded in certain geographic health vulnerable[184] areas of the city, primarily the Bayview, Tenderloin, and much of the South of Market area, to be more protective, with the areas included in the APEZ based on a standard that is 10 percent more stringent than elsewhere in the city (i.e., areas where the excess cancer risk exceeds 90 in one million or the annual average $PM_{2.5}$ concentration exceeds 9 µg/m^3). The majority of the proposed project or variant does not meet the APEZ criteria, but a small portion of the project site that borders 19th Avenue does meet the APEZ criteria.

The APEZ also includes all parcels within 500 feet of a freeway. The APEZ is based on modeling that was prepared using a 20-meter by 20-meter receptor grid covering the entire city. The following summarizes the evidence supporting the APEZ criteria followed by a discussion of major sources of emissions within and near the project area. **Figure 3.D-1** also shows the location of the proposed project and the above sensitive receptors.

[182] Bay Area Air Quality Management District, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May 2011, p. 12.
[183] San Francisco Department of Public Health, San Francisco Planning Department, & Ramboll, *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*, September 2020, https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf, accessed September 29, 2022.
[184] Health vulnerable areas were identified as those bay area zip codes in the worst quintile of bay area Health Vulnerability Scores. San Francisco Department of Public Health and San Francisco Department of Planning, *San Francisco Citywide Health Risk Assessment: Technical Support Documentation*, February 2020, https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf, accessed September 29, 2022.



SOURCE: Maxar, 2021; San Francisco Planning Department, 2022; Google, 2022; ESA, 2022

Stonestown Development Project

FIGURE 3.D-1
SENSITIVE RECEPTORS

EXCESS CANCER RISK

The greater than 100 per one million persons exposed (100 excess cancer risk) criterion for defining the APEZ is based on the U.S. EPA's guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[185] As described by the air district, the U.S. EPA considers a cancer risk of 100 per 1 million to be within the "acceptable" range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants rulemaking,[186] the U.S. EPA states that it "… strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million; and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." The 100 per one million excess cancer risk is also consistent with the ambient cancer risk in the most pristine portions of the bay area based on the air district's regional modeling.[187]

FINE PARTICULATE MATTER

In April 2011, the U.S. EPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*. In this document, the U.S. EPA concludes that the then current federal annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$. In December 2012, the U.S. EPA strengthened the annual $PM_{2.5}$ standard from 15 to 12 $\mu g/m^3$ and issued final area designations based on that standard. The APEZ for San Francisco is based on the health protective annual average $PM_{2.5}$ standard of 11 $\mu g/m^3$, as supported by the U.S. EPA's particulate matter policy assessment, although lowered to 10 $\mu g/m^3$ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

AIR POLLUTION SOURCES

Air pollution sources evaluated in the 2020 Citywide HRA and contributing to emissions within and near the project area include primarily stationary source and vehicle emissions on local roadways. The air district's inventory of permitted stationary sources of emissions indicates that there are three, permitted generators within 1,000 feet of the proposed project area perimeter. Traffic on surrounding streets, primarily 19th Avenue and Eucalyptus Drive, also contribute to tailpipe emissions from gasoline-powered passenger vehicles and some diesel delivery trucks, in addition to entrained road dust ($PM_{2.5}$).

ODORS

Sources that typically generate odors include wastewater treatment and pumping facilities; landfills, transfer stations, and composting facilities; petroleum refineries, asphalt batch plants, chemical (including fiberglass) manufacturing, and metal smelters; painting and coating operations; rendering plants; coffee roasters and food processing facilities; and animal feed lots and dairies. The only odorous source in the general vicinity of the project site is the Oceanside Water Pollution Control Plant on the Great Highway

[185] Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.
[186] 54 *Federal Register* 38044, September 14, 1989.
[187] Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

approximately 1.5 miles west of the project site. Based on a site visit conducted on March 7, 2022, no odors were detected at the project site.

3.D.3 Regulatory Framework

FEDERAL REGULATIONS

The 1970 Clean Air Act (most recently amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weakened from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

The current attainment status for the air basin, with respect to federal standards, is summarized in Table 3.D-2, p. 3.D-4. In general, the air basin experiences low concentrations of most pollutants when compared to federal standards, except for PM_{10} and $PM_{2.5}$, and ozone, for which standards are exceeded periodically (see Table 3.D-1, p. 3.D-3).

In June 2004, the air basin was designated as a marginal nonattainment area for the national eight-hour ozone standard.[188] The U.S. EPA lowered the national eight-hour ozone standard from 0.80 to 0.75 parts per million (ppm) effective May 27, 2008. In April 2012, the U.S. EPA designated the bay area as a marginal nonattainment[189] region for the 0.75 ppm ozone standard established in 2008.[190] The air basin is in attainment for other criteria air pollutants, with the exception of the 24-hour standards for PM_{10} and $PM_{2.5}$, for which the bay area is designated as "Unclassified" and non-attainment, respectively. "Unclassified" is defined by the Clean Air Act as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant. The air basin is designated as an attainment area with respect to the federal annual average $PM_{2.5}$ standard.

STATE REGULATIONS

CALIFORNIA CLEAN AIR ACT

Although the federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological challenges in California, there are many differences between the state and

[188] U.S. EPA, Area Designations for 1997 Ground-Level Ozone Standards, Ozone & Health – A Timeline, https://archive.epa.gov/ozonedesignations/web/html/timeline.html, accessed September 29, 2022.
[189] "Marginal nonattainment area" refers to those areas where the fourth highest reading over any 24-hour period in the past 3 years exceeds the 8-hour national ambient air quality standard for ozone at concentrations of between 0.076 and 0.086 ppm.
[190] U.S. EPA, 2008 Ground-level Ozone Standards — Region 9 Final Designations, April 2012, https://archive.epa.gov/ozonedesignations/web/html/region9f.html, accessed September 29, 2022.

national ambient air quality standards, as shown in Table 3.D-2, p. 3.D-4. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code section 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in Table 3.D-2, p. 3.D-4, the air basin is designated as "nonattainment" for state ozone, PM_{10}, and $PM_{2.5}$ standards. The air basin is designated as "attainment" for other pollutants.

TOXIC AIR CONTAMINANTS

In 2005, the air board approved a regulatory measure to reduce emissions of toxic and criteria air pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than 5 consecutive minutes or periods aggregating more than 5 minutes in any one hour. Buses or vehicles also must turn off their engines upon stopping at a school and must not turn on their engines more than 30 seconds before beginning to depart from a school. Also, Senate Bill 352 was adopted in 2003 and limits locating public schools within 500 feet of a freeway or busy traffic corridor.

ON-ROAD DIESEL TRUCKS AND OFF-ROAD DIESEL EQUIPMENT

The air board has also adopted rules for new diesel trucks and for off-road diesel equipment. Along with rules adopted by the U.S. EPA, these regulations have resulted in substantially more stringent emissions standards for new diesel trucks and new off-road diesel equipment, such as construction vehicles. Effective January 2011, both the U.S. EPA and the air board adopted so-called Interim Tier 4 standards for new equipment with diesel engines of 175 hp or greater. The interim Tier 4 emissions standards for particulate matter are about 85 percent more restrictive than previous particulate matter emissions standards (Tier 2 or Tier 3, depending on the size of the engine[191]) for these larger off-road engines. As a result, use of engines that meet the interim Tier 4 standards would reduce diesel exhaust emissions of particulate matter by approximately 85 percent, compared to engines produced under the previous standards. Tier 4 Final standards are required for new off-road engines, depending on engine size, for all model years starting in 2014 or 2015. Compared to Tier 4 Interim standards, Tier 4 Final standards are about 80 percent more restrictive for NOx emissions and 30 percent more restrictive for particulate matter emissions. As a result, use of engines that meet the Tier 4 Final standards would reduce exhaust emissions of NOx by approximately 80 percent and reduce diesel exhaust emissions of particulate matter by approximately 30 percent compared to new engines produced under Tier 4 Interim standards.[192]

Tier 2 or Tier 3 engines (for larger equipment, those manufactured since 2006) can achieve generally the same reduction in particulate matter emissions through retrofitting by installing a diesel particulate filter (an air board-certified Level 3 Verified Diesel Emissions Control System). Beginning in 2014, air board regulations require off-road equipment fleets to begin gradual replacement of older engines with newer, cleaner engines, the installation of exhaust filters on remaining older engines, or some combination of the two to achieve fleet-wide emissions reductions. Because only a certain percentage of each fleet's engines must be

[191] For most construction equipment other than that with extremely powerful engines (greater than 750 hp), Tier 2 and Tier 3 emissions standards are the same with respect to particulate matter. Therefore, cancer risk from DPM—a subset of all particulate matter—is essentially the same for Tier 2 and Tier 3 engines.
[192] California Air Resources Board, *Non-road Diesel Engine Certification Tier Chart*, https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart, accessed September 29, 2022.

replaced or retrofitted on an annual or periodic basis to achieve the required emissions reductions, and because fleet turnover of heavy-duty off-road equipment takes many years, the full effect of the regulations on emissions reduction is not anticipated to be realized until sometime between 2020 and 2030, depending on the engine size and pollutant.[193]

Regarding equipment already in use, the air board adopted rules for in-use off-road diesel vehicles—including construction equipment—in 2007. Those rules also limit idling to 5 minutes, require a written idling policy for larger vehicle fleets, and require that fleet operators provide information on their engines to the air board and label vehicles with an air board-issued vehicle identification number. The off-road rules require the retrofit or replacement of diesel engines in existing equipment. This "repowering" was originally to be required beginning in 2010 (for the largest fleets). However, in 2010, the air board delayed the start of repowering to 2014 for large fleets, 2017 for medium-size fleets, and 2019 for small fleets.[194] The air board stated that the delayed implementation was justified because the 2007 to 2009 recession had dramatically reduced emissions, and because the board staff found that the data on which the original rule was based had overestimated emissions. According to the air board, under the revised rules, DPM emissions from off-road equipment will decrease by more than 40 percent from 2010 levels by the year 2020, and by 2030, they will decrease by more than 75 percent.[195]

TRANSPORT REFRIGERATION UNITS

The air resources board is developing requirements to transition diesel-powered transport refrigeration units (TRUs) to zero-emission technology in two phases. Part 1 consists of amendments to the TRU air toxic control measure, which the Board approved at its February 2022 meeting. The amendments include requirements for the transition of diesel-powered truck TRUs (TRUs mounted on the truck itself) to zero- emission, a particulate matter emission standard for newly- -manufactured non-truck TRUs (TRUs on a trailer, shipping container, or railcar), lower global warming potential refrigerant requirements, facility registration and reporting, expanded TRU reporting and labeling, and fees. Staff are assessing zero -emission options for non-truck TRUs and plan to take a second rulemaking (Part 2) to the Board for consideration in 2025.[196]

2022 BUILDING ENERGY EFFICIENCY STANDARDS (TITLE 24, PART 6)

The California 2022 Building Energy Efficiency Standards (Title 24, Part 6) encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 energy code. The 2022 standards require that all nonresidential, hotel/motel occupancies, single-family residential buildings, and multifamily

[193] California Air Resources Board, *2017 Off-Road Diesel Emission Factor Update for NOX and PM*, https://ww3.arb.ca.gov/msei/ordiesel/ordas_ef_fcf_2017.pdf, accessed September 29, 2022.
[194] Fleet size is based on total horsepower: large fleets are those with more than 5,000 hp, medium fleets have 2,501 to 5,000 hp, and small fleets are those with less than 2,500 hp.
[195] California Air Resources Board, "Staff Report: Initial Statement of Reasons for Proposed Rulemaking: Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements," October 2010, p. 44, http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadisor.pdf, accessed September 29, 2022.
[196] California Air Resources Board, New Transport Refrigeration Unit Regulation in Development, https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit/new-transport-refrigeration-unit-regulation, accessed September 29, 2022.

buildings include mechanical air filtration systems with filters that have a designated efficiency equal to or greater than Minimum Efficiency Reporting Value (MERV) 13.[197,198]

REGIONAL AND LOCAL REGULATIONS

BAY AREA AIR QUALITY PLANNING

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard).

The air district's *2017 Clean Air Plan: Spare the Air, Cool the Climate* was adopted on April 19, 2017 by the air district in cooperation with the Metropolitan Transportation Commission, the San Francisco Bay Conservation and Development Commission, and the Association of Bay Area Governments to provide a regional strategy to improve bay area air quality and meet public health goals.[199] The control strategy described in the 2017 Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce greenhouse gas (GHG) emissions to protect the climate.

The 2017 Clean Air Plan addresses four categories of pollutants: ground-level ozone and its key precursors, ROG and NOx; PM, primarily $PM_{2.5}$, and precursors to secondary $PM_{2.5}$; air toxics; and GHG emissions. The control measures are categorized based on the economic sector framework including stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water measures.

The air district is the regional agency with jurisdiction over the nine-county region located in the air basin. The Association of Bay Area Governments, the Metropolitan Transportation Commission, county transportation agencies, cities and counties, and various non-governmental organizations also participate in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs. The air district is responsible for attaining and/or maintaining air quality in the region within federal and state air quality standards. Specifically, the air district has the responsibility to monitor ambient air pollutant levels throughout the region and to develop and implement strategies to attain the applicable federal and state standards. The air district has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, and can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The air district also regulates new or expanding stationary sources of TACs and requires air toxic control measures for many sources emitting TACs.

[197] Subchapter 3, section 120.1 for nonresidential and hotel/motel occupancies; subchapter 7, section 150.0 for single-family residential buildings; and subchapter 10 section 160.2 for multifamily buildings.
[198] The 2022 Energy Code requires MERV 13 filters when tested in accordance with American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 52.2, or a particle size efficiency rating equal to or greater than 50 percent in the 0.30–1.0 µm range, and equal to or greater than 85 percent in the 1.0–3.0 µm range when tested in accordance with Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 680.
[199] Bay Area Air Quality Management District, *2017 Clean Air Plan: Spare the Air, Cool the Climate*, April 19, 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed September 29, 2022.

AIR DISTRICT RULES

The air district rules that would be most applicable to the proposed project and variant pertain mostly to permits for emergency generators and include Rules 2-1, 2-2, and 2-5. The air district regulates stationary-source emissions of TACs through Rule 2-1 (General Permit Requirements), Rule 2-2 (New Source Review), and Rule 2-5 (New Source Review of Toxic Air Contaminants). Under these rules, all stationary sources that have the potential to emit TACs above a certain level are required to obtain permits from the air district. These rules provide guidance for the review of new and modified stationary sources of TAC emissions, including evaluation of health risks and potential measures to reduce TAC emissions and/or exposure to TAC emissions.

Sources must apply Best Available Control Technology (BACT) to reduce emissions, and the air district recently updated its BACT requirement for emergency generators greater than 1,000 horsepower (hp) to achieve EPA Tier 4 standards.[200]

LOCAL REGULATIONS

SAN FRANCISCO CONSTRUCTION DUST CONTROL ORDINANCE

Health code article 22B and San Francisco Building Code section 106.A.3.2.6 collectively constitute the Construction Dust Control Ordinance (adopted in July 2008). The ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures. For projects over one-half acre and within 1,000 feet of sensitive receptor(s) (e.g., residences and group living quarters, schools, child care centers, and hospitals and other health-care facilities), such as the proposed project or variant, and other projects as deemed necessary by the Director of the San Francisco Department of Public Health (health department), the Construction Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan, with a goal of minimizing visible dust, for approval by the health department prior to issuance of a building permit. Such larger projects must also identify a compliance monitor and that person must be available at all times during construction activities.

Dust suppression activities may include watering of all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by the San Francisco Public Works Code article 21, section 1100 et seq.

Pursuant to health code article 22B, section 1247, all departments, boards, commissions, and City agencies that authorize construction or improvements on land under their jurisdiction under circumstances where no building, excavation, grading, foundation or other permits are required to be obtained under the building code shall adopt rules and regulations to ensure that the same dust control requirements that are set forth in this article are followed.

[200] Bay Area Air Quality Management District, BACT for Emergency Backup Engines greater than or equal to 1,000 brake-horsepower, 2021, https://www.baaqmd.gov/permits/apply-for-a-permit/engine-permits, accessed September 15, 2022.

HEALTH CODE ARTICLE 38

San Francisco adopted health code article 38 in 2008, and amended it in 2014, to protect new sensitive uses from existing sources of air pollution by requiring enhanced ventilation and filtration systems in certain areas of the city. The 2014 amendments make the health code and building code consistent with the results of the air quality modeling undertaken to identify the City's APEZ. As revised in 2014, article 38 applies to all development that includes "sensitive uses," as defined in the health code, including all residential units; adult, child and infant care centers; schools; and nursing homes. The revised article 38 considers all existing known sources of TACs and $PM_{2.5}$, and requires "enhanced ventilation," including filtration of outdoor air, for all such projects located in the APEZ. The filtration requirement of article 38 specifies MERV 13 or equivalent, based on American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 52.2, and requires the health department to confer with other City departments and report to the San Francisco Board of Supervisors concerning technologies it has identified or evaluated that may comply with the requirements of the health code. Article 38 also requires periodic updating of the APEZ map (about every 5 years) to account for changes in sources of TACs and $PM_{2.5}$ emissions or updated health risk quantification methodologies. The 2020 Citywide HRA was used to prepare the most recent 2020 APEZ map update; article 38 applies within the APEZ.

The majority of the project site does not meet the APEZ criteria, but a small portion of the project site that borders 19th Avenue does meet the APEZ criteria. However, as discussed above, the 2022 building code standards require that permit applications submitted after January 1, 2023, for all nonresidential, hotel/motel occupancies, single-family residential buildings, and multifamily buildings include mechanical air filtration systems with filters that also have a designated efficiency equal to or greater than MERV 13.

SAN FRANCISCO GENERAL PLAN AIR QUALITY ELEMENT

The San Francisco General Plan (general plan) Air Quality Element includes the following objectives:

- **Objective 1:** Adhere to state and federal air quality standards and regional programs.
- **Objective 2:** Reduce mobile sources of air pollution through implementation of the Transportation Element of the General Plan.
- **Objective 3:** Decrease the air quality impacts of development by coordination of land use and transportation decisions.
- **Objective 4:** Improve air quality by increasing public awareness regarding the negative health effects of pollutants generated by stationary and mobile sources.
- **Objective 5:** Minimize particulate matter emissions from road and construction sites.
- **Objective 6:** Link the positive effects of energy conservation and waste management to emission reductions.

CITY OF SAN FRANCISCO GREEN BUILDING CODE

San Francisco adopted a green building code in 2008; in 2010, it adopted the California Green Building Standards (CALGreen) code but with modifications. The current code is the 2019 San Francisco Green Building Code, which combines all mandatory elements from the 2019 CALGreen regulations as well as stricter local requirements. Applicants who apply for a building permit between January 1, 2020, and December 31, 2022, must conform to the 2019 green building code. Applicants who apply for a permit after

December 31, 2022, will be subject to the next iteration of the green building code (which would be either the 2022 CALGreen Code or the 2022 City code, whichever is more stringent).

The 2022 green building code requires building permit submittals to show that they meet the compliance margin required by the applicable rating system and the California Building Energy Efficiency Standards in effect at the time of permit submittal. California Building Energy Efficiency Standards documentation must be prepared using software from the California Energy Commission's list of Approved Computer Programs for the Building Energy Efficiency Standards. Buildings that meet a LEED standard for Building Design and Construction or LEED standard for Core and Shell must prepare and submit all standard documentation required by the California Energy Commission to demonstrate compliance with the California Building Energy Efficiency Standards (title 24, part 6) in effect on the date of permit application.

Effective January 1, 2017, San Francisco became the first U.S. city to mandate solar and living roofs on most new construction through the Better Roofs Ordinance. The ordinance requires that 15 percent of the roof space on most new construction is solar, 30 percent of the roof space is a living roof (i.e., green or vegetated roof), or installing a combination of both solar and living roof. The Better Roofs ordinance applies to all projects proposing new construction that meet all of the following requirements: (1) nonresidential with a gross floor area of 2,000 square feet or more or residential of any size; (2) have 10 or fewer occupied floors; and (3) apply for a site permit or building permit on or after January 1, 2017. Building code section 106A.1.17.1, also known as the All-Electric New Construction Ordinance, requires applications for all permits submitted after June 1, 2021, to construct new buildings to be designed and constructed such that all space conditioning, water heating, cooking, and clothes drying systems are all-electric, and the installation of infrastructure, piping systems, or piping related to the distribution of natural gas or propane to such uses is prohibited. The ordinance allows limited installation of gas piping systems for commercial food preparation, and in isolated cases, if building all-electric is determined to be physically or technically infeasible after all other options are exhausted.

REGULATION OF ODORS

The air district's regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. The regulation limits the "discharge of any odorous substance which causes the ambient air at or beyond the property line … to be odorous and to remain odorous after dilution with four parts of odor-free air." The air district must receive odor complaints from 10 or more complainants within a 90-day period in order for the limitations of this regulation to go into effect. If this criterion has been met, an odor violation can be issued by the air district if a test panel of people can detect an odor in samples collected periodically from the source.

3.D.4 Impacts and Mitigation Measures

This section analyzes potential air quality impacts from the proposed project and variant. It describes the methods used to determine the impacts and the thresholds that were used to conclude whether an impact would be significant. Mitigation measures are identified as necessary to reduce or avoid significant impacts.

SIGNIFICANCE CRITERIA

Implementation of the proposed project or variant would have a significant impact related to air quality if it would:

- Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people; or
- Conflict with or obstruct implementation of the applicable air quality plan.

APPROACH TO ANALYSIS

The study area for regional air quality impacts is the San Francisco Bay Area air basin (air basin). The study area for localized air quality impacts is within the area in the vicinity of the Stonestown Galleria shopping mall.

The incremental increase in criteria pollutant and TAC emissions associated with construction and operation of the proposed project or variant is based on the net increase in these emissions from buildout of the proposed project or variant minus the operational emissions of these pollutants under existing conditions.[201]

The purpose of the air quality analysis is to assess potential criteria pollutant emissions and health risks and hazards that would result from the construction and operation of the proposed project or variant consistent with guidelines and methods from air quality agencies, specifically, the planning department, air district, air resources board, OEHHA, and U.S. EPA.

Consistent with the requirements of the planning department, which draw on the guidelines and recommended methods from these agencies, the health risk assessment evaluates the estimated incremental increase in cancer risk from diesel particulate matter (DPM), the chronic hazard index, and the annual average $PM_{2.5}$ concentrations.

The regional criteria air pollutant analysis estimated construction and long-term operational emissions that would be generated by the proposed project or variant. The construction and operational emission sources analyzed in the health risk assessment include diesel-powered construction equipment, on-road haul trucks, fugitive construction dust, proposed project-related traffic including diesel trucks and passenger vehicles, and emergency backup diesel generators. In addition, existing plus project cancer risk and annual average $PM_{2.5}$ concentrations at on- and off-site receptors are presented, using information from the Citywide HRA.

The thresholds of significance used as the basis for determining air quality impacts under the California Environmental Quality Act (CEQA) are discussed below and are based on substantial evidence identified in Appendix D of the 2017 air district's CEQA Air Quality Guidelines and its 2009 Justification Report.

[201] See Appendix F for methods used to evaluate emissions for existing conditions.

REGIONAL CRITERIA AIR POLLUTANTS

As described under Section 3.D.3, Regulatory Framework, p. 3.D-16, the air basin experiences low concentrations of most pollutants when compared to federal or state standards and is designated as either in attainment or unclassified for most criteria air pollutants, with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which the air basin is designated as non-attainment for either the state or federal standards. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NOx). For this reason, the air district has identified criteria air pollutant significance thresholds for ROG, NOx, $PM_{2.5}$, and PM_{10}.

By definition, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in nonattainment of air quality standards. Instead, a project's individual emissions are considered to contribute to the existing, cumulative air quality conditions. If a project's contribution to cumulative air quality conditions is considerable, then the project's impact on air quality would be considered significant.[202]

Table 3.D-5 identifies criteria air pollutant significance thresholds adopted by the air district followed by a discussion of the proposed project and variant's sources of criteria air pollutants and analysis methods. Projects with criteria air pollutant emissions below these significance thresholds would not result in a cumulatively considerable net increase in non-attainment criteria air pollutants within the air basin, the first bulleted significance criterion identified in Significance Criteria, p. 3.D-23. This analysis is presented in Impact AQ-1 and AQ-2.

Table 3.D-5 Criteria Air Pollutant Significance Thresholds

	Construction Thresholds	Operational Thresholds	
Pollutant	**Average Daily Emissions (lb/day)**	**Average Daily Emissions (lb/day)**	**Maximum Annual (tons/year)**
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Construction Dust Ordinance or other best management practices	Not Applicable	

SOURCE: Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.

ABBREVIATIONS:

lb/day = pounds per day; ROG = reactive organic gases; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter

As explained by the air district in its 2009 report justifying the above criteria air pollutant significance thresholds, the thresholds for the ozone precursors ROG and NOx are tied to the air district's offset requirements for ozone precursors, based on the fact that the bay area is not in attainment with the federal

[202] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.

ozone standard. Therefore, such an approach is appropriate "to prevent further deterioration of ambient air quality and thus has nexus and proportionality to prevention of a regionally cumulative significant impact (e.g., worsened status of nonattainment)."[203] As discussed on page 3.D-2, the ambient air quality standards have been established by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Therefore, attainment can be considered protective of public health, thereby providing a strong link between a mass emission threshold and avoidance of health effects. For PM_{10} and $PM_{2.5}$, the air district established significance thresholds based on the federal New Source Review program for new stationary sources of pollution, which contains stricter thresholds than the air district's offset program for these pollutants. "These thresholds represent the emission levels above which a project's individual emissions would result in a considerable adverse contribution to the [San Francisco Bay Area Air Basin's] existing air quality conditions." As with ROG and NOx, these thresholds likewise provide a connection between a mass emission threshold and avoidance of health effects. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Fugitive dust emissions from land use development projects are primarily associated with construction activities. Studies have shown that the application of best management practices at construction sites can significantly control fugitive dust,[204] and individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[205] San Francisco's Construction Dust Control Ordinance requires a number of fugitive dust control measures to ensure that construction projects do not result in visible dust. The project would be subject to the requirements of the Construction Dust Control Ordinance, which is the basis for determining the significance of criteria air pollutant and ozone precursor impacts from fugitive dust emissions associated with construction activities. Impact AQ-1 analyzes construction related fugitive dust emissions. Fugitive dust emissions associated with operational activities are also assessed in Impact AQ-2 and included in the total PM emissions compared against the significance thresholds presented in Table 3.D-5. Impact AQ-3 also includes construction and operational fugitive dust in the health risk, $PM_{2.5}$ analysis.

OTHER CRITERIA AIR POLLUTANTS

Regional concentrations of CO and SO_2 in the air basin have not exceeded the state standards for over two decades. As discussed previously, the air basin is in attainment for both CO and SO_2. The air district has demonstrated, based on modeling, that to exceed the California ambient air quality standard of 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic, in addition to existing traffic, would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Projects that do not result in 44,000 vehicles per hour in combination with background traffic (or 24,000 vehicles per hour where applicable), would not have the potential to result in a significant CO impact.

The transportation analysis indicates that the proposed project would generate 1,524 new vehicle trips during the weekday p.m. peak hour.[206] Peak hour traffic volume at the roadway segment with the greatest traffic volumes (along Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard) is 325 vehicles per hour. The traffic increases associated with the variant would be 352 vehicles per hour. If all of the proposed

[203] Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, pp. D-47.
[204] Western Regional Air Partnership, *WRAP Fugitive Dust Handbook*, September 7, 2006, https://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf.
[205] Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 27.
[206] Kittelson & Associates, *Stonestown Volume Spreadsheets for Noise,* July 19, 2022.

project vehicle trips travelled along Eucalyptus Drive, which is not a likely scenario, the existing plus project or variant traffic volumes at nearby intersections would be well below the screening criterion of 44,000 vehicles per hour and the more restrictive screening criterion of 24,000 vehicles per hour. Given the air basin's attainment status and the limited CO and SO_2 emissions that could result from the proposed project or variant, the proposed project or variant would not result in a cumulatively considerable net increase in CO or SO_2, and a quantitative analysis is not required.

EXISTING CONDITIONS

For purposes of the air quality analysis for the proposed project or variant, the baseline from which to determine net new criteria pollutant emissions are those land uses that currently exist but would be demolished and replaced with the proposed project's land uses. This includes 1,659,000 square feet of underground parking and surface parking lots and 59,300 square feet of existing development.

Operational emissions from existing conditions include criteria air pollutant and precursor emissions, including ROG, NO_X, PM_{10}, and $PM_{2.5}$ from a variety of emissions sources, including architectural coating, consumer products, energy use (direct emissions from natural gas), exhaust from on-road vehicles (mobile emissions), and area sources such as landscaping equipment. Any existing emergency generator that would be removed as a result of the proposed project or variant would be replaced with a similar generator. Therefore, emissions from existing emergency generators were not considered.

Mass average daily and annual area source emissions for existing conditions were estimated using methods consistent with the CalEEMod (version 2022.1) emissions model. CalEEMod was developed in collaboration with California's air districts and is recommended by the air district for evaluating projects' criteria pollutant emissions.[207] Emission calculation methods for existing conditions are consistent with those used for proposed project or variant operations as discussed below. Mobile source emissions were calculated using vehicle trips identified in the transportation analysis conducted for the proposed project or variant[208] and emission factors from CARB's Emission FACtors (EMFAC) model, version 2021 (EMFAC2021). Emissions for all other sources were based on activity data supplied by the Project sponsor and CalEEMod default values where needed. See Appendix F for a detailed explanation of all assumptions and methods used to calculate emissions for existing conditions.

CONSTRUCTION ACTIVITIES AND EMISSIONS

Construction of the proposed project or variant has the potential to create air quality impacts from the use of heavy-duty off-road construction equipment, construction workers' vehicle trips, and vendor truck trips. Construction criteria air pollutant and TAC emissions were estimated using methods consistent with CalEEMod version 2022.1 or equivalent methods as described below. Demolition, hauling, and ground-disturbing activities also result in fugitive dust emissions.

A detailed explanation of all assumptions and methods used to calculate construction criteria pollutant and TAC emissions is included in Appendix F.

[207] Bay Area Air Quality Management District, *Tools and Methodologies*, 2012, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools, accessed September 29, 2022.
[208] Kittelson & Associates, *Travel Demand Technical Memorandum*, December 8, 2022.

Off-Road Equipment

Construction of the proposed project or variant would emit criteria air pollutant emissions from demolition of parking lots, a parking garage, and some existing development; grading of surfaces where parking and structures were removed; construction of new buildings; architectural coating of interior and exterior surfaces; and paving. These activities involve the use of on-site construction equipment, construction workers' vehicle trips, hauling truck trips, and vendor truck trips. Architectural coating activities and paving would also emit mainly ROG (an ozone precursor). The assessment of construction criteria air pollutant impacts considers each of these potential sources. Construction criteria air pollutant and TAC emissions were based on project-specific data provided by the project sponsor, including a construction equipment list, a construction schedule, and site map.

For diesel-powered off-road construction equipment, CalEEMod and methods consistent with CalEEMod were used to estimate emissions. Emissions were calculated assuming fleet average equipment, meaning the emission factors used reflect the fleet predicted to be in use in the OFFROAD2017-ORION v1.0.1 model, which is the model used by CalEEMod for offroad equipment emission factors.

On-Road Mobile Sources

Diesel-fueled construction equipment, delivery trucks bringing construction materials to the project site, dump trucks, and concrete trucks emit NOx, ROG, PM_{10}, and $PM_{2.5}$, in addition to other criteria pollutants. Emissions would vary in location and schedule depending on which of the six phases is undergoing construction. On-road mobile sources include vehicle trips associated with construction workers, vendors, and concrete trucks. To quantify on-road construction criteria air pollutant and TAC emissions, emission factors for on-road mobile sources were obtained from the air district EMFAC2021 on-road emissions model because CalEEMod version 2022.1 incorporates an older version of EMFAC. EMFAC2021 incorporates the Pavley Clean Car Standards and the Advanced Clean Cars program. EMFAC2021 includes the following vehicle classes that were used in the modeling: light-duty auto (LDA), light-duty truck 1 (LDT1), light-duty truck 2 (LDT2), medium-duty vehicle (MDV), light heavy-duty truck (LHDT), medium heavy-duty truck (MHDT), and heavy heavy-duty truck (HHDT).

Consistent with CalEEMod methods, it was assumed that worker trips are 50 percent light-duty auto, 25 percent light-duty truck 1 and 25 percent light-duty truck 2 vehicle classes. Vendor trips are assumed to be medium-heavy duty trucks and hauling trips are assumed to be heavy-heavy duty trucks.

PM emissions can occur from resuspended road dust that is entrained by vehicular travel on paved roads. These PM emissions were included in the total construction emissions from the proposed project and variant. The calculation of the entrained roadway dust emission factor and the calculation of emissions from entrained roadway dust for the proposed project and variant are shown in Appendix F. The trip lengths used in the calculation of entrained road dust emissions are equivalent to CalEEMod default trip lengths.

Fugitive Construction Dust

PM emissions can also occur from construction activities, including demolition, hauling, and ground-disturbing activities also. These PM emissions were included in the health risk $PM_{2.5}$ concentration analysis. The analysis accounts for compliance with San Francisco's Construction Dust Control Ordinance, discussed above. The calculation of construction dust emissions from the proposed project and variant are shown in Appendix F.

Architectural Coatings and Paving

Architectural coating and paving are the predominant source of ROG emissions during construction; these emissions arise from the volatile organic compound (VOC) content of the coatings and off-gassing of VOC during paving. Emissions from architectural coatings were based on CalEEMod default values of architectural coatings per square footage, default VOC content, which is 100 grams per liter of coating for indoors and 150 grams per liter for outdoors, and using the total building square footage provided by the project sponsor. Emissions from architectural coating would be compliant with air district paint VOC regulations. Paving emissions were also based on the CalEEMod default emission rate, which is 2.62 pounds per acre paved, and using the square footage of roadway and parking lots that need to be paved, provided by the project sponsor.

OPERATIONAL ACTIVITIES AND EMISSIONS

The operational emissions analysis assumed that 27 acres of the existing surface parking lots and 1,387,367 square feet of the existing development on the site would be demolished and replaced with new construction, while the majority of the existing shopping mall would remain. Thus, the analysis calculated net new emissions from the proposed project or variant, which would be the difference between the emissions from the proposed land uses and the emissions from the existing sources that will be removed. Sources of operational emissions from the proposed project or variant and existing conditions include emergency diesel generators, on-road vehicles, energy use, and area sources. Based on information from the project sponsor, the first phase of the project is anticipated to become operational in 2028 and full buildout is anticipated to occur in 2032. Therefore, full buildout operational emissions are based on 2032 emission factors.

It was conservatively assumed that the proposed project or variant would require construction for a period of approximately eight years, which is the fastest potential period over which the proposed project or variant could be constructed. If construction occurs over a longer timeframe, actual average daily or maximum annual emissions could be less than those estimated in this analysis.[209] This buildout schedule results in some portions of the project fully constructed and occupied while remaining portions of the project continue to be under construction. Therefore, it is necessary to evaluate the impacts of overlapping construction and operational emissions that occur in any given year, termed interim years. For interim years for the analysis of combined construction and operational impacts, 2028 emission factors were used to be conservative. Operational emissions occurring beyond years 2032 would likely be lower due to reductions in vehicle emissions due to vehicle turnover and increasingly stringent regulatory requirements.

A detailed explanation of all assumptions and methods used to calculate operational criteria pollutant and TAC emissions is included in Appendix F.

Operational On-Road Mobile Sources

On-road mobile sources include vehicle trips associated with residents, retail customers, employees, and vendor deliveries. Vehicles on the roadway emit TACs in their exhaust and criteria air pollutants through exhaust, resuspended road dust, tire wear, and brake wear. In addition, gasoline vehicles emit criteria air

[209] The phasing of project implementation would be subject to changes due to market conditions and other unanticipated factors. If construction is delayed or occurs over a longer period, emissions could be reduced because of (1) newer and cleaner-burning construction equipment fleet mix and (2) a less intensive and overlapping buildout schedule (i.e., fewer daily emissions occurring over a longer period). Conversely, if construction is accelerated and occurs over a shorter period, average daily and total annual emissions could increase. However, it is assumed that the construction schedule represents an accelerated phasing schedule for the project for the purposes of conservatively assessing impacts, and that construction would not occur at a more rapid pace than is analyzed.

pollutants and TACs through fuel evaporation. Operational vehicle emissions for the proposed project were estimated based on trip rates (weekday and weekend), truck trip estimates, and trip distances from the transportation analysis. Mobile source emissions from the existing site were calculated based on information provided in the transportation analysis.

The EMFAC2021 default fleet mix for San Francisco County was used for operational trips. The latest on-road emissions model (EMFAC2021) was used in this assessment. Emission factors for year 2032 were used for operation of the proposed project or variant at full build out and for year 2028 for interim years.

Emergency Generators

Operational emissions for the 12 emergency generators included as part of the proposed project or variant were calculated assuming a maximum of 50 hours per year of non-emergency testing operation, consistent with the Airborne Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR section 93115).[210] For generators over 1,000 hp, criteria pollutant and TAC emissions were calculated assuming the engine complies with air district's BACT limits, which require all generators 1,000 hp or greater to be Tier 4-compliant; for generators less than 1,000 hp, criteria pollutant and TAC emissions were calculated assuming the engines are Tier 2-compliant.[211] Emissions were based on the anticipated generator number and size, provided by the project sponsor, which is three 470-horsepower generators, six 670-horsepower generators, and three 1,005-horsepower generators.

Existing buildings in the Phase 2 area have existing generators (i.e., two generators with 100 hp and one generator with 536 hp) that are currently operational. However, these generators would either remain or would be replaced with similar generators. Therefore, the emissions of these generators were not considered.

Architectural Coatings

Operational architectural coatings account for the reapplication of paint and coatings on interior and exterior surfaces, which would result in ROG emissions. Architectural coating emissions were estimated using CalEEMod methods and were based on the total building square footage of the proposed project or variant. Consistent with CalEEMod, existing emissions of re-application of architectural coating were also calculated based on the square footage being removed.

Consumer Products

Consumer product use would be the predominant source of ROG emissions during project operation. Consumer product emissions come from various non-industrial solvents, including cleaning supplies, kitchen aerosols, cosmetics and toiletries, which emit VOCs during their use. Emissions from consumer products were calculated using the total building square footage of the proposed project and variant. The emission factor was updated from the CalEEMod default to reflect a San Francisco-specific ROG emission

[210] California Air Resources Board, *Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines*, 2011, https://ww3.arb.ca.gov/diesel/documents/finalreg2011.pdf, accessed September 29, 2022.
[211] Bay Area Air Quality Management District, BACT/TBACT Workbook, 2021, https://www.baaqmd.gov/permits/permitting-manuals/bact-tbact-workbook, accessed August 26, 2022.

factor developed by the planning department in coordination with the air district (1.46x10-5 pounds of ROG per square foot per day).[212,213,214]

Energy Use

Criteria pollutant emissions are generated from energy use associated with buildings. Electricity and natural gas use are the most common energy types for mixed use projects. The proposed buildings would be all-electric and there are no direct emissions of criteria air pollutants associated with on-site electricity use. Therefore, emissions from proposed project or variant energy use would be zero.

Emissions from natural gas combustion in existing buildings were calculated using CalEEMod default energy consumption profiles for the appropriate land use. Emissions from the removal of buildings that use natural gas were deducted from the total increase in proposed project and variant emissions to obtain a net increase.

Landscaping Equipment

Emissions from landscaping equipment for the proposed project, variant, and existing conditions were calculated using CalEEMod and based on information regarding building square footage and acreage, as well as CalEEMod defaults. As a conservative measure, the recent law (Assembly Bill 1346) banning the sale of gasoline-powered landscaping equipment by 2024 was not accounted for, since it is unknown how the law will affect emissions due to non-electric equipment already in operation.

COMBINED CONSTRUCTION AND OPERATIONAL EMISSIONS

The proposed project or variant is estimated to be constructed over a period of eight years in six phases. In years when construction is scheduled to coincide with proposed project or variant operation, construction emissions are combined with operational emissions. This is expected to begin during Phase 1 operation and construction of Phases 2, 3, 4, and 5, and would continue for the duration of construction activities through 2032. The combined construction and operational emissions are compared with average daily emissions thresholds, using 260 days per year for construction (even though there may be some weekend work) and 365 days per year for operations. Operational emissions during interim years where construction overlaps with operation were calculated by scaling full buildout emissions using 2028 emission factors by the fraction of each land use that would be operating in a specific year. Using an emission factor for a constant year for the entire overlap of construction and operation is conservative because emissions tend to decrease with time as emission sources become cleaner.

LOCAL HEALTH RISKS AND HAZARDS

In addition to criteria air pollutants, the proposed project or variant would emit TACs. A health risk assessment was conducted to estimate health risks from exposure to TACs emitted by construction and operation of the proposed project or variant (see Appendix F).

---

[212] California Air Resources Board, Almanac Emission Projection Data, 2017, https://ww2.arb.ca.gov/applicabons/emissions-county, accessed September 28, 2022.
[213] City and County of San Francisco, *Land Use Data*, 2021, https://data.sfgov.org/Housing-and-Buildings/Land-Use/us3s-fp9q, accessed September 27, 2022.
[214] Kirk, Alison, Senior Planner, Bay Area Air Quality Management District, e-mail correspondence with Josh Pollak, Senior Environmental Planner, San Francisco Planning Department, November 11, 2022.

The threshold of significance used to evaluate community health risks and hazards from new sources of TACs is based on the potential for the proposed project or variant to substantially affect the geography and severity of the APEZ at sensitive receptor and worker locations.

If the proposed project or variant would result in sensitive receptor or worker locations meeting the APEZ criteria that otherwise would not without the proposed project or variant, a substantial health risk contribution threshold is defined as an annual average $PM_{2.5}$ concentration at or above 0.3 $\mu g/m^3$ or an excess cancer risk at or greater than 10.0 per 1 million. The 0.3 $\mu g/m^3$ annual average $PM_{2.5}$ concentration and the excess cancer risk of 10.0 per 1 million persons exposed are the project-level health risk levels identified by the air district and the levels below which the air district considers new sources not to make a considerable contribution to cumulative health risks.[215] For those locations already meeting the APEZ criteria, a lower significance threshold is required to ensure that the proposed project or variant's contribution to existing health risks would not be significant. In these areas, the proposed project or variant's annual average $PM_{2.5}$ concentration at or above 0.2 $\mu g/m^3$ or an excess cancer risk at or greater than 7.0 per 1 million would be a substantial health risk contribution and a significant impact would occur.[216] Projects that result in a cancer risk or annual average $PM_{2.5}$ concentration below these levels at sensitive or worker receptors would not expose sensitive or worker receptors to substantial pollutant concentrations. Chronic Hazard Index (HI) resulting from the proposed project is also disclosed and compared against the air district's chronic HI threshold of 1.0. This analysis is presented in Impact AQ-3 and addresses the second bulleted significance criterion identified above.

Table 3.D-6 presents the cancer risk and $PM_{2.5}$ health risk thresholds that are applied to the proposed project or variant.

The health risk assessment was prepared using technical information and health risk assessment guidance and protocol from the air district,[217] air board,[218] OEHHA,[219] and the 2020 Citywide HRA.[220] The health risk assessment evaluated the estimated incremental increase in lifetime cancer risk from exposure to emissions of DPM and the annual average $PM_{2.5}$ concentrations associated with fuel combustion and on-road fugitive sources (including tire wear, brake wear, and road dust) that would be emitted by proposed project-related construction activities. Fugitive construction dust emissions, accounting for compliance with the Construction Dust Control Ordinance is also accounted for in the $PM_{2.5}$ concentration analysis. The health risk assessment focuses on the pollutants of concern ($PM_{2.5}$ and DPM) because these pollutants pose substantial health impacts at the local level more so than other types of air pollutants. While DPM is a complex mixture of gases and fine particles that includes over 40 substances that are listed by U.S. EPA as hazardous air

[215] Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines*, 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.
[216] A 0.2 $\mu g/m^3$ increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M. et al., "Spatial Analysis of Air Pollution and Mortality in Los Angeles," *Epidemiology* 16 (2005): 727–736. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7 per 1 million persons exposed.
[217] Bay Area Air Quality Management District, *Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*, January 2016, http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en, accessed September 29, 2022.
[218] California Air Resources Board, Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values, last updated October 2, 2020, https://ww2.arb.ca.gov/sites/default/files/classic//toxics/healthval/contable.pdf, accessed September 29, 2022.
[219] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html, accessed September 29, 2022.
[220] San Francisco Department of Public Health, and San Francisco Planning Department, *The San Francisco Citywide Health Risk Assessment: Technical Support Documentation*, September 2020.

Table 3.D-6 Excess Cancer Risk and $PM_{2.5}$ Concentration Thresholds

Affected Sensitive Receptors	$PM_{2.5}$ ($\mu g/m^3$)	Excess Cancer Risk (cases per 1 million population)
APEZ CRITERIA		
APEZ Criteria[a]	10	100
THRESHOLD FOR CONSTRUCTION AND OPERATION		
Significance threshold for project contributions to sensitive receptors meeting the APEZ criteria[b,c]	0.2	7.0
Significance threshold for project contributions to sensitive receptors that do not meet the APEZ criteria, but would meet the APEZ criteria as a result of the project[c,d]	0.3	10.0

SOURCES: BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 7, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/revised-draft-ceqa-thresholds-justification-report-oct-2009.pdf?la=en, accessed September 29, 2022;
BAAQMD, *California Environmental Quality Act Air Quality Guidelines*, May 2017, p. 2-2, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022;
San Francisco Department of Public Health, Environmental Health, Planning, *Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map*, April 9, 2014;
M. Jerrett et al., "Spatial Analysis of Air Pollution and Mortality in Los Angeles," *Epidemiology* 16:727–736, 2005

ABBREVIATIONS:

BAAQMD = Bay Area Air Quality Management District; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; $\mu g/m^3$ = micrograms per cubic meter; APEZ = Air Pollutant Exposure Zone

NOTES:

[a] See San Francisco Modeling of Air Pollution Exposure Zone discussion above.
[b] A 0.2 $\mu g/m^3$ increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about 21 excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on M. Jerrett et al. 2005. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7 per 1 million persons exposed.
[c] San Francisco Department of Public Health, Environmental Health, Planning, *Memorandum to File regarding 2014 Air Pollutant Exposure Zone Map* (April 9, 2014).
[d] BAAQMD, *California Environmental Quality Act Air Quality Guidelines,* 2017.

pollutants and by the air district as toxic air contaminants, in accordance with OEHHA health risk guidance, the DPM analysis used PM_{10} emissions as a surrogate for DPM emissions.[221] This is a conservative approach because DPM is a subset of PM_{10}, and therefore DPM emissions are expected to be lower. Pollutant concentrations were estimated using the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee regulatory air dispersion model (AERMOD version 21112).[222] Consistent with the 2020 Citywide HRA, health risks (cancer risk and chronic HI) from DPM and annual average $PM_{2.5}$ concentrations were estimated at all sensitive receptors located within 3,280 feet (1,000 meters) of the project site's boundaries.

The health risk assessment includes DPM and $PM_{2.5}$ emissions from vendor and hauling trucks but not from construction worker vehicle trips. This is because the proposed project or variant would not add 5,000 vehicle trips per day to any roadway. The air district recommends a traffic screening criterion of 10,000

[221] Office of Environmental Health Hazard Assessment, *For the "Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant" Part B: Health Risk Assessment for Diesel Exhaust*, May 1998, https://www.arb.ca.gov/toxics/dieseltac/part_b.pdf, accessed September 29, 2022.
[222] United States Environmental Protection Agency, *AERMOD Implementation Guide*, December 2016, https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_implementation_guide.pdf, accessed September 29, 2022.

vehicles per day for lifetime cancer risk exposure analyses.[223] This screening criterion was derived from 2003 OEHHA Guidance, which has since been updated. The current OEHHA Guidance roughly increases lifetime cancer risk exposure by a factor of 40 percent. To be conservative, a revised screening criteria of 5,000 vehicles per day was used, consistent with a 100 percent increase in lifetime exposure. This is a conservative approach for the construction analysis as the actual exposure period would be much shorter. Construction of the proposed project is anticipated to generate between 7 and 610 construction worker vehicle trips per day and would be well below the 5,000-vehicle trip per day screening criterion.

During operations, the proposed project or variant would not add 5,000 trips per day or more to any roadway. Based on guidance from the air district, operational on-road roadway emissions sources were not modeled in the health risk assessment. However, this analysis includes an estimate of health risks associated with operational on-road sources based on health risk screening data from the air district for roads with daily vehicle trip amounts similar to those for the proposed project and variant. These estimated health risks are added to the project or variant's total health risk impact.

RECEPTOR EXPOSURE ASSESSMENT

For assessing impacts to existing offsite receptors and new onsite receptors from construction and operational TAC emissions, exposure is assumed to begin to a fetus at the beginning of the 3rd trimester at the start of construction until age 30. Sensitive receptors analyzed include residents, daycare, students, and worker receptors.

Emissions and exposure to sensitive receptors would vary across the eight-year-long construction period. Therefore, multiple exposure scenarios were evaluated to capture the period of maximum impact on each existing off-site sensitive receptor and each new on-site sensitive receptor. Health impacts were evaluated for the following 12 exposure scenarios:

- For existing offsite receptors:
  - Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed;
  - Scenario 2: Exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed;
  - Scenario 3: Exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed;
  - Scenario 4: Exposure to construction beginning at the start of Phase 4 plus exposure to operation after construction is completed;
  - Scenario 5: Exposure to construction beginning at the start of Phase 5 plus exposure to operation after construction is completed; and
  - Scenario 6: Exposure to construction beginning at the start of Phase 6 plus exposure to operation after construction is completed.

[223] Bay Area Air Quality Management District, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May 2011, Table 14, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx?la=en, accessed September 29, 2022.

- For new onsite receptors:[224]
  - Scenario 7: Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to operation of completed phases;
  - Scenario 8: Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases;
  - Scenario 9: Phase 3 occupants: Exposure to subsequent construction beginning after Phase 3 construction is complete plus exposure to operation of completed phases;
  - Scenario 10: Phase 4 occupants: Exposure to subsequent construction beginning after Phase 4 construction is complete plus exposure to operation of completed phases; and
  - Scenario 11: Phase 5 occupants: Exposure to subsequent construction beginning after Phase 5 construction is complete plus exposure to operation of completed phases.
- For new onsite and existing offsite receptors:
  - Scenario 12: Exposure to full buildout operations once construction is complete.

These exposure scenarios were developed to capture the maximum impacts at all nearby sensitive receptors to proposed project or variant construction and operational TAC emissions. Due to the complex timing of proposed project or variant construction, the selection of exposure scenarios took into consideration the magnitude of potential activity to align with periods where TAC exposure has the greatest impact on health risks.

A detailed explanation of all assumptions and methods used in the health risk assessment is included in Appendix F.

CONSISTENCY WITH THE CLEAN AIR PLAN

The most recently adopted air quality plan for the air basin is the *2017 Clean Air Plan: Spare the Air, Cool the Climate*.[225] The 2017 Clean Air Plan is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. Consistency with the 2017 Clean Air Plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan, the fourth bulleted significance criterion identified above. This analysis is presented in Impact AQ-4.

In determining consistency with the 2017 Clean Air Plan, this analysis considers whether the Stonestown Development would (1) support the primary goals of the 2017 Clean Air Plan, (2) include applicable control measures from the 2017 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2017 Clean Air Plan. To meet the primary goals, the 2017 Clean Air Plan recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The 2017 Clean Air Plan recognizes that to

[224] The project would include an on-site daycare that would likely be located in the institutional land use areas. Because the exact location is not known at this time, each phase with this land use also considers potential daycare receptors.
[225] Bay Area Air Quality Management District, *2017 Clean Air Plan: Spare the Air, Cool the Climate*, April 19, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed September 29, 2022.

a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria air pollutants, air toxics, and GHG emissions from motor vehicles is to channel future bay area growth into urban communities where goods and services are close at hand, and people have a range of viable transportation options. To this end, the 2017 Clean Air Plan includes 85 control measures aimed at reducing air pollution in the air basin.

METHODS FOR ANALYSIS OF CUMULATIVE IMPACTS

As noted above, by definition, regional air pollution is largely a cumulative impact in that no single project is sufficient in size, by itself, to cause nonattainment of air quality standards. The contribution of a project's air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from cumulative projects in the vicinity could also contribute to cumulative air quality conditions and potentially adverse regional air quality impacts.[226] The project-level thresholds for criteria air pollutants identify levels of emissions for new sources that are not anticipated to result in a considerable net increase in nonattainment criteria air pollutants. Therefore, if a project's emissions are below the project-level thresholds, the project would not result in a considerable contribution to cumulative regional air quality impacts. For this reason, no separate cumulative criteria air pollutant analysis is warranted, and none is provided below. Refer to Impacts AQ-1 and AQ-2 for analysis of the project's contribution to regional criteria air pollutant impacts.

Potential cumulative health risks were analyzed at the proposed project and variant's maximally-exposed individual (MEI). The analysis considers health risks from the proposed project or variant in combination with health risk and TACs from cumulative projects within 1,000 meters (3,280 feet) of the MEIs.[227] This distance is conservatively greater than the 1,000-foot radius known as the "zone of influence" recommended by the air district for considering existing background and cumulative sources of health risk.[228] Cumulative health risks are addressed qualitatively because of the lack of available emissions and health risk data for the cumulative projects. Where quantitative health risk information for cumulative projects was available, that information is disclosed.

As discussed above, an annual average $PM_{2.5}$ concentration of 0.3 µg/m^3 and lifetime excess cancer risk concentration of 10.0 per one million persons exposed are the levels below which the air district considers new sources not to make a considerable contribution to cumulative health risks.[229] However, for those sensitive receptor locations already meeting the APEZ criteria, a lower significance threshold is required to ensure that the proposed project or variant's contribution to cumulative health risks would not be significant. In these areas, the proposed project or variant's annual average $PM_{2.5}$ concentration at or above 0.2 µg/m^3 or a lifetime excess cancer risk at or greater than 7.0 per one million would be a cumulatively considerable health risk contribution and the project would result in a significant cumulative impact.[230]

---

[226] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.
[227] The MEI adequately captures analysis of all sensitive receptors.
[228] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 29, 2022.
[229] Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines* (2017), accessed March 24, 2022, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.
[230] A 0.2 µg/m^3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M. et al., Spatial Analysis of Air Pollution and Mortality in Los Angeles, *Epidemiology* 16 (2005): 727–736. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7 per 1 million persons exposed.

A detailed explanation of all assumptions and methods used to calculate cumulative health risks is included in Appendix F.

IMPACT EVALUATION

CRITERIA AIR POLLUTANTS

Impact AQ-1: During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. ***(Significant and Unavoidable with Mitigation)***

CONSTRUCTION

Construction of the proposed project or variant would emit criteria air pollutant emissions in the form of fugitive dust during earthmoving and ground-disturbing activities; fugitive dust from travel on paved roads; and exhaust from heavy construction equipment, construction material delivery trucks (including concrete and dump trucks), and construction worker vehicles. Each of these activities is discussed below.

Fugitive Construction Dust

Construction of the proposed project or variant has the potential to create temporary air quality impacts through emissions of fugitive dust. Fugitive dust emissions would result from site disturbance including excavation and grading. Proposed project or variant-related demolition, excavation, grading, and other construction activities may cause wind-blown dust, which would contribute particulate matter to the local atmosphere. The Construction Dust Control Ordinance, described under Local Regulations, p. 3.D-20, requires all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or expose or disturb more than 10 cubic yards, or 500 square feet, of soil to comply with specified dust control measures, whether or not the activity requires a permit from the director of public health.

Building permits will not be issued without written notification from the director of public health that states that the applicant has a site-specific dust control plan. A dust control plan is required for projects that would disturb 0.5 acre or more. Since the construction area is approximately 27 acres in size, a dust control plan would be required. The Construction Dust Control Ordinance requires the project sponsor and the contractors who are responsible for construction activities to minimize visible dust on the site. Minimum dust control measures that apply to all projects include watering all construction areas sufficiently to prevent dust from becoming airborne; providing as much water as necessary to control dust (without creating runoff) in any area of land clearing, earth movement, excavation, and other dust generating activity; during excavation and dirt moving activities, wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday; covering any inactive stockpiles greater than 10 cubic yards or 500 square feet of excavated materials, and using dust enclosures, curtains, and dust collectors as necessary to control dust in the excavation area.

Other dust control measures in the required site-specific dust control plan could include but are not limited to wetting down the area around soil improvements; an analysis of wind direction; placement of dust monitors; recordkeeping for particulate monitoring results; inspections and record keeping for visible dust; and establishing a hotline for surrounding community members to call and report visible dust problems.

Reclaimed water must be used for watering down the construction area as required by public works code article 21, section 1100 et seq. Article 21 of the public works code requires the use of non-potable water for soil compaction and dust control undertaken in conjunction with any construction or demolition project occurring within the boundaries of San Francisco, unless permission is obtained from the San Francisco Public Utilities Commission (SFPUC). SFPUC operates a recycled water fill station at the Southeast Water Pollution Control Plant, which provides recycled water at no charge.

In addition to the requirements listed above, the site-specific dust control plan would require the project sponsor to submit a map to the director of public health that shows all sensitive receptors within 1,000 feet of the site. The project sponsor would be required to designate an individual to monitor project compliance with these dust control requirements. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that potential dust-related criteria air pollutant impacts during project construction would be less than significant. This conclusion is consistent with the air district's threshold for fugitive dust created by construction activities, which is that best management practices for dust control be implemented.

Equipment Exhaust

Construction of the proposed project or variant has the potential to create temporary air quality impacts through emissions of criteria air pollutants associated with the use of heavy-duty construction equipment, construction workers' vehicle trips, and truck hauling trips. Fugitive ROG emissions would result from application of architectural coatings and paving. The assessment of construction criteria air pollutant impacts considers each of these potential sources. Demolition and construction activities would require the use of heavy trucks, excavators, material loaders, cranes, and other mobile, and stationary construction equipment.

OPERATION

Operation of the proposed project or variant is planned to start in 2028 (when Phase 1 construction is complete and Phase 1 land uses would become operational). Operational emissions sources would include architectural coating, consumer products, exhaust from on-road vehicles (mobile emissions), area sources such as landscaping equipment, and emergency generator testing and use. Existing operational emissions sources similarly include these mobile and area sources, emergency generators, and energy use (natural gas) associated with the existing mall and its parking lots and garages. As discussed above, the incremental increase in emissions from the proposed project or variant is the emissions from the project or variant minus existing emissions occurring at the site that would be removed with implementation of the proposed project or variant. The existing emissions occurring at the site that would be removed with implementation of the proposed project or variant are shown in **Table 3.D-7**. The "existing conditions" emissions that would be subtracted under the variant are greater than the proposed project as the Authentic Church would be removed.

INTERIM YEAR COMBINED CONSTRUCTION AND OPERATIONAL EMISSIONS

The proposed project or variant would require construction for a period of approximately eight years, resulting in some portions of the project fully constructed and occupied while remaining portions of the project continue to be under construction. Therefore, it is necessary to evaluate the impacts of overlapping construction and operational emissions that occur in any given year, termed interim years. **Table 3.D-8**, p. 3.D-39, presents emissions for year 2024 (when construction starts) through year 2032 when construction

Table 3.D-7 Proposed Project and Variant Existing Condition Emissions

Emissions Source	Average Daily Operational Emissions (pounds/day)[a]				Total Annual Operational Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
PROPOSED PROJECT EXISTING CONDITIONS								
Architectural Coating	0.41	0	0	0	<0.1	0	0	0
Consumer Products	1.8	0	0	0	0.33	0	0	0
Landscaping	0.22	0	0	0	0.04	0	0	0
Natural Gas Use	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Emissions	***2.4***	***0.1***	***<0.1***	***<0.1***	***0.45***	***<0.1***	***<0.1***	***<0.1***
VARIANT EXISTING CONDITIONS								
Architectural Coating	0.5	0	0	0	0.1	0	0	0
Consumer Products	2.2	0	0	0	0.4	0	0	0
Landscaping	0.3	0	0	0	<0.1	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	***3.0***	***<0.1***	***<0.1***	***<0.1***	***0.5***	***0.4***	***<0.1***	***<0.1***

SOURCES: Ramboll 2022; see Appendix F;
Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act (CEQA) Guidelines*, May 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

ABBREVIATIONS:

BAAQMD - Bay Area Air Quality Management District; NOx - nitrogen oxides; PM - particulate matter; ROG – reactive organic gases

NOTES:

[a] Daily emissions are averaged over 365 days per year.

emissions are combined with interim operational emissions (interim operations start in 2028) for the proposed project and variant. **Figure 3.D-2**, p. 3.D-40, presents the same information in graphical format. When Phase 1 construction is complete and Phase 1 land uses become operational in 2028, construction of Phases 2, 3, 4, and 5 would be ongoing. Thus, there would be an overlap of construction and operational emissions from Phases 2 through 6 until construction is completed in year 2032. Operational emissions represent net new emissions after subtracting emissions from existing conditions (see Table 3.D-7, p. 3.D-38).

As shown in Table 3.D-8 and Figure 3.D-2, the combined construction and net new interim operational emissions of ROG in 2028 would exceed the significance threshold for both the proposed project and variant; this would be a significant impact. In 2028, ROG emissions from construction alone would exceed the significance threshold. Starting in 2029, construction ROG emissions by themselves would be below the significance threshold; however, when combined with operational emissions, ROG emissions would exceed the ROG threshold of 54 pounds per day. The majority (91 percent) of ROG emissions during construction in 2028 would be generated from architectural coating for the proposed buildings and the majority (51 percent) of ROG emissions during operations would be from consumer product use. Emissions of NO_X, PM_{10}, and $PM_{2.5}$ would not exceed the significance thresholds in any year and would be less than significant.

Table 3.D-8 Construction and Net New Interim Operational Emissions by Year for the Proposed Project and Variant

Year	Average Daily Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds/day)[a,b,c]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
PROPOSED PROJECT				
2024 (construction only)	0.92	15.0	1.4	0.5
2025 (construction only)	3.1	17.8	3.1	0.8
2026 (construction only)	18	23	6.3	1.5
2027 (construction only)	45	29	9.4	2.0
2028 (construction and operations)	**78**	36	20	3.9
2029 (construction and operations)	**84**	42	35	6.5
2030 (construction and operations)	**105**	42	39	7.2
2031 (construction and operations)	**121**	45	46	8.4
2032 (construction and operations)	**119**	42	54	10
Significance Thresholds	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No
VARIANT				
2024 (construction only)	0.92	15.0	1.4	0.5
2025 (construction only)	3.1	17.8	3.1	0.8
2026 (construction only)	18	23	6.3	1.5
2027 (construction only)	45	31	13	3.4
2028 (construction and operations)	**78**	36	19	4.1
2029 (construction and operations)	**82**	41	33	6.6
2030 (construction and operations)	**106**	41	35	6.9
2031 (construction and operations)	**124**	46	48	8.7
2032 (construction and operations)	**122**	42	56	10
Significance Thresholds	54	54	82	54
Exceeds Threshold	**Yes**	No	No	No

SOURCE: Ramboll 2022; see Appendix F

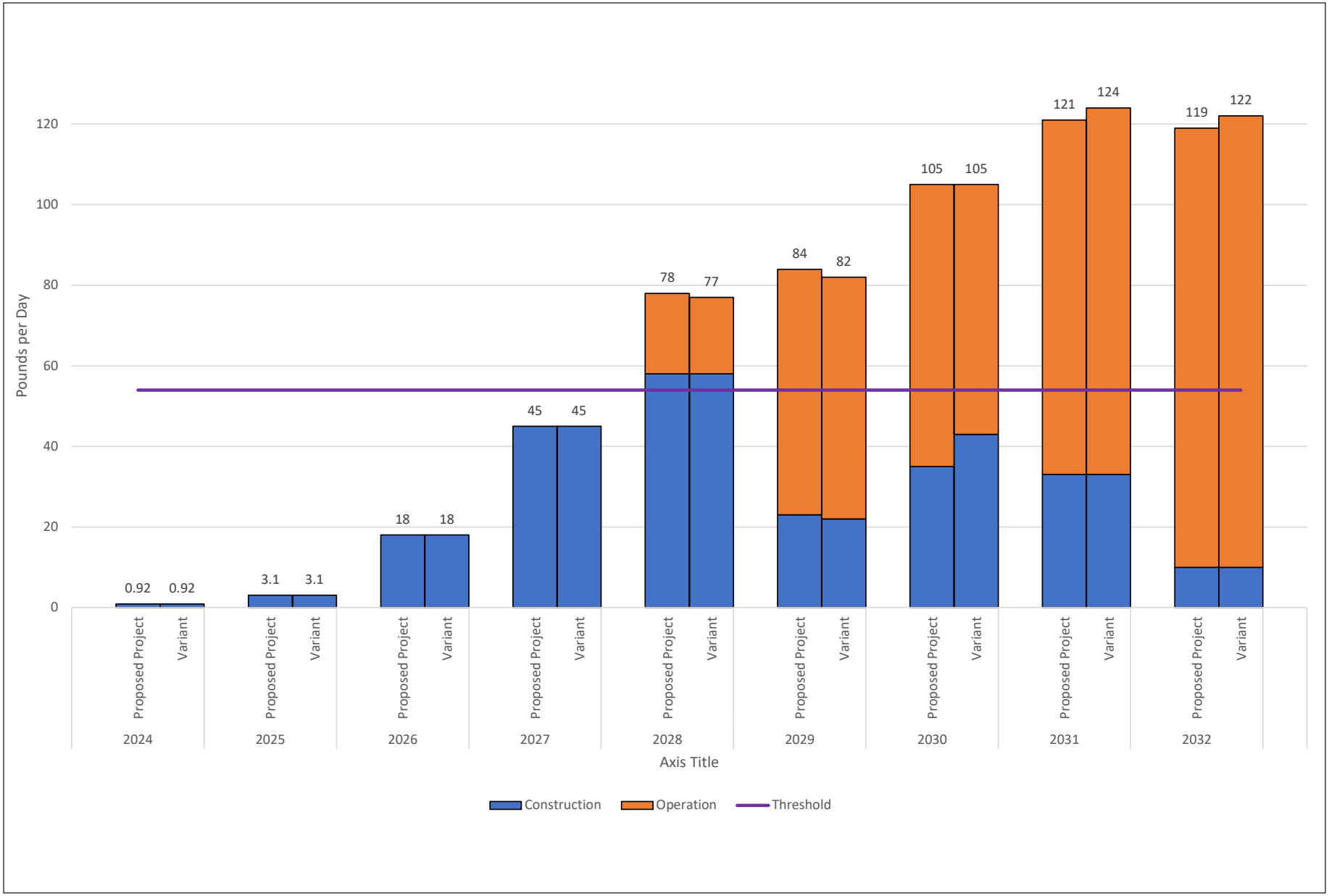
ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; PM = particulate matter; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NOx = nitrogen oxides

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[c] Construction emissions are presented in Appendix F, Tables 18 and 19. Net operational emissions were calculated by subtracting the emissions from the existing conditions from the proposed project emissions, as reported in Table 3.D-13, p. 3.D-58.



SOURCE: ESA, 2022

Stonestown Development Project

FIGURE 3.D-2

AVERAGE DAILY CONSTRUCTION AND NET NEW INTERIM OPERATIONAL ROG EMISSIONS (POUNDS/DAY)

MITIGATION MEASURES

To address ROG emissions that would exceed significance thresholds during overlapping construction and operations of the proposed project or variant, **Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a** would be required.

Mitigation Measure M-AQ-1a: Clean Off-Road Construction Equipment. The project sponsor shall comply with the following:

1. *Engine Requirements.* All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the duration of construction shall meet the following requirements:
    a. All portable engines, such as generators, shall be electric. If grid electricity is not available, propane or natural gas generators shall be used if feasible.
    b. Electric engines shall be used for all equipment that is readily available as plug-in or battery-electric equipment, to the maximum extent feasible during each construction phase and activity. Portable equipment shall be powered by grid electricity if available. Electric equipment may include, but is not limited to, concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, and cement and mortar mixers, pressure washers, and pumps.
    c. Engines that cannot be electrically powered must meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board (air board) Tier 4 Final off-road emission standards, except as provided for below. Exceptions to the requirement for engines that meet Tier 4 Final emission standards shall include only select pieces of specialty equipment, such as those specified below, for which such engines may not be available at the start of a construction phase requiring that equipment. Exceptions may be granted for certain pieces of equipment; examples include bore/drill rigs required for grading/shoring/excavation and for cranes required for building construction. To qualify for an exception, the Project sponsor shall provide the Environmental Review Officer (ERO) with evidence supporting its conclusion that equipment meeting Tier 4 standards is not commercially available and shall use the next cleanest piece of off-road equipment.
    d. Engines shall be fueled with alternative fuels, including natural gas, propane, hydrogen fuel cell, and electricity, as commercially available and to the maximum extent feasible during each construction phase and activity.
    e. Any other best technology available in the future may be included in the construction emissions minimization plan as substitutions for the above items a–d, provided that the project sponsor submits documentation to the planning department demonstrating that (1) the technology would result in comparable reactive organic gases (ROG) and diesel particulate matter (DPM) emissions reductions and (2) it would not increase other pollutant emissions or exacerbate other impacts, such as noise. This may include new alternative fuels or engine technology for off-road equipment (such as electric or hydrogen fuel cell equipment) that is not available as of 2022.
    f. The project sponsor shall require the idling time for off-road equipment be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road equipment. Documentation shall be provided to equipment operators in multiple languages (e.g., English, Spanish, Chinese) to remind operators of the

2-minute idling limit. If the majority of the project sponsor's construction staff speak a language other than these, then the documentation shall be provided in that language as well.

g. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

2. *Waivers.* The ERO may waive the electric engine requirement of above items 1.a and 1.b if electric power is limited or infeasible at the project site. If the ERO grants the waiver, the contractor must submit documentation that the equipment used for onsite power generation meets the requirements of items 1.c and 1.d.

   a. The ERO may waive the equipment requirements of item 1.c if: (1) the contractor does not have the required type of equipment within its current available inventory or has ordered such equipment at least 60 days in advance and has made a good faith effort to lease or rent such equipment but it is not available; (2) a particular piece of Tier 4 final off-road equipment is technically or financially infeasible; (3) the equipment would not produce desired emissions reduction due to expected operating modes; or (4) there is a compelling emergency need to use off-road equipment that is not Tier 4 Final compliant. If the ERO grants the waiver, the contractor must use the next cleanest piece of off-road equipment that is commercially available, or another alternative that results in comparable reductions of ROG and DPM emissions.

   b. The ERO may waive the alternative fuel requirements of item 1.d if alternative fuels are not commercially available or the use of alternative fuels would negatively affect construction performance, void equipment warranties, or would result in additional ROG or DPM emissions compared to traditional fuels. For purposes of this mitigation measure, "not commercially available" is defined as either: (1) not being used for other large-scale construction projects in the Bay Area occurring at the same time; (2) cannot be obtained without significant delays to critical-path timing of construction; or (3) not available within the larger Bay Area region. The project sponsor must provide sufficient documentation to the ERO when seeking any waiver described above.

3. *Construction Emissions Minimization Plan.* Before starting onsite construction activities, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the ERO for review and approval. The Plan shall state, in reasonable detail, how the contractor will meet the requirements of item 1.

   a. The Plan shall include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for every construction phase. The description may include but is not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, expected fuel type (e.g., diesel, gasoline, electric, propane, natural gas), and hours of operation.

   b. The project sponsor shall make the Plan available to the public for review onsite during working hours. The contractor shall post a notice summarizing the Plan. The notice shall also state that the public may ask to inspect the Plan for the project at any time during working hours and shall explain how to request to inspect the Plan. The project sponsor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.

4. *Reporting.* After start of construction activities, the project sponsor shall submit annual reports to the ERO documenting compliance with the Plan. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities, including the start and end dates and duration of each construction phase, and the specific information required in the Plan.

   The annual reports shall also include documentation supporting the use of waivers if the engine requirements of items 1.a, 1.b, 1.c, and/or 1.d cannot be met.

5. *Certification Statement and Onsite Requirements.* Prior to commencing construction activities, the project sponsor shall certify that all applicable requirements of the Plan have been incorporated into contract specifications.

Mitigation Measure AQ-1b: Super-Compliant VOC Architectural Coatings during Construction. The project sponsor shall use "super-compliant" volatile organic compound (VOC) architectural coatings during construction for all interior and exterior spaces and shall include this requirement on plans submitted for review to the planning department. The project sponsor shall submit a signed certification statement that this requirement has been incorporated into contract specifications. "Super-Compliant" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113 which requires a limit of 10 grams VOC per liter (http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings).

Mitigation Measure M-AQ-1c: Clean On-Road Construction Trucks. The project sponsor shall comply with the following for all phases of construction:

1. *Engine Requirements.*

   a. All on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks, concrete trucks, and vendor trucks) shall be model year 2018 or newer.

   b. Use alternative fuels as commercially available, such as natural gas, propane, hydrogen fuel cell, and electric vehicles or other fuels where evidence suggests that ROG emissions would be reduced compared to conventional diesel fuel.

   c. Any other best technology available in the future (i.e., not available as of 2022) may be used in lieu of or in addition to the above items 1.a and 1.b, provided that the project sponsor submits documentation to the ERO demonstrating that (1) the technology would result in comparable ROG emissions reductions and (2) that such measures would not increase other pollutant emissions or result in other impacts, such as noise. This may include new alternative fuels for on-road trucks.

   d. Require the idling time for on-road vehicles be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for on-road vehicles. Documentation shall be provided to truck drivers in multiple languages (e.g., English, Spanish, Chinese) to remind operators of the 2-minute idling limit. If the majority of the project sponsor's construction staff speak a language other than these, then the documentation shall be provided in that language as well.

2. *Waivers.* The ERO may waive the alternative fuel requirements of item 1.b if alternative fuels are not commercially available or the use of alternative fuels is not technologically feasible, would void truck warranties, or would result in additional ROG or DPM emissions compared to traditional fuels. For purposes of this mitigation measure, "not commercially available" shall be defined as: (1) not being used for other large-scale construction projects in the Bay Area occurring at the same time; (2) cannot be obtained without significant delays to critical-path timing of construction; or (3) not available within the larger Bay Area region.
3. *Construction Emissions Minimization Plan.* The Construction Emissions Minimization Plan (Plan), as described in Mitigation Measure M-AQ-1a item 3 above, shall include a description of each general category of on-road trucks required for every construction phase. The description shall also specify the engine model years and fuel type being used (e.g., diesel, electric, natural gas).
4. *Reporting.* The report, as described in Mitigation Measure M-AQ-1a item 4, shall include documentation of compliance with the Plan regarding on-road trucks, in addition to off-road construction equipment. The report shall include documentation supporting the use of waivers if engine requirements under Item 1.a or 1.b cannot be met.
5. *Certification Statement and Onsite Requirements.* The Certification Statement, as described in Mitigation Measure M-AQ-1a item 5 above, shall apply to all applicable requirements for on-road trucks.

Mitigation Measure M-AQ-1d: Super-Compliant VOC Architectural Coatings during Operation. The project sponsor or vertical developer shall include in all building rules and/or building operation plans (as applicable, depending on the parcel) a requirement that all future interior and exterior spaces be repainted only with "super-compliant" VOC (i.e., ROG) architectural coatings beyond Bay Area Air Quality Management District (air district) requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). "Super-compliant" coatings refer to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113 which requires a standard of 10 grams VOC per liter or less (http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings). The project sponsor or vertical developer shall submit documentation to the ERO demonstrating compliance with this measure.

Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators. To reduce emissions of ROG and toxic air contaminants (TACs) associated with operation of the proposed project, the project applicant shall implement the following measures. These features shall be submitted to the ERO for review and approval, and shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City prior to the issuance of any building permits:

1. Permanent stationary emergency generators installed on-site shall have engines that meet or exceed California Air Resources Board Tier 4 Off-Road Compression Ignition Engine Standards (California Code of Regulations Title 13, Section 2423). If the California Air Resources Board adopts future emissions standards that exceed the Tier 4 requirement, the emissions standards resulting in the lowest ROG and DPM emissions shall apply.
2. As non-diesel-fueled emergency generator technology becomes readily available and cost effective in the future, and subject to the review and approval of the City fire department for safety purposes, non-diesel-fueled generators shall be installed in new buildings, provided that

alternative fuels used in generators, such as biodiesel, renewable diesel, natural gas, or other biofuels or other non-diesel emergency power systems, are demonstrated to reduce ROG and DPM emissions compared to diesel fuel.

3. For each new diesel backup generator permit submitted to air district for the proposed project, the project applicant shall submit the anticipated location and engine specifications to the planning department ERO for review and approval prior to issuance of a permit for the generator. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment, and any future replacement of the diesel backup generators must be consistent with these emissions specifications. The operator of the facility at which the generator is located shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and shall provide this information for review to the planning department within three months of requesting such information.

Mitigation Measure M-AQ-1f: Promote Use of Green Consumer Products. To reduce ROG emissions associated with the project, the project sponsor shall provide education for residential and commercial tenants concerning green consumer products. Prior to receipt of any certificate of occupancy, the project sponsor shall develop electronic correspondence to be distributed by email annually and upon any new lease signing to residential and/or commercial tenants of each building on the project site that encourages the purchase of consumer products that generate lower than typical VOC emissions. The correspondence shall encourage environmentally preferable purchasing.

Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction. The project sponsor shall incorporate the following measures into the project design and construction contracts (as applicable) to reduce ROG emissions associated with operational trucks, along with the potential health risk caused by exposure to toxic air contaminants. These features shall be submitted to the planning department ERO for review and approval prior to the issuance of building permits and shall be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. Emissions from project-related diesel trucks shall be reduced by implementing the following measures, if feasible:

1. Equip all truck delivery bays with electrical hook-ups for diesel trucks at loading docks to accommodate plug-in electric truck transport refrigeration units (TRUs) or auxiliary power units during project operations.
2. Provide a notice on the lease to all new tenants or owners of the project or any portion thereof requiring any truck-intensive uses on the site, such as large grocery stores or distribution facilities with their own fleet of trucks, to use TRUs and auxiliary power units that are electric plug-in capable and trucks that use advanced exhaust technology (e.g., hybrid) or alternative fuels.
3. Encourage the use of trucks equipped with diesel TRUs to meet U.S. Environmental Protection Agency Tier 4 emission standards.
4. Prohibit TRUs from operating at loading docks for more than thirty minutes, and post signs at each loading dock presenting this TRU limit.
5. Prohibit trucks from idling for more than two minutes, and post “no idling” signs at the site entry point, at all loading locations, and throughout the project site.

Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure. Prior to the issuance of a certificate of occupancy for any project structure with parking, the project applicant shall demonstrate compliance with the 2022 California Green Building Standards (CALGreen Code) Tier 2 voluntary electric vehicle (EV) charging requirements or the mandatory requirements of the most recently adopted version of the City building code, whichever is more stringent. The installation of all EV charging equipment shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City.

Mitigation Measure M-AQ-1i: Electric Landscaping Equipment. To reduce ROG emissions associated with the project, the project sponsor shall use only electric landscaping equipment. No landscaping equipment powered by gasoline, diesel, propane, or other fossil fuels shall be used. The project applicant shall incorporate this requirement into the project design and tenant contracts (as applicable).

Mitigation Measure M-AQ-1j: Offset Remaining ROG Emissions. The project sponsor, with the oversight of the planning department, shall implement one or more of the following measures to achieve annual reductions or offsets of ROG emissions within the San Francisco Bay Area Air Basin equal to the amount required to reduce total project construction plus operational ROG emissions below 10 tons per year (54 pounds per day on average) after implementation of all other identified mitigation measures as approved through the documentation submitted to the planning department as stipulated in Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a. Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: 0.2 tons for the project and 0.0 tons[231] for the variant in 2030; 2.6 tons for the project and 3.0 tons for the variant in 2031; and 4.6 tons for the project and 5.0 tons for the variant in 2032 and each year thereafter. Alternatively, the project sponsor may submit documentation to the planning department demonstrating that the project or variant has not exceeded the ROG emissions performance standard of 10 tons per year (or 54 pounds per day) for each year or that the required emissions offset is lower than that calculated herein. Such documentation would include a recalculation of the project's ROG emissions from all sources (including the emissions reductions achieved by the project or mitigation measures) using methods generally consistent with those used in the EIR. The following identifies potential mechanisms to offset ROG emissions that exceed the 10 tons per year performance standard.

1. *Directly fund or implement a specific offset project within the San Francisco Bay Area Air Basin.* Emission reduction projects shall occur in the following locations in order of priority to the extent available and feasible: (1) at the project site; (2) off-site within the neighborhood surrounding the project site; (3) within the city and county of San Francisco; and (4) within the San Francisco Bay Area Air Basin. Any offsite emission reduction projects are subject to the approval by the City. Such projects could include strategies and control measures such as zero-emission trucks, upgrading locomotives with cleaner engines, replacing existing diesel stationary and standby engines with Tier 4 diesel or cleaner engines, or expanding or installing energy storage systems (e.g., batteries, fuel cells) to replace stationary sources of pollution. Prior to implementing the offset project, it must be approved by the planning department, as consistent with the requirements of this mitigation measure.

[231] The variant parcel would be under construction in 2030 and therefore operational emissions would be less than the proposed project.

2. *Pay mitigation offset fees* to an independent third-party approved by the planning department. The mitigation offset fee shall fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. Emission reduction projects shall occur in the following locations in order of priority to the extent available and feasible: (1) at the project site; (2) off-site within the neighborhood surrounding the project site; (3) within the city and county of San Francisco, and (4) within the San Francisco Bay Area Air Basin. The fee will be determined through consultation between the project sponsor and the entity and be based on the type of projects available at the time of the payment.

3. *Memorandum of Understanding.* When paying a mitigation offset fee under item 2, the project sponsor shall enter into a memorandum of understanding (MOU) with the entity or other binding agreement. The MOU or agreement shall include details regarding the funds to be paid, the administrative fee, and the timing of the emissions reductions project(s). Acceptance of this fee by the entity shall serve as acknowledgment and a commitment to implement an emissions reduction project(s) within a time frame agreed upon in the MOU or agreement based on the type of project(s) selected, after receipt of the mitigation fee to achieve the emissions reduction objectives specified above.

4. *Waivers.* The ERO may waive the requirement to achieve annual reductions or offsets of ROG equal to the amount required to reduce emissions below 10 tons per year (54 pounds per day) after implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a and if: (1) sufficient ROG emission offset projects within the San Francisco Bay Area Air Basin, as described in item 1, are not available to reduce ROG emissions below 10 tons per year (54 pounds per day) when they occur during proposed project buildout; or (2) the offset projects or the mitigation offset fees, as described in item 3, are determined to be infeasible as defined under CEQA.

5. *Offset Verification Report.* The project sponsor shall prepare an Annual Offset Verification Report (Report) as follows:

    a. *Offset Project Documentation:* Any offset project implemented, or offset fee paid, must result in ROG emission reductions within the San Francisco Bay Area Air Basin that are real, permanent, quantifiable, enforceable, and surplus as defined in the Bay Area Air Quality Management District Regulation 2, Rule 2: New Source Review, sections 2-3-301, 2-2-211, 2-2-603, and 2-2-605. The project sponsor shall certify that each specific emission reduction offset project meets these requirements. Should the project sponsor choose to recalculate the project's annual ROG emissions and ROG offset requirement to achieve the performance standard of 10 tons per year (54 pounds per day on average), the documentation shall quantify the ROG reduction(s) achieved by all offset projects to demonstrate that the gap between the project's mitigated emissions and the significance threshold of 10 tons per year of ROG has been met through the offset project(s). For this option, each Offset Verification Report shall demonstrate, based on substantial evidence, that the project has reduced annual ROG emissions below the thresholds of significance of 10 tons per year. The requirement to fund an offset project(s) described in item 1 above and/or to pay mitigation offset fees through the MOU described in items 2 and 3 above shall terminate if the project sponsor is able to demonstrate that the project's operational emissions are less than 10 tons per year (54 pounds per day).

b. *Report Submittal.* The report shall be prepared by the project sponsor and submitted to the San Francisco Planning Department for review and verification. Documentation of offset projects and mitigation offset payments, as applicable, shall be provided to the San Francisco Planning Department for review and approval prior to the start of construction for the first year when project ROG emissions are predicted to exceed 10 tons per year. If the San Francisco Planning Department determines the report is reasonably accurate, it shall approve the report; otherwise, the planning department shall identify deficiencies and direct the project sponsor to correct and re-submit the report for approval.

Implement **Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips.** See Section 3.B, Transportation and Circulation, Impact TR-4.

The effectiveness of the above mitigation measures was evaluated. See Appendix F for detailed methodology of the quantification methods, which are summarized below.

Mitigation Measure M-AQ-1a would reduce criteria air pollutant emissions associated with off-road construction equipment by requiring U.S. EPA Tier 4 Final and electric engines. Tier 4 Final off-road engines emit approximately 70 percent less ROG than default fleet construction equipment. This mitigation measure allows for limited exceptions if Tier 4 final engines are not available for selected pieces of specialty equipment at the start of a construction phase requiring that equipment. The mitigated emissions account for these exceptions by assuming that a small portion of the equipment would not meet Tier 4 final emissions standards.

Mitigation Measure M-AQ-1b would reduce ROG emissions associated with architectural coatings applied during construction by requiring the use of super-compliant VOC coatings with a maximum VOC content equal to 10 grams of VOC per liter for all interior spaces; the default VOC content of coatings is 100 grams per liter for interior coatings (150 grams per liter for exterior coatings).

Mitigation Measure M-AQ-1c would reduce ROG emissions from on-road heavy-duty construction trucks by requiring that all heavy-duty trucks have model year 2018 or newer engines. An analysis of heavy-duty trucks with engines no more than 10 years old (e.g., trucks with model year 2014 or newer engines during construction in 2024 and trucks with model year 2022 or newer engines during construction in 2032) showed minimal differences in ROG emission reductions compared to simply requiring model year 2018 or newer trucks for the duration of construction.[232] Therefore, this mitigation measure requires model year 2018 or newer trucks as opposed to a mitigation measure that requires trucks to be no older than 10 years.

Mitigation Measure M-AQ-1d would reduce ROG emissions associated with architectural coatings applied during operations by requiring the use of super-compliant VOC coatings (see above for description of maximum VOC content for this mitigation measure).

Mitigation Measure M-AQ-1e would reduce ROG emissions associated with diesel emergency generator operations by requiring all generators to meet U.S. EPA Tier 4 engine emission standards.

Mitigation Measure M-AQ-1f would require the Project sponsor to educate and encourage residential tenants and commercial tenants to purchase products that are safer and better for the environment; however, given

[232] This analysis is included in Appendix E of the Air Quality and Health Risk Assessment Results. The Air Quality and Health Risk Assessment Results is included as Appendix F of this EIR.

that the Project sponsor does not have authority to require use of certain consumer products by building occupants or tenants, no reductions in ROG emissions are attributed to this measure.

Mitigation Measure M-AQ-1g would reduce ROG emissions associated with truck exhaust during operational activities by requiring advanced exhaust technology, Tier 4 emission standards for TRUs, the use of electrical hookups to replace TRU operations, and idling limitations. However, due to the lack of information about future tenants and truck activity at the project site, ROG emission reductions were not quantified for this measure.

Mitigation Measure M-AQ-1h would reduce ROG emissions from light-duty vehicles by building additional EV charging stations, which would encourage the use of EVs and thereby reduce gasoline and diesel vehicle travel. However, ROG emission reductions from this measure were not quantified.

Mitigation Measure M-AQ-1i would reduce ROG emissions from landscaping equipment by requiring all landscaping equipment to be powered by electricity, which would reduce gasoline and diesel fuel use.

Mitigation Measure M-TR-4a would reduce ROG emissions from light-duty vehicles by reducing vehicle trips and VMT by about 10 percent compared to unmitigated conditions.

Table 3.D-9 presents mitigated construction and operational emissions by year from 2024 through 2032 for the proposed project and variant. **Figure 3.D-3**, p. 3.D-51, presents the same information in graphical format.

SIGNIFICANCE AFTER MITIGATION

With implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a, ROG emissions would be reduced, but not below the significance threshold. From 2030 through 2032, combined construction and operational emissions with implementation of mitigation measures M-AQ-1a through M-AQ-1i and M-TR-4a would exceed the ROG significance threshold. For the variant, the ROG significance threshold would be exceeded with implementation of M-AQ-1a through M-AQ-1i and M-TR-4a from 2031through 2032. As such, Mitigation Measure M-AQ-1j would require the project sponsor to implement emission offsets to reduce ROG emissions below the significance threshold. However, implementation of the emissions offset mitigation measure is uncertain for several reasons: offset projects could be conducted by a third party and would be outside the jurisdiction and control of the City; such projects are not fully within the control of the project sponsor; such projects may not be sufficiently concurrent with proposed project or variant emissions in excess of the significance threshold; and no specific ROG emission reduction project has been identified and such offset projects or offsets may not be feasible as defined under CEQA. Therefore, the impact with respect to criteria air pollutants would be ***significant and unavoidable with mitigation***.

It should be noted that in addition to reducing emissions for years when the ROG significance threshold is exceeded, Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a would reduce ROG emissions during years when the significance threshold is not exceeded, thereby reducing the proposed project's significant and unavoidable contribution to regional ozone concentrations. For example, the mitigation measures would reduce ROG emissions in 2027 for the proposed project from 45 pounds per day to 9 pounds per day. Although this reduction is not needed to reduce the annual impact in 2027 to less-than-significant levels, it would lessen the proposed project or variant's impact on regional air quality; specifically, the proposed project or variant's potential to worsen ozone in the air basin. Furthermore, the mitigation measures identified to reduce the proposed project or variant's ROG emissions would also reduce NOx emissions. Because NOx is an ozone precursor, these mitigation measures would further lessen the proposed project's

Table 3.D-9 Mitigated Construction and Net New Interim Operational Emissions by Year for the Proposed Project and Variant

Year	Mitigated Average Daily Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds/day)[a,b,c]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
PROPOSED PROJECT				
2024 (construction only)	0.4	1.5	0.9	0.2
2025 (construction only)	1.4	2.6	2.5	0.5
2026 (construction only)	4.7	5.5	5.7	1.0
2027 (construction only)	8.9	7.7	8.7	1.6
2028 (construction and operations)	24	13	18	3.2
2029 (construction and operations)	49	22	31	5.6
2030 (construction and operations)	**57**	26	35	6.3
2031 (construction and operations)	**70**	30	41	7.3
2032 (construction and operations)	**81**	28	48	8.5
Significance Thresholds	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No
VARIANT				
2024 (construction only)	0.4	1.5	0.9	0.2
2025 (construction only)	1.4	2.6	2.5	0.5
2026 (construction only)	4.7	5.5	5.7	1.0
2027 (construction only)	8.9	7.8	8.7	1.6
2028 (construction and operations)	24	15	18	3.3
2029 (construction and operations)	48	24	28	5.1
2030 (construction and operations)	53	27	31	5.6
2031 (construction and operations)	**72**	36	43	7.8
2032 (construction and operations)	**83**	35	50	9.0
Significance Thresholds	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No

SOURCE: Ramboll 2022; see Appendix F

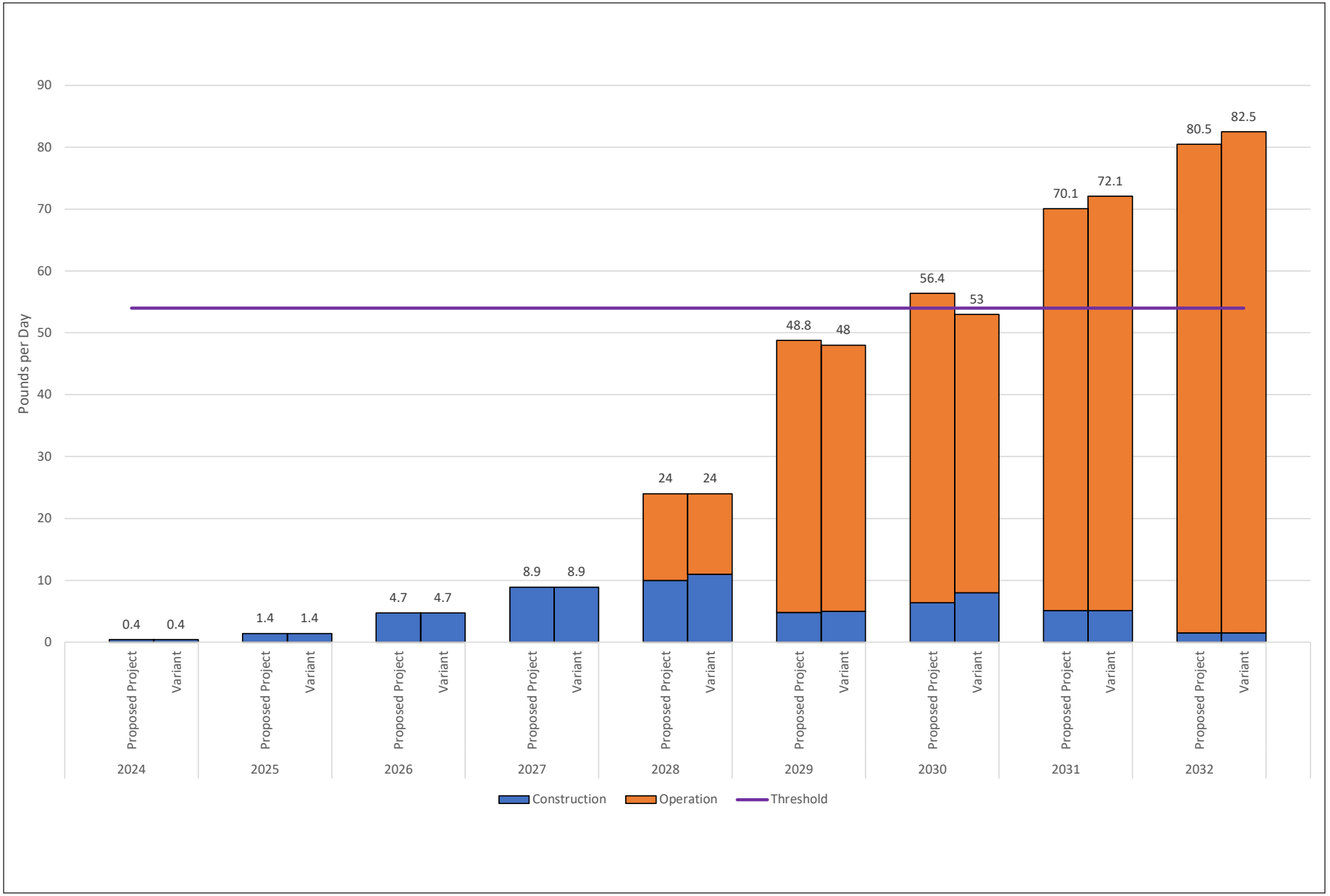
ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NOx = nitrogen oxides; PM = particulate matter

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[c] Net mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the proposed project emissions, as reported in Table 3.D-13, p. 3.D-58.



SOURCE: ESA, 2022

Stonestown Development Project

FIGURE 3.D-3

AVERAGE DAILY MITIGATED CONSTRUCTION AND NET NEW INTERIM OPERATIONAL ROG EMISSIONS (POUNDS/DAY)

impact on regional air quality. Some measures would be much more effective at reducing NOx than ROG. For example, the mitigation measures would reduce NOx emissions in 2024 for the proposed project from 15 pounds per day to 1.5 pounds per day, a 90 percent reduction. By requiring implementation of applicable mitigation measures at the start of construction, the proposed project or variant would implement all feasible mitigation measure to reduce the proposed project or variant's significant and unavoidable contribution to regional ozone concentrations.

See "Health Implications of Significant Impacts Related to Emissions of Ozone Precursors," for further discussion of the health implications from significant ROG emissions.

Impact AQ-2: During operation, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the project region is in nonattainment under an applicable federal, state, or regional ambient air quality standard. ***(Significant and Unavoidable with Mitigation)***

Full buildout of the proposed project or variant is assumed to occur in 2032. Mobile source emissions for the lifetime of the proposed project and variant were calculated using emission factors from year 2032. This results in a conservative analysis because mobile source emissions would decrease over time due to retirement of older, dirtier vehicles and new fuel economy regulations that would become effective in future years.

Table 3.D-10 and **Table 3.D-11**, p. 3.D-54, present the net new operational emissions from the proposed project and variant at full buildout in 2032, when construction would be completed. Emissions include those from mobile sources, consumer product use, architectural coating, landscaping, and emergency generator use. Emissions of PM_{10} and $PM_{2.5}$ in these tables include vehicle exhaust and fugitive sources including re-suspended road dust, brake wear, and tire wear.

The emissions shown in these tables under "Existing Emissions (2028)" were subtracted from the full buildout emissions to reflect the emissions that would cease when some of the existing buildings are removed as part of the proposed project or variant. The "existing conditions" emissions that would be subtracted under the variant are greater than the proposed project as the Authentic Church would be removed.

As shown in Table 3.D-10 and Table 3.D-11, operational full buildout ROG emissions in 2032 would exceed the daily and annual significance thresholds for the proposed project and variant, resulting in a significant impact. During full buildout operations in 2032, consumer product use would generate the majority of ROG emissions (50 percent), followed by mobile sources (23 percent), landscaping (14 percent), and architectural coating (12 percent). As a conservative assumption, emissions from landscaping equipment did not account for the recently passed ban on sales of new fossil fuel-powered landscaping equipment.

The following analysis provides context for the intensity of the proposed project's significant ROG emissions. The air district's 2017 CEQA Air Quality Guidelines include screening tables for projects that are not likely to exceed the operational significance threshold of 54 pounds per day or 10 tons per year of ROG.[233] According to the air district's CEQA Guidelines, if a project meets these screening criteria, the project would not generate operational-related criteria air pollutants and/or precursors that exceed the thresholds of significance. A project that meets the screening criteria does not require a detailed air quality assessment to determine

[233] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, Table 3-1, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed July 15, 2022.

Table 3.D-10 Net New Operational Emissions for the Proposed Project at Buildout

Emissions Source	Criteria Pollutant Emissions[a]							
	Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS [c]								
Architectural Coating	<0.1	0	0	0	0.4	0	0	0
Consumer Products	0.3	0	0	0	1.8	0	0	0
Landscaping	<0.1	0	0	0	0.2	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Total Existing Emissions	*0.4*	*<0.1*	*<0.1*	*<0.1*	*2.4*	*0.1*	*<0.1*	*<0.1*
FULL BUILDOUT PROPOSED PROJECT EMISSIONS (2032)								
Architectural Coating	2.5	0	0	0	14	0	0	0
Consumer Products	11	0	0	0	58	0	0	0
Landscaping	2.9	0.2	<0.1	<0.1	16	1.2	0.1	0.1
Mobile	4.8	5.3	9.8	1.7	26	29	54	9.4
Emergency Generators	0.1	1.4	<0.1	<0.1	0.6	7.9	0.3	0.3
Total Project Emissions	***21***	*7.0*	*10*	*1.8*	***114***	*38*	*54*	*10*
NET NEW PROPOSED PROJECT EMISSIONS (2032)[d]								
Net New Project Emissions	***20***	*7.0*	*10*	*1.8*	***111***	*38*	*54*	*10*
Significance Thresholds	10	10	15	10	54	54	82	54
Exceeds Thresholds?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NOx = nitrogen oxides; PM = particulate matter

Bold values = threshold exceedance

NOTES:

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[c] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use types provided by the project sponsor and CalEEMod defaults.
[d] Net new emissions were calculated as the difference between full buildout emissions and existing condition emissions.

Table 3.D-11 Net New Operational Emissions for the Variant at Buildout

Emissions Source	Criteria Pollutant Emissions[a]							
	Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISITING CONDITIONS [c]								
Architectural Coating	0.1	0	0	0	0.5	0	0	0
Consumer Products	0.4	0	0	0	2.2	0	0	0
Landscaping	<0.1	0	0	0	0.3	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*
FULL BUILDOUT VARIANT EMISSION (2032)								
Architectural Coating	2.6	0	0	0	14	0	0	0
Consumer Products	11	0	0	0	59	0	0	0
Landscaping	3.0	0.2	<0.1	<0.1	16	1.3	0.1	0.1
Mobile	4.9	5.5	10.2	1.8	27	30	56	9.7
Emergency Generators	0.1	1.4	<0.1	<0.1	0.6	7.9	0.3	0.3
Total Variant Emissions	***21***	*7*	*10*	*1.8*	***117***	*39*	*56*	*10*
NET NEW VARIANT EMISSIONS (2032) [d]								
Net New Variant Emissions	***21***	*7.1*	*10*	*1.8*	***114***	*39*	*56*	*10*
Significance Threshold	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NOx = nitrogen oxides; PM = particulate matter

Bold values = threshold exceedance

NOTES:

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[c] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use types provided by the project sponsor and CalEEMod defaults
[d] Net new emissions were calculated as the difference between full buildout variant emissions and existing condition emissions.

whether criteria air pollutant emissions would exceed significance thresholds. The CEQA Air Quality Guidelines note that the screening levels are generally representative of new development on greenfield[234] sites without any form of mitigation measures taken into consideration. The proposed project and variant's ROG emissions were compared to these screening levels using an emissions efficiency metric. A ROG efficiency metric per dwelling unit or per thousand square feet of building floor space was estimated by taking the ROG threshold of significance (54 lb/day) and dividing by the screening value size for the land use

[234] A greenfield site refers to agricultural or forest land or an undeveloped site earmarked for commercial, residential, or industrial projects.

type representative of the proposed project. The result is an emission rate per dwelling unit for residential uses or per thousand square feet for non-residential uses, that could be considered less than significant. For example, 54 lb/day divided by 494 dwelling units (the screening-level size for mid-rise apartments) equals 0.109 lb/day/dwelling unit. A per-thousand square foot ROG emissions rate is derived similarly for non-residential uses' screening sizes.

The per-dwelling unit or per-thousand square foot ROG efficiency metric are compared to the proposed project and variant's total ROG emissions, on a per-dwelling unit or per-thousand square foot basis for all land use types (**Table 3.D-12**). The proposed project and variant's emission rates were estimated using the total proposed project ROG emissions from all land uses (111 lb/day) and dividing by the total number of dwelling units and the total square footage. In all cases, the proposed project and variant's emission rates per dwelling unit are much lower than the comparable emission rate derived from the air district screening tables. For example, the proposed project and variant's ROG emissions rate for residential units is 65 percent lower than the screening-level emission rate calculated based on the air district's guidelines. This indicates that on a per-unit and per-square foot basis, the proposed project or variant is more emission-efficient for ROG than those projects considered less than significant by the air district.

Table 3.D-12 ROG Emission Rate for Proposed Project and Variant Compared to Air District Screening Table Emissions Rate

	Residential ROG Emission Rate (pounds per day per DU)
Air District Screening Table	0.109
Proposed Project Total	0.038
Variant Total	0.037

SOURCE: Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, Table 3-1, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed September 26, 2022

ABBREVIATIONS:

DU = dwelling unit; ksf = thousand square feet; ROG – reactive organic gases

NOTES:

[a] The residential category used to derive these values is mid-rise apartments.

HEALTH IMPLICATIONS OF SIGNIFICANT IMPACTS RELATED TO EMISSIONS OF OZONE PRECURSORS

As discussed above under Ambient Air Quality – Criteria Air Pollutants, p. 3.D-2, air quality standards have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety, and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. As explained by the air board, "An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment."[235] That is, if a region is compliant with the ambient air quality standards, its regional air

[235] California Air Resources Board (CARB), California Ambient Air Quality Standards (CA AQS), https://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm, accessed September 29, 2022.

quality can be considered protective of public health. The national air quality standards are statutorily required to be set by the U.S. EPA at levels that are "requisite to protect the public health."[236]

Also as discussed above, the U.S. EPA developed the Air Quality Index scale to make the public health impacts of air pollution concentrations easily understandable. Table 3.D-3, p. 3.D-9, shows the Air Quality Index results for the air basin between 2017 and 2021. As shown there, the air basin has averaged between 8 and 34 days per year that are considered unhealthy for sensitive groups (orange) and had 35 unhealthy (red) days in the last 5 years for which data are available. In addition, there were 3 days designated as very unhealthy (purple) during the October 2017 wildfires, 5 days during the November 2018 wildfires north of San Francisco, and 1 day during the August/September 2020 wildfires that occurred throughout the bay area. On unhealthy days, persons are recommended to avoid both prolonged and heavy-exertion outdoor activities.

ROG and NO_X are ozone precursors, and the main health concern of exposure to ground-level ozone is effects on the respiratory system, especially on lung function. However, several factors, such as age, lung function, and body mass index,[237] influence these health impacts.

Ozone is a regional pollutant. Meteorology, the presence of sunlight, seasonal impacts, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone.[238] Health effects from ozone concentrations are typically evaluated using regional models that include emissions sources from the entire region (i.e., the air basin) and are designed to determine regional, population-wide health impacts. The impacts of a single project on the population of the overall region tend to be small, particularly with emissions exceeding thresholds at the level of the proposed project or variant. Due to the assumptions about population, meteorology, location of emissions, photochemical atmospheric reactions, and the magnitude of the resulting human health effects, modeling will yield results with compounding uncertainties.[239,240] Consequently, given these current modeling limitations, connecting the proposed project or variant's exceedances of ROG emissions to increases in ozone concentrations to accurately determine specific human health effects related to increases in ozone concentrations would not be meaningful for the quantity of ROG and NOx emissions generated by the proposed project or variant.

Nevertheless, the proposed project or variant's ROG emissions that exceed thresholds could contribute to new or exacerbated air quality violations in the air basin by contributing to more days of ozone exceedance or result in air quality index values that are unhealthy for sensitive groups and other populations. Ozone precursors from consumer products and mobile sources would occur at the project site and on local roadways close to residential populations.

---

[236] 42 *U.S. Code* chapter 7409, National primary and secondary ambient air quality standards, https://www.law.cornell.edu/uscode/text/42/7409, accessed September 29, 2022.
[237] U.S. EPA, Health Effects of Ozone in the General Population, https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population#response, accessed November 4, 2022.
[238] California Air Resources Board (CARB), Ozone and Health, https://ww2.arb.ca.gov/resources/ozone-and-health, accessed September 29, 2022.
[239] U.S. EPA, BenMAP Community Edition, v1.5.0.4, 2020, https://www.epa.gov/benmap/benmap-community-edition.
[240] U.S. EPA, Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Health and Environmental Impacts Division, Research Triangle Park, NC, EPA 452/R-22-004, May 2022, https://www.epa.gov/system/files/documents/2022-05/Final%20Policy%20Assessment%20for%20the%20Reconsideration%20of%20the%20PM%20NAAQS_May2022_0.pdf.

MITIGATION MEASURES

To address ROG emissions that would exceed significance thresholds during operations of the proposed project and variant, the following mitigation measures have been identified.

Mitigation Measure M-AQ-1d: Super-Compliant VOC Architectural Coatings during Operation (see Impact AQ-1, above)

Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators (see Impact AQ-1, above)

Mitigation Measure M-AQ-1f: Promote Use of Green Consumer Products (see Impact AQ-1, above)

Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction (see Impact AQ-1, above)

Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure (see Impact AQ-1, above)

Mitigation Measure M-AQ-1i: Electric Landscaping Equipment (see Impact AQ-1, above)

Mitigation Measure M-AQ-1j: Offset Remaining ROG Emissions (see Impact AQ-1, above)

Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips (see Impact AQ-1, above)

See Impact AQ-1, above, for the full text of the mitigation measure and a discussion of the methods used to evaluate the effectiveness of these measures. **Table 3.D-13** and **Table 3.D-14**, p. 3.D-59, present net new operational emissions with Mitigation Measures M-AQ-1d through M-AQ-1j and M-TR-4a incorporated (for those measures that can be reasonably quantified) from the proposed project and variant during full buildout in 2032.

SIGNIFICANCE AFTER MITIGATION

With implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a, as outlined above in impact AQ-1, ROG emissions from operations would be reduced but not below the significance threshold at full buildout. As such, Mitigation Measure M-AQ-1j would require the project sponsor to implement emission offsets to reduce ROG emissions below the significance threshold. However, implementation of the emissions offset project(s) could be conducted by a third party and would be outside the jurisdiction and control of the City and not fully within the control of the project sponsor, and may not be sufficiently concurrent with proposed project or variant emissions in excess of the significance threshold, and no specific ROG emission reduction project has been identified. Therefore, the impact with respect to criteria air pollutants would be ***significant and unavoidable with mitigation***.

Table 3.D-13 Net New Mitigated Operational Emissions for the Proposed Project at Buildout

Emissions Source or Year	Criteria Air Pollutant Emissions[a] (tons/year) ROG	NO_X	PM_{10}	$PM_{2.5}$	(pounds/day)[b] ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS [c]								
Architectural Coating	<0.1	0	0	0	0.4	0	0	0
Consumer Products	0.3	0	0	0	1.8	0	0	0
Landscaping	<0.1	0	0	0	0.2	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Total Existing Emissions	*0.4*	*<0.1*	*<0.1*	*<0.1*	*2.4*	*0.1*	*<0.1*	*<0.1*
MITIGATED FULL BUILDOUT PROPOSED PROJECT EMISSIONS (2032)								
Architectural Coating	0.3	0	0	0	2	0	0	0
Consumer Products	11	0	0	0	58	0	0	0
Landscaping	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	4.3	4.8	8.8	1.5	24	26	48	8.4
Emergency Generators	<0.1	0.2	<0.1	<0.1	<0.1	1	<0.1	<0.1
Total Mitigated Project Emissions	*15*	*5.0*	*8.8*	*1.5*	*83*	*27*	*48*	*8.5*
MITIGATED NET NEW PROPOSED PROJECT EMISSIONS (2032) [d]								
Net New Mitigated Project Emissions	***15***	*4.9*	*8.8*	*1.5*	***81***	*27*	*48*	*8.5*
Significance Threshold	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCES: Ramboll 2022; see Appendix F

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NO_X = nitrogen oxides

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[c] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use type and energy use rates provided by the Project Applicant.
[d] Net new emissions were calculated as the difference between partial buildout emissions for each year and existing condition emissions.

Table 3.D-14 Net New Mitigated Operational Emissions for the Variant at Buildout

Emissions Source or Year	Criteria Air Pollutant Emissions[a] (tons/year) ROG	NO_X	PM_{10}	$PM_{2.5}$	(pounds/day)[b] ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS [c]								
Architectural Coating	<0.1	0	0	0	0.5	0	0	0
Consumer Products	0.4	0	0	0	2.2	0	0	0
Landscaping	<0.1	0	0	0	0.3	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*
MITIGATED FULL BUILDOUT VARIANT EMISSIONS (2032)								
Architectural Coating	0.3	0	0	0	2	0	0	0
Consumer Products	11	0	0	0	59	0	0	0
Landscaping	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	4.4	4.9	9.1	1.6	24	27	50	8.7
Emergency Generators	0.1	1.4	<0.1	<0.1	0.6	7.9	0.3	0.3
Total Mitigated Variant Emissions	*16*	*6.4*	*9.2*	*1.6*	*86*	*35*	*50*	*9.0*
MITIGATED NET NEW VARIANT EMISSIONS (2032) [D]								
Net New Mitigated Variant Emissions	***15***	*6.3*	*9.2*	*1.6*	***83***	*35*	*50*	*9.0*
Significance Threshold	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NO_X = nitrogen oxides

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[c] Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use type and energy use rates provided by the Project Applicant.
[d] Net new emissions were calculated as the difference between partial buildout emissions for each year and existing condition emissions.

COMMUNITY RISK AND HAZARD IMPACTS

Impact AQ-3: The proposed project or variant would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial pollutant concentrations. ***(Less than Significant with Mitigation)***

Site preparation activities such as demolition, excavation, grading, foundation construction, and other ground-disturbing construction activity; would affect localized air quality during the construction phases of the proposed project or variant. Short-term emissions from construction equipment during these site preparation activities would include directly emitted $PM_{2.5}$ and TACs such as DPM. Additionally, the long-term operational emissions from the project's stationary sources would include $PM_{2.5}$ and TACs. The generation of these short- and long-term emissions could expose sensitive receptors to substantial pollutant concentrations of TACs, resulting in a localized health risk. Therefore, a health risk assessment was conducted for the proposed project and variant to identify maximum health risks to offsite and onsite sensitive receptors from construction and operational emissions of DPM and $PM_{2.5}$. For operations, only TAC emissions from emergency generators were included in the health risk assessment.

Health risks from vehicle emissions were not modeled in the HRA but estimated using the air district's Roadway Screening Analysis Calculator.[241] Lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations were estimated using this air district tool.

The health risk assessment evaluated excess lifetime cancer risk and annual average $PM_{2.5}$ concentrations at on-site and off-site sensitive receptors that would be exposed to emissions from construction and operation of the proposed project or variant. The chronic HI was also evaluated. All sensitive receptors within 1,000 meters of the project site were evaluated in the health risk assessment, and the MEI is reported below. The existing sensitive receptors near the project site are shown above in Figure 3.D-1, p. 3.D-14.

For construction, TAC emissions and exposure to sensitive receptors would vary across the eight-year construction period (Phases 1 through 6). Initially, existing sensitive receptors would be exposed only to construction emissions. When construction of Phase 1 would be complete and the proposed project or variant would be partially operational, existing sensitive receptors would be exposed to TAC emissions from construction of Phase 2 through Phase 6 in addition to operational TAC emissions from Phase 1.

As each phase of the proposed project or variant would be constructed and becomes operational, existing sensitive receptors would be exposed to a combination of construction and operational TAC emissions (emergency generators and vehicle emissions). Once Phase 6 construction would be complete, existing sensitive receptors would only be exposed to operational TAC emissions (emergency generators and vehicle emissions).

Phase 1 of the proposed project or variant buildout would include new onsite sensitive receptors, and these receptors would be exposed to TAC emissions from construction of Phase 2 through Phase 6 plus operational TAC emissions from the Phase 1 emergency generators and vehicle emissions. Each phase of proposed project or variant buildout would introduce new sensitive receptors that would be exposed to emissions from the remaining phases of construction plus operational emissions from the completed phases. The

[241] The Roadway Screening Analysis Calculator is an older tool developed by BAAQMD to estimate screening level health impacts from roadways. This calculator is out of date since it uses emissions estimates that have been superseded and assumes fleet emission factors from 2014. Since the development of this tool, emissions from vehicles have been reduced due to regulations and increased penetration of electric vehicles. Therefore, this estimate of approximate health impacts from the Project traffic is conservative (i.e., overpredicts impacts).

proposed project or variant would include new daycare uses, however at this time the daycare location is not yet determined. Therefore, to cover all potential locations for new onsite daycares and residents, all new onsite daycare and resident receptors in the proposed project and variant parcels were modeled as two receptor types: (1) resident children in the 3rd-trimester-to-16-year age range plus adults in the 16-to-30-year age range; and (2) daycare children in the six-week-to-9-year age range. Workers near proposed project improvements (e.g., workers at Stonestown Galleria) are also analyzed in this analysis.

A scaling factor was applied to the health risk exposure parameters for each age bin (fetus, child, and adult) and receptor type (day care, school, residence, workplace) to represent the length of time each receptor would be exposed to the construction and operational emissions.

CONSTRUCTION SOURCES

Sources of DPM and $PM_{2.5}$ from construction activities include off-road equipment and on-road medium- and heavy-duty vendor and haul trucks carrying soil, demolition material, construction materials, and concrete. Fugitive dust PM emissions would also occur from construction activities, including demolition, hauling, and ground-disturbing activities. These PM emissions were included in the health risk $PM_{2.5}$ concentration analysis.

EMERGENCY BACKUP GENERATORS

The 12 proposed diesel-fueled emergency backup generators would be sources of operational TAC emissions. Generators greater than 1,000 hp were assumed to meet the air district BACT requirement of a Tier 4 Final-compliant engine, while generators smaller than 1,000 hp were assumed to meet the BACT requirement for a Tier 2-compliant engine.[242]

MOBILE SOURCES

According to the traffic analysis, the proposed project or variant would not add 5,000 vehicles per day to any roadway. As discussed in Approach to Analysis, p. 3.D-23, the air district recommends a traffic screening criterion of 10,000 vehicles per day for lifetime cancer risk exposure analyses; this value was scaled to 5,000 vehicles per day to represent the more stringent cancer risk exposure methods in the latest OEHHA Guidance.[243] The proposed project or variant would add these maximum daily trips to nearby roadways:

- Buckingham Way, from Winston Drive to 19th Avenue = 4,100 vehicles per day
- Ocean Avenue, from 19th Avenue to Westgate Drive = 3,245 vehicles per day

Because the maximum daily trips on all roadway segments would be less than 5,000 for both construction worker commutes and operational on-road vehicle travel, construction worker trips and operational traffic were not included in the dispersion modeling. Nevertheless, a screening-level assessment of potential health risk impacts from operational traffic was conducted. The air district developed health risk values associated with major roadways in the air basin. Health risk estimates for roads with daily vehicle trip amounts similar to those for the proposed project and variant were obtained for the proposed project and variant MEI

[242] Bay Area Air Quality Management District, BACT/TBACT Workbook, https://www.baaqmd.gov/permits/permitting-manuals/bact-tbact-workbook, accessed August 26, 2022.
[243] Bay Area Air Quality Management District, *Recommended Methods for Screening and Modeling Local Risks and Hazards*, May 2011, Table 14, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx?la=en, accessed September 29, 2022.

locations to provide an estimate of the health risk contribution from on-road vehicle traffic. These estimates are included in the health risk impacts presented below.

HEALTH RISK RESULTS

The modeled health risk (lifetime excess cancer risk and annual average $PM_{2.5}$ concentration) are summarized in **Table 3.D-15** and **Table 3.D-16**, p. 3.D-64. Table 3.D-15 presents the lifetime excess cancer risk results for the existing offsite MEI residential receptor, daycare receptor, school receptor, and worker receptor. Table 3.D-16 presents the annual average $PM_{2.5}$ concentrations for the existing offsite MEI residential receptor, daycare receptor, school receptor, and worker receptor. These are the existing offsite receptors that would be exposed to TAC emissions at the beginning of construction of the proposed project or variant from all phases of construction and operation.[244]

Table 3.D-15 and Table 3.D-16 also present the lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations at the new onsite residential and daycare MEI. These are the new receptors that are part of the proposed project or variant's development, as phase-by-phase buildout progresses. These onsite receptors would be exposed to both construction and operational emissions. These MEIs are co-located because the exact location of the daycares is currently unknown. All new onsite receptors were modeled using both resident child and daycare child exposure parameters for phases that may include the daycare.

The results in these tables also show the existing health risks at the MEI locations that were modeled as part of the 2020 Citywide HRA to show if the MEI locations meet the APEZ criteria.

As discussed in Local Health Risks and Hazards, p. 3.D-30, the significance threshold for the contribution of the proposed project or variant depends on whether each MEI meets the APEZ criteria or if the project's contribution would result in the receptor meeting the APEZ criteria. For receptor locations already meeting the APEZ criteria without the proposed project or variant, a significant impact would occur if the project's contribution would result in annual average $PM_{2.5}$ concentration at or above 0.2 $\mu g/m^3$ or result in an excess cancer risk at or greater than 7.0 per 1 million. If the proposed project or variant would result in sensitive receptor locations meeting the APEZ criteria that otherwise would not without the proposed project or variant, a significant health risk impact would occur if the project's contribution would result in annual average $PM_{2.5}$ concentration at or above 0.3 $\mu g/m^3$ or if the project would result in a lifetime excess cancer risk at or greater than 10.0 per 1 million. As discussed in Section 3.D.2, Environmental Setting, p. 3.D-1, the APEZ criteria for this location are: (1) lifetime excess cancer risk greater than 100 per one million population; or (2) cumulative annual average $PM_{2.5}$ concentrations greater than 10 $\mu g/m^3$.

Offsite Receptors

The following section presents health risk results for existing offsite receptors. Table 3.D-15 and Table 3.D-16 present the health risk and annual average $PM_{2.5}$ concentrations, respectively, for the proposed project and variant.

[244] The worker MEI is a Stonestown Galleria worker. For purposes of this analysis, Stonestown Galleria workers are considered offsite workers; although the Stonestown Galleria is included in the 40-acre project area, the Stonestown Galleria workers are not located on the 27 acres where active construction would take place.

Table 3.D-15 Lifetime Excess Cancer Risk for the Proposed Project and Variant

Emissions Source	Lifetime Excess Cancer Risk (chances per 1 million)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
PROPOSED PROJECT						
Receptor Coordinates (UTM X, UTM Y)	(546300, 4176000)	(546240, 4176040)	(546320, 4175960)	(546020, 4175620)	(546240, 4175980)	(546240, 4175980)
Existing Lifetime Excess Cancer Risk (2020)	125	86	94	27	91	91
Meets APEZ Criteria?	Yes	No	No	No	No	No
Proposed Project Cancer Risk	**23.9**	6.3	**13.0**	5.1	**18.3**	**13.9**
Exposure Scenario[a]	S3	S3	S2	S1	S12	S12
Existing + Proposed Project Cancer Risk[b]	149	92	107	32	109	105
Meets APEZ Criteria with Proposed Project Contribution?	Yes	No	Yes	No	Yes	Yes
THRESHOLDS FOR PROJECT CONTRIBUTION [c]						
Significance Threshold	7	10	10	10	10	10
Threshold Exceeded?	**Yes**	No	**Yes**	No	**Yes**	**Yes**
VARIANT						
Receptor Coordinates (UTM X, UTM Y)	(546300, 4176000)	(546240, 4176040)	(546320, 4175960)	(546020, 4175620)	(546240, 4175980)	(546240, 4175980)
Existing Lifetime Excess Cancer Risk (2020)	125	86	94	27	91	91
Meets APEZ Criteria?	Yes	No	No	No	No	No
Variant Cancer Risk	**24.4**	6.4	**13.2**	5.1	**18.3**	**13.9**
Exposure Scenario[a]	S3	S3	S3	S1	S12	S12
Existing + Variant Cancer Risk[b]	149	92	107	32	109	105
Meets APEZ Criteria with Variant Contribution?	Yes	No	Yes	No	Yes	Yes
THRESHOLDS FOR VARIANT CONTRIBUTION [c]						
Significance Threshold	7	10	10	10	10	10
Threshold Exceeded?	**Yes**	No	**Yes**	No	**Yes**	**Yes**

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance; MEI = maximally exposed individual; S1 = Scenario 1; S2 = Scenario 2; S3 = Scenario 3; S12 = Scenario 12.

NOTES:

Bold values = threshold exceedance

[a] S1 = Scenario 1: exposure to construction beginning at the start of construction plus exposure to operation after construction is completed. S2 = Scenario 2: exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed. S3 = Scenario 3: exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed; S12 = Scenario 12: exposure to full buildout operations once construction is complete.

[b] Existing + Proposed Project and Existing + Variant Total risk may not appear to add due to rounding.

[c] These thresholds only apply if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

Table 3.D-16 Annual Average $PM_{2.5}$ Concentrations for the Proposed Project and Variant

Emissions Source	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
PROPOSED PROJECT						
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing Annual Average $PM_{2.5}$ Concentration (2020)	8.2	9.1	9.5	8.3	8.3	8.2
Meets APEZ Criteria?	No	No	No	No	No	No
Proposed Project Annual Average $PM_{2.5}$ Concentration	0.33	0.29	0.20	0.59	0.28	0.15
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7
Existing + Proposed Project Annual Average $PM_{2.5}$ concentration[b]	8.6	9.4	9.7	8.8	8.6	8.4
Meets APEZ Criteria with Proposed Project Contribution?	No	No	No	No	No	No
THRESHOLDS FOR PROJECT CONTRIBUTION[c]						
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No[c]	No	No	No[c]	No	No
VARIANT						
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing $PM_{2.5}$ concentration (2020)	8.2	9.1	9.5	8.3	8.3	8.2
Meets APEZ Criteria?	No	No	No	No	No	No
Variant $PM_{2.5}$ concentration	0.33	0.29	0.20	0.59	0.28	0.15
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7
Existing + Variant Annual Average $PM_{2.5}$ concentration[b]	8.6	9.4	9.7	8.8	8.6	8.4
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No
THRESHOLDS FOR VARIANT CONTRIBUTION[c]						
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No[c]	No	No	No[c]	No	No

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

$PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance; MEI = maximally exposed individual; S1 = Scenario 1; S7 = Scenario 7; S8 = Scenario 8.

NOTES:

[a] S1 = Scenario 1: exposure to construction beginning at the start of construction plus exposure to operation after construction is completed. S7 = Scenario 7: Phase 1 occupants: exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to

Emissions Source	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare

operation of completed phases. S8 = Scenario 8: Phase 2 occupants: exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases.

b Existing + Proposed Project and Existing + Variant Total $PM_{2.5}$ concentration may not appear to add due to rounding.

c These thresholds only apply if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

Lifetime Excess Cancer Risk

For the offsite residential MEI, the proposed project or variant would increase the lifetime excess cancer risk by 23.9 per 1 million and 24.4 per 1 million, respectively. Because this receptor currently meets the APEZ criteria with a background cancer risk of 125 per 1 million, the threshold of 7.0 per 1 million applies. Because the contribution from the proposed project or variant would exceed the threshold, this would be a significant impact.

For the offsite school MEI, the proposed project or variant would increase the lifetime excess cancer risk by 13.0 per 1 million and 13.2 per 1 million, respectively. This receptor does not currently meet the APEZ criteria with a background cancer risk of 94 per 1 million. Because the contribution from the proposed project or variant would cause this receptor to meet the APEZ criteria with a total cancer risk of 105 per 1 million and 107 per 1 million, respectively, the threshold of 10.0 per 1 million applies. Because the contribution from the proposed project or variant would exceed the threshold, this would be a significant impact.

The offsite daycare and worker MEIs do not currently meet the APEZ lifetime excess cancer risk criteria. Contributions from the proposed project or variant would not cause these MEI receptors to meet the APEZ criteria. This would be a less than significant impact.

Note that the impact at all other offsite receptors would be lower than those reported for the offsite resident, daycare, school, and worker MEIs, because these represent the maximum values.

Annual Average $PM_{2.5}$ Concentrations

As shown in Table 3.D-16, p. 3.D-64, the offsite residential, daycare, school, and worker MEIs do not meet the APEZ annual average $PM_{2.5}$ concentration criteria. Contributions from the proposed project or variant would not cause these MEI receptors to meet the APEZ criteria. This would be a less than significant impact. Note that the impact at all other offsite receptors would be lower than those reported for the offsite resident, daycare, school, and worker MEIs because these represent the maximum values.

Onsite Receptors

The following section presents health risk results at the new onsite residential and daycare MEIs. Table 3.D-15 and Table 3.D-16, pp. 3.D-63 and 3.D-64, present the lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations, respectively, for the proposed project and variant.

Lifetime Excess Cancer Risk

For the onsite residential MEI, the proposed project or variant would increase the lifetime excess cancer risk by 18.3 per 1 million. This receptor does not currently meet the APEZ criteria with a background cancer risk

of 91 per 1 million. Because the contribution from the proposed project or variant would cause this sensitive receptor to meet the APEZ criteria with a total cancer risk of 109 per 1 million, the threshold of 10.0 per 1 million applies. Because the contribution from the proposed project or variant would exceed the threshold, this would be a significant impact.

For the onsite daycare MEI, the proposed project or variant would increase the lifetime excess cancer risk by 13.9 per 1 million. This receptor does not currently meet the APEZ criteria with a background cancer risk of 91 per 1 million. Because the contribution from the proposed project or variant would cause this receptor to meet the APEZ criteria with a total cancer risk of 105 per 1 million, the threshold of 10.0 per 1 million applies. Because the contribution from the proposed project or variant would exceed the threshold, this would be a significant impact.

Note that the impact at all other receptors would be lower than those reported for the onsite resident and daycare MEIs because these represent the maximum values.

Annual Average $PM_{2.5}$ Concentrations

As shown in Table 3.D-16, p. 3.D-64, the onsite residential and daycare MEIs do not meet the APEZ annual average $PM_{2.5}$ concentration criteria. Contributions from the proposed project or variant would not cause these MEI receptors to meet APEZ criteria. This would be a less than significant impact. Note that the impact at all other receptors would be lower than those reported for the onsite resident and daycare MEIs because these represent the maximum values.

Non-Cancer Chronic HI

As shown in Appendix F Tables 40a and 44a, the proposed project would increase the non-cancer chronic HI by 0.013 at the offsite resident and offsite daycare MEIs, by 0.009 at the offsite school MEI, and by 0.022 at the offsite worker MEI. The proposed project would increase the chronic HI by 0.0097 at the onsite resident MEI and by 0.0043 at the onsite daycare MEI. As shown in Appendix F Tables 41a and 45a, the variant would increase the chronic HI by 0.013 at the offsite resident and offsite daycare MEIs, by 0.012 at the offsite school MEI, and by 0.02 at the offsite worker MEI. The variant would increase the chronic HI by 0.0085 at the onsite resident MEI and by 0.0039 at the onsite daycare MEI. These values are all below the chronic HI significance threshold of 1. This would be a less than significant impact. Note that the impact at all other offsite and onsite receptors would be lower than those reported above because these represent the maximum values.

MITIGATION MEASURES

As shown in tables **Table 3.D-15** and **Table 3.D-16**, the proposed project would result in a significant health risk impact. Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i and M-TR-4a are required. Mitigation Measures M-AQ-1a and M-AQ-1c would apply during all construction phases. Mitigation Measure M-AQ-1e would apply to any new stationary emergency generator. Mitigation measures M-AQ-1g, M-AQ-1h, and MAQ-1i would apply during project operations. Although these measures are required to reduce ROG emissions as discussed under Impact AQ-1, they are also required to reduce lifetime excess cancer risks from construction and operation of the proposed project and variant.

Mitigation Measure M-AQ-1a: Clean Off-Road Construction Equipment (see Impact AQ-1)

Mitigation Measure M-AQ-1c: Clean On-Road Construction Trucks (see Impact AQ-1)

Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators (see Impact AQ-1)

Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction (see Impact AQ-1)

Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure (see Impact AQ-1)

Mitigation Measure M-AQ-1i: Electric Landscaping Equipment (see Impact AQ-1)

Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips (see Impact AQ-1)

The effectiveness of the above mitigation measures was evaluated. See Appendix F for detailed methodology of the quantification methods, which are summarized below.

Mitigation Measure M-AQ-1a would reduce TAC emissions associated with off-road construction equipment by requiring U.S. EPA Tier 4 Final and electric engines (except where demonstrated to be infeasible to the satisfaction of the City). Tier 4 Final off-road engines emit approximately 71 percent less DPM and exhaust $PM_{2.5}$ than default fleet construction equipment.

Mitigation Measure M-AQ-1c would reduce DPM emissions and associated cancer risks from on-road heavy-duty construction trucks by requiring that all heavy-duty trucks have model year 2018 or newer engines.

Mitigation Measure M-AQ-1e would reduce DPM emissions and associated cancer risks from diesel emergency generator operations by requiring all generators to meet U.S. EPA Tier 4 engine emission standards.

Mitigation Measure M-AQ-1g would reduce DPM emissions and associated cancer risks from truck exhaust during operational activities by requiring advanced exhaust technology, Tier 4 emission standards for TRUs, the use of electrical hookups to replace TRU operations, and idling limitations. However, due to the lack of information about future tenants and truck activity at the project site, DPM emissions and cancer risk reductions were not quantified for this measure.

Mitigation Measure M-AQ-1g would reduce DPM emissions and associated cancer risks from light-duty vehicles by building additional EV charging stations, which would encourage the use of EVs and thereby reduce gasoline and diesel vehicle travel. However, DPM emissions and cancer risk reductions for this measure were not quantified.

Mitigation Measure M-AQ-1i would reduce TAC emissions and associated cancer risks from landscaping equipment by requiring all landscaping equipment to be powered by electricity, which would reduce gasoline and diesel fuel use. However, TAC emissions and cancer risk reductions for this measure were not quantified.

Mitigation Measure M-TR-4a would reduce DPM emissions and associated cancer risks from light-duty vehicles by reducing vehicle trips and VMT by about 10 percent compared to unmitigated conditions.

Mitigated health risks (lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations) are summarized in **Table 3.D-17** and **Table 3.D-18**, p. 3.D-69. Table 3.D-17 presents the mitigated lifetime excess cancer risk results for the existing offsite MEI residential receptor, daycare receptor, school receptor, and worker receptor. Table 3.D-18 presents the annual average $PM_{2.5}$ concentrations for the existing offsite MEI

residential receptor, daycare receptor, school receptor, and worker receptor. Table 3.D-17 and Table 3.D-18 also present the mitigated lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for the proposed project and variant at the new onsite residential and daycare MEI.

Table 3.D-17 Mitigated Lifetime Excess Cancer Risk for the Proposed Project and Variant

Scenario/Receptor Type	Lifetime Excess Cancer Risk (chances per 1 million)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
PROPOSED PROJECT						
Receptor Location (UTM X, UTM Y)	(546220, 4175500)	(546240, 4176040)	(546320, 4175940)	(546160, 4175600)	(546220, 4175640)	(546220, 4175900)
Existing Lifetime Excess Cancer Risk (2020)	57	86	94	45	71	66
Meets APEZ Criteria?	No	No	No	No	No	No
Proposed Project Cancer Risk	8.9	2.9	4.4	2.9	6.9	3.9
Exposure Scenario[a]	S6	S3	S3	S2	S10	S9
Existing + Proposed Project Cancer Risk[b]	66	89	98	48	78	70
Meets APEZ Criteria with Proposed Project Contribution?	No	No	No	No	No	No
THRESHOLDS FOR PROJECT CONTRIBUTION [C]						
Significance Threshold	10	10	10	10	10	10
Threshold Exceeded?	No	No	No	No	No	No
VARIANT						
Receptor Location (UTM X, UTM Y)	(546220, 4175500)	(546240, 4176040)	(546320, 4175940)	(546160, 4175600)	(546220, 4175640)	(546220, 4175900)
Existing Lifetime Excess Cancer Risk (2020)	57	86	94	45	71	66
Meets APEZ Criteria?	No	No	No	No	No	No
Variant Cancer Risk	8.9	2.9	4.4	2.9	6.2	4.0
Exposure Scenario[a]	S6	S3	S3	S2	S10	S9
Existing + Variant Cancer Risk[b]	66	89	98	48	77	70
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No
THRESHOLDS FOR PROJECT CONTRIBUTION[C]						
Significance Threshold	10	10	10	10	10	10
Threshold Exceeded?	No	No	No	No	No	No

Scenario/Receptor Type	Lifetime Excess Cancer Risk (chances per 1 million)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

$PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; $\mu g/m^3$ = micrograms per cubic meters; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance; MEI = maximally exposed individual; S2 = Scenario 2; S3 = Scenario 3; S6 = Scenario 6; S9 = Scenario9; S10 = Scenario 10.

NOTES:

[a] S2 = Scenario 2: exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed. S3 = Scenario 3: exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed. S6 = Scenario 6: exposure to construction beginning at the start of Phase 6 plus exposure to operation after construction is completed. S9 = Scenario 9: Phase 3 occupants: exposure to subsequent construction beginning after Phase 3 construction is complete plus exposure to operation of completed phases. S10 = Scenario 10: Phase 4 occupants: exposure to subsequent construction beginning after Phase 4 construction is complete plus exposure to operation of completed phases.

[b] Existing + Proposed Project and Existing +Variant Total cancer risk may not appear to add due to rounding.

[c] These thresholds only apply if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

Table 3.D-18 Mitigated Annual Average $PM_{2.5}$ Concentrations for the Proposed Project and Variant

Scenario/Receptor Type	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
PROPOSED PROJECT						
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing Annual Average $PM_{2.5}$ Concentration (2020)	8.2	9.1	9.5	8.3	8.3	8.2
Meets APEZ Criteria?	No	No	No	No	No	No
Proposed Project Annual Average $PM_{2.5}$ Concentration	0.28	0.24	0.17	0.50	0.24	0.14
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7
Existing + Proposed Project Annual Average $PM_{2.5}$ Concentration[b]	8.5	9.3	9.6	8.8	8.5	8.4
APEZ Criteria with Proposed Project Contribution?	No	No	No	No	No	No
THRESHOLDS FOR PROJECT CONTRIBUTION[c]						
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No	No	No	No[c]	No	No

Scenario/Receptor Type	Annual Average $PM_{2.5}$ Concentrations (µg/m^3)					
	Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
VARIANT						
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing Annual Average $PM_{2.5}$ Concentration (2020)	8.3	9.1	9.5	8.3	8.3	8.2
Meets APEZ Criteria?	No	No	No	No	No	No
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7
Variant Annual Average $PM_{2.5}$ Concentration	0.28	0.24	0.17	0.51	0.24	0.14
Existing + Variant Annual Average $PM_{2.5}$ Concentration[b]	8.6	9.3	9.6	8.8	8.5	8.4
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No
THRESHOLDS FOR PROJECT CONTRIBUTION[c]						
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No	No	No	No[c]	No	No

SOURCE: Ramboll 2022; see Appendix F

ABBREVIATIONS:

$PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; µg/m^3 = micrograms per cubic meters; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance; MEI = maximally exposed individual; S1 = Scenario 1; S7 = Scenario 7; S8 = Scenario 8.

NOTES:

[a] S1 = Scenario 1: exposure to construction beginning at the start of construction plus exposure to operation after construction is completed. S7 = Scenario 7: Phase 1 occupants: exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to operation of completed phases. S8 = Scenario 8: Phase 2 occupants: exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases.

[b] Existing + Proposed Project Total risk may not appear to add due to rounding.

[c] These thresholds only apply if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

SIGNIFICANCE AFTER MITIGATION

Offsite Receptors

Lifetime Excess Cancer Risk

With implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the offsite residential MEI is a different location from the unmitigated offsite residential MEI. The mitigated offsite residential MEI does not meet the APEZ cancer risk criteria. The contribution from the proposed project or variant would not cause this receptor to meet the APEZ criteria. Consequently, lifetime excess cancer risk impact to the offsite residential MEI would be ***less than significant with mitigation***.

With implementation of mitigation, the offsite school MEI is also a different location from the unmitigated offsite school MEI. The mitigated offsite school MEI does not meet the APEZ cancer risk criteria. The contribution from the proposed project or variant would not cause this receptor to meet the APEZ criteria. Consequently, lifetime excess cancer risk impact to the offsite school MEI would be ***less than significant with mitigation***.

With implementation of mitigation, the offsite daycare and worker MEIs do not meet the APEZ cancer risk criteria, and the contribution from the proposed project or variant would not cause these receptors to meet the APEZ criteria. Therefore, this impact remains less than significant. Note that the mitigated impact at all other offsite receptors would be lower than those reported for the offsite resident, daycare, school, and worker MEIs, as these represent the maximum values.

Annual Average $PM_{2.5}$ Concentrations

With implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the offsite residential, daycare, school, and worker MEIs do not meet the APEZ annual average $PM_{2.5}$ concentration criteria. Contributions from the proposed project or variant would not cause these MEI receptors to meet the APEZ criteria. This impact remains less than significant. Note that the mitigated impact at all other offsite receptors would be lower than those reported for the offsite resident, daycare, school, and worker MEIs, as these represent the maximum values.

Non-Cancer Chronic HI

As shown in Appendix F Tables 40b, 41b, 44b, and 45b, with implementation of mitigation, contributions from the proposed project or variant at the offsite residential, daycare, school, and worker MEIs are all below the non-cancer chronic HI significance threshold of 1. This impact remains less than significant.

Onsite Receptors

The following section presents mitigated health risk results at the new onsite residential and daycare MEIs. Table 3.D-17 and Table 3.D-18, pp. 3.D-68 and 3.D-69, present mitigated lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations, respectively, for the proposed project and variant.

Lifetime Excess Cancer Risk

With implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the onsite residential MEI is a different location from the unmitigated offsite residential MEI. The mitigated onsite residential MEI would not meet the APEZ cancer risk criteria. The contribution from the proposed project or variant would not cause this receptor to meet the APEZ criteria. Consequently, lifetime excess cancer risk impact to the onsite residential MEI would be ***less than significant with mitigation***.

With implementation of mitigation, the onsite daycare MEI is also a different location from the unmitigated onsite daycare MEI. The mitigated onsite daycare MEI does not meet the APEZ cancer risk criteria. The contribution from the proposed project or variant would not cause this receptor to meet the APEZ criteria. Consequently, lifetime excess cancer risk impact to the onsite daycare MEI would be ***less than significant with mitigation***.

Note that the mitigated impact at all other onsite receptors would be lower than those reported for the onsite resident and daycare MEIs, as these represent the maximum values.

Annual Average $PM_{2.5}$ Concentrations

With implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the onsite residential and daycare MEIs would not meet the APEZ annual average $PM_{2.5}$ concentration criteria. Contributions from the proposed project or variant would not cause either of these receptors to meet the APEZ criteria. This impact remains less than significant impact. Note that the mitigated impact at all other onsite receptors would be lower than those reported for the onsite resident and daycare MEIs, because these represent the maximum values.

Non-Cancer Chronic HI

As shown in Appendix F Tables 40b, 41b, 44b, and 45b, with implementation of mitigation, contributions from the proposed project and variant at the new onsite residential and daycare MEIs are all below the chronic HI significance threshold of 1. This impact remains less than significant.

In summary, Table 3.D-17, p. 3.D-68, shows that for all existing offsite and new onsite MEI receptors, with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the excess lifetime cancer risk would not exceed significance thresholds for the proposed project or variant. In addition, the annual average $PM_{2.5}$ concentrations and chronic Hi do not exceed significance thresholds at any offsite or onsite MEI receptor location for the proposed project or variant. See Appendix F for additional detailed health risk results. Therefore, the impact would be ***less than significant with mitigation***.

OTHER EMISSIONS AND ODORS

Impact AQ-4: The proposed project or variant would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. ***(Less than Significant)***

Existing uses on the project site are not sources of odorous emissions, except for those associated with food preparation at restaurants within the mall. These types of odors are generally minor and not considered offensive. During construction, the various diesel-powered vehicles and equipment would create localized odors while in use. These odors would be temporary and intermittent and are not likely to be noticeable for extended periods of time beyond the boundaries of the project site. Therefore, the potential for diesel odor impacts would be less than significant.

Although there may be some potential for small-scale, localized odor issues to emerge around project sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation, etc., substantial odor sources and consequent effects on onsite and offsite sensitive receptors would be unlikely. Air district regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds and applies to restaurants that employ more than five persons. Therefore, because the proposed project or variant would be required to implement odor controls as required by applicable regulations, odor impacts would be ***less than significant***.

CONSISTENCY WITH THE CLEAN AIR PLAN

Impact AQ-5: The proposed project or variant would conflict with or obstruct implementation of the 2017 Clean Air Plan. ***(Less than Significant with Mitigation)***

The most recently adopted air quality plan for the air basin is the *2017 Clean Air Plan (2017 Clean Air Plan): Spare the Air, Cool the Climate*.[245] The 2017 Clean Air Plan is a road map that demonstrates how the bay area will, in accordance with the requirements of the California Clean Air Act, implement all feasible measures to reduce ozone precursors (ROG and NOx) and reduce the transport of ozone and its precursors to neighboring air basins. It also provides a climate and air pollution control strategy to reduce ozone, PM, TACs, and GHG emissions that builds upon existing regional, state, and national programs.

In determining consistency with the 2017 Clean Air Plan, this analysis considers whether the proposed project or variant would (1) support the primary goals of the 2017 Clean Air Plan, (2) include applicable control measures from the 2017 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2017 Clean Air Plan. The primary goals of the 2017 Clean Air Plan are: to protect air quality and public health at the regional and local scale and protect the climate by reducing regional criteria air pollutant emissions; reducing local air-quality-related health risks (by meeting state and national ambient air quality standards); and reducing GHG emissions (by reducing GHG emissions to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050).[246]

To meet the primary goals, the plan recommends 85 specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. Other measures in the plan not within the air district's regulatory authority may be advisory or are otherwise not specifically applicable to land use projects. These control strategies are grouped into the following categories:

- Stationary source measures
- Transportation control measures
- Energy control measures
- Building control measures
- Agricultural control measures
- Natural and working lands control measures
- Waste management control measures
- Water control measures
- Super GHG control measures

The 2017 Clean Air Plan recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and greenhouse gases from motor vehicles is to channel future Bay Area growth into urban communities where goods and services are close at hand, and people have a range of viable transportation options. Many of these control measures address stationary sources and will be implemented by the air district using its permit authority and therefore are not suited for implementation through local planning efforts or project approval actions. The control measures most applicable to the proposed project are transportation control measures and energy and climate control measures. The proposed project or variant's impact with respect

[245] Bay Area Air Quality Management District, *2017 Clean Air Plan: Spare the Air, Cool the Climate*, April 19, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed September 29, 2022.
[246] The air district's 2030 GHG target is consistent with the California's GHG 2030 reduction target, per Senate Bill 32. The air district's 2050 target is consistent with the state's 2050 GHG reduction target per Executive Order S-3-05.

to GHGs is discussed in initial study Section E.8, Greenhouse Gas Emissions, in Appendix B which demonstrates that the proposed project or variant would not result in a significant GHG impact.

The potentially applicable 16 Clean Air Plan control measures are identified in **Table 3.D-19**, Project Consistency with Applicable Control Measures of the 2017 Clean Air Plan. This table identifies each control strategy and correlates it to specific elements of the proposed project or explains why the strategy does or does not apply to the proposed project.

Examples of a project that could cause the disruption or delay of the 2017 Clean Air Plan control measures are projects that would preclude the extension of a transit line or bike path, or projects that propose excessive parking beyond parking requirements. The proposed project or variant would redevelop an existing parking lot in a walkable, urban area near a concentration of regional and local transit service. It would not add parking beyond the maximum allowed or preclude the extension of a transit line or a bike path or any other transit improvement, and thus would not disrupt or hinder implementation of the 2017 Clean Air Plan's control measures (see Section 3.B, Transportation and Circulation).[247]

As shown in Table 3.D-19, without certain mitigation measures, outlined in this section, incorporated into the project, the project would not include applicable control measures from the 2017 Clean Air Plan. As such, this impact would be significant.

In addition to the measures listed in Table 3.D-19, transportation control measures that are identified in the 2017 Clean Air Plan are also implemented by the general plan and the planning code, which the proposed project or variant must implement (e.g., through the City's Transit First Policy, the bicycle parking requirements, and transit impact development fees). The infill nature of the proposed project or variant and high availability of viable transportation options ensure that residents and employees of the commercial and office uses could bicycle, walk, and ride transit to and from the project site instead of taking trips via private automobile. These features would also reduce substantial growth in automobile trips and vehicle miles traveled, as outlined in draft EIR Section 3.B. Additionally, the proposed project or variant would incorporate a Transportation Demand Management (TDM) plan (see Section 3.B, Transportation and Circulation) to reduce vehicle trips. As indicated in Table 3.D-19, implementation of the TDM plan would ensure the project includes relevant transportation control measures specified in the 2017 Clean Air Plan, further ensuring consistency with the plan.

ROG EMISSIONS PER DWELLING UNIT AND AIR DISTRICT SCREENING SIZES

Table 3-1 in the air district's CEQA Air Quality Guidelines presents sizes of residential and commercial developments below which the operational criteria pollutant emissions from these developments would not likely result in a significant impact.[248] As discussed above under Impact AQ-2 and shown in Table 3.D-12p. 3.D-55, on a per-unit and per-square foot basis, the proposed project is 65 percent more emissions efficient than those projects considered less than significant in air district Table 3-1. This efficiency is consistent with the goal of the 2017 Clean Air Plan to reduce ozone precursor emissions throughout the air basin. For example, TR-10, Land Use Strategies, supports land use patterns that reduce VMT and associated emissions and exposure to TACs, especially within infill locations. The measures in the 2017 Clean Air Plan that would lead to trip

[247] The planning code allows parking up to 1.5 spaces per dwelling unit.
[248] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2017, Table 3-1, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed July 15, 2022.

Table 3.D-19 Project Consistency with Applicable Control Measures of the 2017 Clean Air Plan

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
SS25 – Coatings, Solvents, Lubricants, Sealants and Adhesives	SS25 will reduce emissions of ROG from architectural coatings and other materials by proposing more stringent ROG limits as appropriate.	Mitigation Measure M-AQ-1b and M-AQ-1d would require low- and super-compliant VOC architectural coatings during construction and operation, which exceed the air district regulatory limits for architectural coatings.	Yes, with implementation of Mitigation Measure M-AQ-1b and M-AQ-1d.
SS32 – Emergency Backup Generators	S32 will reduce emissions of DPM, TACs, and criteria pollutants from emergency backup generators by enforcing Rule 11-18, resulting in reduced health risks to impacted individuals. This measure will also have climate protection benefits through reduced GHG emissions.	Under Mitigation Measure M-AQ-1e, all new diesel backup generators shall meet Tier 4 Final standards. This would exceed the requirements of Rule 11-18.	Yes, with implementation of Mitigation Measure M-AQ-1e.
TR5 – Transit Efficiency and Use	TR5 will improve transit efficiency and make transit more convenient for riders through continued operation of 511 Transit, full implementation of Clipper® fare payment system and the Transit Hub Signage Program.	As part of the proposed Transportation Demand Management (TDM) Plan for the proposed project or variant, the project would provide real-time transportation information displays in building lobbies at each major entrance/exit showing transit lines, walk time to transit stops, availability of onsite car-share vehicles.	Yes, with implementation of Mitigation Measure M-TR-4a
TR7 – Safe Routes to Schools and Safe Routes to Transit	TR7 will facilitate safe routes to schools and transit by providing funds and working with transportation agencies, local governments, schools, and communities to implement safe access for pedestrians and cyclists. Likely projects will include implementation of youth outreach and educational programs to encourage walking and cycling, the construction of bicycle facilities and improvements to pedestrian facilities.	The TDM Plan would prioritize pedestrian and bicycle access and implement measures to encourage alternative modes of transportation by building a dense, walkable, mixed-use, transit-oriented development, and prioritizing safety, especially for bicyclists and pedestrians.	Yes, with implementation of Mitigation Measure M-TR-4a

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
TR9 – Bicycle and Pedestrian Access and Facilities	The bicycle component of TR9 strives to expand bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements include bike lanes, routes, paths, and bicycle parking facilities. The bicycle component also includes a bike share pilot project that was developed to assess the feasibility of bicycle sharing as a first- and last-mile transit option. The pedestrian component of this measure is intended to improve pedestrian facilities and encourage walking by funding projects that improve pedestrian access to transit, employment sites, and major activity centers. Improvements may include sidewalks/paths, benches, reduced street width and intersection turning radii, crosswalks with activated signals, curb extensions/ bulbs, buffers between sidewalks and traffic lanes, and street trees.	The proposed project or variant would provide class 1 bicycle parking on the ground floor or in the first below-grade level of each building. Class 2 bicycle parking spaces would be located within public right-of-way adjacent to each building entrance or in the publicly accessible open space. The proposed project would provide approximately 885 class 1 and 245 class 2 bicycle parking spaces. The variant would provide approximately 923 class 1 and 253 class 2 bicycle parking spaces.	Yes
TR10 – Land Use Strategies	This measure supports land use patterns that reduce VMT and associated emissions and exposure to TACs, especially within infill locations and impacted communities.	The proposed project or variant would build a dense, walkable, mixed-use, transit-oriented development, prioritizing safety, especially for bicyclists and pedestrians consistent with the regional goals and targets expressed in the *Plan Bay Area 2050 Sustainable Communities Strategy*. As discussed under Impact AQ-3, land use changes proposed by the project would not result in significant TAC exposure for either existing offsite or new onsite sensitive receptors with implementation of mitigation measures. In addition, as shown in draft EIR Section 3B, the project would not have a significant impact on vehicle miles traveled (VMT).	Yes, with implementation of Mitigation Measure M-TR-4a.

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
TR13 – Parking Policies	This control measure outlines how MTC and the Air District, in cooperation with regional agency partners, will (1) take actions at the regional level to implement parking policies that will benefit air quality, and (2) encourage and support local agency parking policies to reduce motor vehicle travel and promote focused growth.	The proposed project or variant would comply with Mitigation Measure M-TR-4a requiring a TDM Plan that would include unbundling parking costs from all leases and sales and ensure that the users of parking are the ones who ultimately pay for it. The Special Use District and Design Standards and Guidelines for the project would also establish maximum parking ratios that are lower than the transportation analysis zone average for residential uses. Both of these strategies benefit air quality and reduce motor vehicle travel.	Yes, with implementation of Mitigation Measure M-TR-4a.
TR14 – Cars and Light Trucks	This control measures summarizes actions by the Air District, MTC, local businesses, city and county governments, and state and federal agencies to expand the use of Zero Emission Vehicles and Plug-in Electric passenger vehicles and light-duty trucks within the Bay Area.	San Francisco Green Building Requirements require new large commercial projects, new high-rise residential projects and commercial interior projects to provide designated parking for low-emitting, fuel efficient, and carpool/van pool vehicles and mark eight percent of parking stalls for such vehicles. Mitigation Measure M-AQ-1g would require all truck delivery bays have electrical hook-ups to accommodate plug-in electric truck TRUs and that truck-intensive uses onsite must use TRUs and auxiliary power units that are electric plug-in capable and trucks that use advanced exhaust technology or alternative fuels. In addition, Mitigation Measure M-AQ-1h would require that the project complies with the 2022 California Green Building Standards (CALGreen Code) Tier 2 voluntary EV charging requirements or the mandatory requirements of the most recently adopted version of the City building code, whichever is more stringent.	Yes, with implementation of Mitigation Measures M-AQ-1g and M-AQ-1h.
TR15 – Public Outreach and Education	TR15 includes activities to encourage Bay Area residents to make choices that benefit air quality. This measure includes various public outreach campaigns to educate the public about the health effects of air	For example, as part of a broader transportation marketing campaign, and as part of the TDM, the proposed project or variant could provide new residents and employees with a transportation welcome packet	Yes, with implementation of Mitigation Measure M-TR-4a.

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
	pollution and the air quality benefits of reducing motor-vehicle trips and choosing transportation modes that reduce motor vehicle emissions. The measure includes outreach and education regarding electric vehicles, smart driving, carpooling, vanpooling, taking public transit, biking, walking, and telecommuting.	upon move-in or upon starting work at the site. These informational packets would be continuously updated as local transportation options change. The site's transportation staff would also engage in ongoing efforts to provide information on and market the use of non-auto modes. The proposed project or variant would comply with Mitigation Measure M-TR-4a, which would require a TDM program to comply with the requirements of section 169 of the planning code and would include education strategies regarding transportation choices.	
TR19 – Medium and Heavy Duty Trucks	TR19 directs the air district to directly provide, and encourage other organizations to provide, incentives for the purchase of 1) new trucks with engines that exceed CARB's 2010 NOX emission standards for heavy-duty engines, 2) new hybrid trucks, and 3) new zero-emission trucks. The air District will work with truck owners, industry, CARB, the California energy Commission, and others to demonstrate additional battery-electric and hydrogen fuel cell zero-emission trucks.	Mitigation Measure M-AQ-1c would require all on-road heavy-duty diesel trucks to be model year 2018 or newer; the use of alternative fuels as commercially available, such as natural gas, propane, hydrogen fuel cell, and electric vehicles; and incorporating other best technology available in the future.	Yes, with implementation of Mitigation Measure M-AQ-1c.
TR22 – Construction, Freight and Farming Equipment	TR22 directs the air district to work to reduce emissions from off-road equipment used in the construction, freight handling and farming industries by pursuing the following strategies: (1) offering financial incentives between 2017 and 2030 to retrofit engines with diesel particulate filters or upgrade to equipment with electric or Tier 4 off-road engines; (2) work with the air board, the California Energy Commission and others to develop more fuel-efficient off-road engines and drive trains; and (3) work with local communities to encourage use of renewable electricity and fuels.	Under Mitigation Measure M-AQ-1a, the project sponsor or its contractors would meet Tier 4 Final standards for all construction equipment greater than 25 hp. It also requires the use of alternative fuels as commercially available, such as natural gas, propane, hydrogen fuel cell, and electric construction equipment.	Yes, with implementation of Mitigation Measure M-AQ-1a.

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
TR23 – Lawn Care Equipment	TR23 directs the air district to seek funding to expand the Commercial lawn and Garden equipment replacement Program into all nine Bay area counties.	Under Mitigation Measure M-AQ-1i, the project sponsor shall use only electric landscaping equipment; landscaping equipment powered by gasoline, diesel, propane, or other fossil fuels are prohibited.	Yes, with implementation of Mitigation Measure M-AQ-1i.
EN1 – Decarbonize Electricity Production	EN1 focuses on lowering carbon emissions by switching the fuel sources used in electricity generation. The measure would promote and expedite a transition away from fossil fuels used in electricity generation (i.e., natural gas) to a greater reliance on renewable energy sources (e.g., wind, solar). In addition, this measure would promote an increase in cogeneration, which results in useful heat in addition to electricity generation from a single fuel source.	The 2022 California Green Building Standards Code, Part 11, Title 24, requires the installation of solar photovoltaic panels on certain multifamily and commercial buildings to increase the generation of onsite renewable electricity. Additionally, CleanPowerSF is San Francisco's Community Choice Aggregation program that enables users in the City to opt into energy programs from 100 percent renewable resources although this is a voluntary election of the homeowner. The proposed project or variant would meet the requirements through use of solar and living roofs requirements discussed in Section 2.D.10. The proposed project or variant would also provide renewable energy as required. Approximately 15 percent of available roof area (approximately 70,000 square feet) would be used for a solar photovoltaic (PV) system. The project sponsor would evaluate additional on-site renewable energy generation as part of the sustainability plan to be included in the proposed project or variant. As discussed in Section 2.D.9, all new construction would comply with the City's All-Electric New Construction Ordinance.	Yes
BL1 – Green Buildings	BL1 seeks to increase energy efficiency and the use of onsite renewable energy—as well as decarbonize existing end uses—for all types of existing and future buildings. The measure includes policy assistance, incentives, diffusion of public information, and targeted engagement and facilitation of partnerships in order to	The proposed project or variant would establish a sustainability plan that outlines performance and monitoring criteria for its operation, as outlined in Section 2.D.10 of the proposed project. The project would comply with the state's 2022 Title 24 and San Francisco Green Building Code requirements for energy efficiency. The project sponsor would evaluate	Yes

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
	increase energy efficiency and onsite renewable energy in the buildings sector.	renewable energy approaches such as solar and living roofs as part of the sustainability plan to be included in the proposed project or variant. The project would pursue Leadership in Energy and Environmental Design™ (LEED®) Silver or equivalent for residential buildings and LEED Gold® certification for non-residential buildings.	
BL4 – Urban Heat Island	This control measure aims to reduce the "urban heat island" phenomenon by increasing the application of "cool roofing" and "cool paving" technologies, as well as increasing the prevalence of urban forests and vegetation, through voluntary approaches and educational outreach.	The proposed project or variant would meet the requirements through use of solar and living roofs, as discussed in Appendix B, Section E.8, Greenhouse Gas Emissions. In addition, the proposed project or variant would increase open space at the project site, which would include approximately 200 new trees that would help increase the prevalence or urban forestry and vegetation. Furthermore, the proposed project would comply with Public Works Code section 806(d) by placing new street trees along roadway, sidewalks, in the open space areas and/or paying in-lieu fees as appropriate given the project's site constraints and objectives, or as otherwise required by the project development agreement. The Design for Development would require street trees to be planted in appropriate locations with grasses and other plantings to create a new landscape compatible with the proposed project.	Yes
NW2 – Urban Tree Planting	NW2 promotes the planting of trees in urbanized settings to take advantage of the myriad benefits provided by these trees, including shading to reduce both the "urban heat island" phenomenon and the need for space cooling, and the absorption of ambient criteria air pollutants as well as carbon dioxide.	The proposed project would comply with public works code section 806(d) by placing approximately 200 new trees along street frontages and providing sidewalk landscaping. In addition, the proposed project or variant would increase open space at the project site, which would include new trees that would help increase the prevalence or urban forestry and vegetation.	Yes

Control Measure	Measure Description	Existing or Proposed Implementation Mechanism	Is the Proposed Project or Variant Consistent with the Measure?
WA3 – Green Waste Diversion; and WA4 – Recycling and Waste Reduction	WA3 seeks to reduce the total amount of green waste being disposed in landfills by supporting the diversion of green waste to other uses, while WA4 seeks to reduce greenhouse gas emissions by diverting recyclables and other materials from landfill.	The proposed project or variant would comply with San Francisco's Green Building Requirements by providing for recycling, compost, and solid waste collection and loading that is convenient for all users.	Yes
WR2 – Support Water Conservation	WR2 seeks to promote water conservation, including reduced water consumption and increased onsite water recycling, in residential, commercial, and industrial buildings for the purpose of reducing greenhouse gas emissions.	The proposed project or variant would be subject to specific requirements because it includes a new landscape area greater than or equal to 500 square feet. This requires that landscape projects be installed, constructed, operated, and maintained in accordance with rules adopted by the SFPUC that establish a water budget for outdoor water consumption. The proposed project or variant would comply with all standards in the Residential Water Conservation Ordinance by meeting at least the minimum standards specified in the ordinance as applicable and/or required. For residential high-rise buildings this is a 30 percent reduction compared to that of the 2006 Plumbing Code. The project sponsor would install a non-potable water system to provide the project site with non-potable water needs, such as irrigation and/or toilet and urinal flushing.	Yes

SOURCE: BAAQMD, *Clean Air Plan: Spare the Air, Cool the Climate*, 2017

NOTE: The TDM measures are subject to refinement.

reduction include those listed in Table 3.D-19: TR-7, TR-9, TR-10, TR-13, TR-14, and TR-15. Because the proposed project increases housing density, it results in more efficient, per-unit ROG emissions; this would be consistent with the 2017 Clean Air Plan.

SUMMARY

The proposed project or variant includes many of the control measures from the 2017 Clean Air Plan, as shown in Table 3.D-19. In addition, the proposed project and variant proposes infill development that is close to transit and commercial uses. The proposed project or variant would not preclude the extension of a transit line or bike path, nor would it add parking beyond the maximum allowed.

Because the proposed project would result in criteria air pollutant emissions that would be significant and unavoidable (see Impact AQ-1 and AQ-2) and because the project would not include all applicable control measures from the 2017 Clean Air Plan as project or variant features, this impact would be significant.

MITIGATION MEASURES

Mitigation Measure M-AQ-1a: Clean Off-Road Construction Equipment (see Impact AQ-1)

Mitigation Measure M-AQ-1b: Super-compliant VOC Architectural Coatings during Construction (see Impact AQ-1)

Mitigation Measure M-AQ-1c: Clean On-Road Construction Trucks (see Impact AQ-1)

Mitigation Measure M-AQ-1d: Super-Compliant VOC Architectural Coatings during Operation (see Impact AQ-1)

Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators (see Impact AQ-1)

Mitigation Measure M-AQ-1f: Promote Use of Green Consumer Products (see Impact AQ-1)

Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction (see Impact AQ-1)

Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure (see Impact AQ-1)

Mitigation Measure M-AQ-1i: Electric Landscaping Equipment (see Impact AQ-1)

Mitigation Measure M-AQ-1j: Offset Remaining ROG Emissions (see Impact AQ-1)

Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips (see Impact AQ-1)

SIGNIFICANCE AFTER MITIGATION

As discussed in Impact AQ-2, even with implementation of Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a, the proposed project would result in a significant ROG emissions impact. However, despite this significant impact, the proposed project or variant would be consistent with the 2017 Clean Air Plan because it would reduce ROG and other criteria pollutant emissions, which is consistent with the goals of the 2017 Clean Air Plan and as discussed above, the proposed project would be more ROG efficient on a per dwelling

unit or per square foot basis than the air district's ROG emissions screening criteria. With implementation of Mitigation Measures M-AQ-1a through M-AQ-1e and compliance with applicable regulations as described in Table 3.D-19, p. 3.D-75, the proposed project or variant would include applicable control measures from the 2017 Clean Air Plan, thereby supporting the primary goals of the 2017 Clean Air Plan, and the project would not interfere with, disrupt, or hinder implementation of the 2017 Clean Air Plan. Additionally, Mitigation Measures M-AQ-1f and M-AQ-1j, although not required to support specific 2017 Clean Air Plan control measures, would further reduce the proposed project's or variant's criteria pollutant emissions, further supporting the overall goals of the 2017 Clean Air Plan. Therefore, this impact would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS

The air basin is a nonattainment area for both the federal and state ozone standards; therefore, an air quality impact already exists. Additional emissions of ozone precursors NO_X or ROG over threshold amounts would further degrade air quality related to ozone. Impacts AQ-1 and AQ-2 evaluate whether the proposed project or variant's contribution to this significant impact would be considerable. The air district's project-level criteria air pollutant thresholds are based on levels below which new sources would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. The potential for the proposed project or variant to result in significant criteria air pollutant emissions, and therefore a cumulatively considerable contribution to non-attainment criteria pollutants, is addressed under Impact AQ-1 and AQ-2. Therefore, no separate cumulative criteria air pollutant analysis is required.

Impact C-AQ-1: The proposed project or variant, in combination with cumulative projects, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants. ***(Less than Significant with Mitigation)***

The proposed project or variant would emit DPM and $PM_{2.5}$ emissions that would lead to a significant health risk impact, as discussed under Impact AQ-3. This impact, combined with the health risk impact from DPM and $PM_{2.5}$ emissions from the construction and operation of the cumulative projects discussed below, would result in a significant cumulative health risk impact. With Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the proposed project or variant's contribution to the cumulative health risk would not be considerable.

The air district identified a distance of 1,000 feet as an appropriate zone of influence for assessing health risk impacts and specifies that cumulative sources represent the combined total risk values of each individual source within the 1,000-foot evaluation zone.[249] Health risk impacts are localized, and TAC concentrations typically decrease substantially or can even be indistinguishable from upwind background concentrations beyond approximately 1,000 feet from the emissions source.[250] Therefore, the geographic context for cumulative health risk effects is evaluated considering cumulative projects within 1,000 feet of the proposed project or variant MEIs.

[249] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017, p. 5-2.
[250] Bay Area Air Quality Management District, Recommended Methods for Screening and Modeling Local Risks and Hazards, 2012, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en&rev=3ed5e81662784057941d97b851900d19, accessed September 29, 2022.

The following is a summary of the cumulative projects in the project vicinity:

1. 460 West Portal Avenue: this project would include the construction of 1,400 square feet of institutional land use and is located about 2,200 feet from the Project boundary.
2. Park Merced: this project would include the construction of 4,666 dwelling units and 168,828 square feet of retail. This project is located about 2,000 feet from the Project boundary.
3. Lake Merced Boulevard Quick-Build Pedestrian Safety Improvements (SFMTA): this is a quick-build project on Lake Merced Boulevard from Skyline Boulevard to John Muir Drive. Spot improvements may include striping and crosswalk upgrades, signage, narrowing of traffic lanes, traffic beacons, and pedestrian refuge islands. Corridor-wide improvements may include road lane reductions and new protected bike facilities. Construction is planned for 2022–2023. This construction is located 1,400 feet from the Project boundary.
4. San Francisco State University (SFSU) Future State 2035 (Future State 2035): this project is a long-term planning document of projects to be implemented over a 15-year time period to upgrade campus structures and infrastructure improvements. It includes 9,970 dwelling units, 1.5 million net new gross square feet of institutional structures, and open space. Construction is planned for 2020–2035 A portion of this construction is adjacent to the project boundary along Buckingham Way. There are immediate plans to construct a dormitory, but this would be greater than 1,000 feet of the proposed project or variant MEIs.[251]

Of these cumulative projects, only the SFSU Future State 2035 project is within 1,000 feet of the project site. The SFSU Future State 2035 plan may involve construction of some replacement student housing adjacent to the project site. However, construction associated with the plan would include the entire SFSU campus, which ranges from adjacent to the project site to over 2,000 feet from the project site. The timing of construction or certainty that the entirety of the proposed construction in the SFSU Future State 2035 plan would occur is unknown at the time of this analysis. Therefore, any conclusion regarding potential cumulative impacts associated with construction of the SFSU Future State 2035 project would be speculative. Therefore, none of the cumulative projects were quantitatively analyzed in the cumulative assessment.

For the reasons described in Impact AQ-3, without mitigation, the proposed project plus existing conditions would result in a significant health risk impact. It is possible that any new construction associated with the SFSU Future State 2035 project in the vicinity of the proposed project or variant could increase health risks at sensitive receptors, which could lead to a significant cumulative impact.

The next step in a cumulative impact analysis is to determine whether the proposed project or variant's health risk contribution would be cumulatively considerable. As discussed above, an annual average $PM_{2.5}$ concentration of 0.3 µg/m^3 and a lifetime excess cancer risk of 10.0 per 1 million persons exposed are the levels below which the air district considers new sources not to make a considerable contribution to cumulative health risks.[252] However, for those locations already meeting the APEZ criteria, a lower significance threshold is required to ensure that the proposed project's contribution to cumulative health

[251] San Francisco Chronicle, "S.F. State gets $116 million to build hundreds of student dorms," https://www.sfchronicle.com/sf/article/S-F-State-gets-116-million-to-build-hundreds-of-17510468.php, accessed November 11, 2022.
[252] Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines* (2017), accessed March 24, 2022, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

risks would not be significant. In these areas, the proposed project's annual average $PM_{2.5}$ concentration at or above 0.2 µg/m^3 or a lifetime excess cancer risk at or greater than 7.0 per 1 million would be a cumulatively considerable health risk contribution and the project would result in a significant cumulative impact.[253] As discussed under Impact AQ-3, the proposed project would result in a significant health risk impact and therefore would result in a cumulatively considerable health risk impact. Mitigation measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would be required.

Sensitive receptors close to construction activities associated with the SFSU Future State 2035 project along Buckingham Way do not meet APEZ criteria. Background existing lifetime excess cancer risks are at or below 45 per 1 million and background existing annual average $PM_{2.5}$ concentrations are at or below 8.5 µg/m^3. Thus, it is unlikely that the contribution of construction of the SFSU Future State 2035 project would cause these sensitive receptors to meet the APEZ criteria without the contribution of the proposed project or variant.[254] The mitigated lifetime excess cancer risk from the proposed project at the offsite resident MEI, which is located along Buckingham Way within 1,000 of the SFSU campus, is 8.9 per 1 million. The cancer risk levels at all other sensitive receptors south of this MEI (south of Buckingham Way) would be lower than 8.9 per 1 million. Similarly, the mitigated annual average $PM_{2.5}$ concentration from the proposed project at the offsite resident MEI, which is to the west of the cancer MEI and just north of Buckingham Way, is 0.28 µg/m^3; the mitigated annual average $PM_{2.5}$ concentration from the proposed project at the offsite worker MEI, which is to the east of the offsite resident MEI just north of Buckingham Way, is 0.5 µg/m^3. It is therefore also unlikely that the contribution of the proposed project or variant plus the contribution of the SFSU Future State 2035 project would cause these sensitive receptors to meet the APEZ criteria.

As discussed under Impact AQ-3, for all offsite and onsite MEI receptors, with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the excess lifetime cancer risk and annual average $PM_{2.5}$ concentrations would not exceed significance thresholds for both the proposed project and variant. Because the existing background cancer risk and annual average $PM_{2.5}$ concentrations at the mitigated MEI locations are well below the APEZ criteria, the cumulative project health risk contribution would need to be substantial to cause the MEI locations to meet the APEZ criteria. This is unlikely given the size, timing, and characteristics of the cumulative projects.

Therefore, with mitigation, the proposed project or variant in combination with cumulative projects would not result in a considerable contribution to significant cumulative health risk impacts to offsite and onsite sensitive receptors. Therefore, cumulative health risk impacts would be ***less than significant with mitigation***.

---

[253] A 0.2 µg/m^3 increase in $PM_{2.5}$ would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M. et al., Spatial Analysis of Air Pollution and Mortality in Los Angeles, *Epidemiology* 16 (2005): 727–736. The excess cancer risk has been proportionally reduced to result in a significance criterion of 7 per 1 million persons exposed.

[254] For example, the contribution of the SFSU Future State 2035 project at these sensitive receptor locations would need to be a cancer risk of 55 in 1 million or an annual average $PM_{2.5}$ concentration of 1.5 µg/m^3, which is multiple times higher than the proposed project or variant's mitigated contribution at the offsite MEIs.

Impact C-AQ-2: The proposed project or variant, in combination with cumulative projects, would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people. ***(Less than Significant)***

Impact AQ-4 describes the potential of odorous emissions from the proposed project or variant. Section 3.D.2, Environmental Setting, identifies sources of odors in the vicinity of the project site, including the Oceanside Water Pollution Control plant, which is a type of odorous source listed in air district Regulation 7. However, this plant is approximately 1.5 miles west of the project site and would not contribute to a cumulative odor impact when combined with the minor, generally non-offensive odors associated with the proposed project or variant.[255] In addition, the cumulative projects listed above would not construct the type of facility associated with odors, which generally includes solid waste collection, wastewater or stormwater collection/conveyance, or food preparation. The odors associated with these cumulative projects would be those from diesel-powered vehicles and equipment during construction and would cease once construction is complete. Therefore, this impact would be ***less than significant***.

[255] Bay Area Air Quality Management District Public Records Request Plant Status shows no odor-related complaints regarding this facility (Facility ID 4116) for the past three years of records requested.

3.E Wind

3.E.1 Introduction

This section assesses the wind impacts of the proposed project or variant and cumulative conditions. It outlines the existing environmental setting as it relates to wind, the regulatory framework, the approach to the analysis, the impacts that could result from implementation of the proposed project or variant; and identifies mitigation measures to reduce potential adverse impacts. The analysis assesses the potential for the proposed project or variant to result in reasonably foreseeable impacts on ground-level wind currents at various publicly accessible locations. The analysis in this section is based on wind tunnel testing of the proposed project or variant, which is included in Appendix G of this EIR.[256]

3.E.2 Environmental Setting

SAN FRANCISCO'S EXISTING WIND ENVIRONMENT

Average winds speeds in San Francisco are the highest in the summer and lowest in winter. However, the strongest peak wind speeds occur in winter. The highest average wind speeds occur in mid-afternoon and the lowest in the early morning. Westerly to northwesterly winds are the most frequent and strongest winds during all seasons; southwesterly and west-southwesterly winds are also relatively prevalent.[257]

Four wind directions have the greatest frequency of occurrence: northwest (10 to 13 percent of all winds), west-northwest (14 to 26 percent of all winds), west (35 to 45 percent of all winds), and west-southwest (2 percent of all winds). They make up more than 60 percent of the general winds and more than 85 percent of the strongest winds and reflect the persistence of sea breezes.

Historical wind data collected at Fort Funston, which is upwind of the project site with respect to southwest winds, show that the majority of strong winds at Fort Funston were recorded as blowing from the south-southwest through the north-northwest.

WIND EFFECTS ON PEOPLE

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed.[258] Winds up to about 4 mph have no noticeable effect on pedestrian comfort. With speeds from 4 to 8 mph, wind is felt on the face. Winds from 8 to 13 mph will cause clothing to flap and extend a light flag mounted on a pole. Winds from 13 to 19 mph will raise loose paper, dust, and dry soil. For winds from 19 to 26 mph, the force of the wind will be felt on the body. With 26 to 34 mph winds, umbrellas are used with difficulty, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph and gusts can blow people over.

[256] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.
[257] Wind direction is given as the point of origin (i.e., a westerly wind blows from west to east).
[258] T.V. Lawson, and A.D. Penwarden, "The Effects of Wind on People in the Vicinity of Buildings," *Proceedings of the Fourth International Conference on Wind Effects on Buildings and Structures, London, 1975*, Cambridge University Press, Cambridge, U.K., 605–622, 1976.

WIND EFFECTS FROM BUILDINGS

The wind environment for pedestrians can be adversely affected by buildings that are considerably taller than surrounding structures, particularly where such taller buildings present large planar surfaces towards the prevailing winds. A building that stands alone or is much taller than the surrounding buildings can intercept and redirect winds that might otherwise flow overhead and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence (variability in wind speed and pressure). These redirected winds, or down-drafts, can be relatively strong and turbulent, and may in some instances be incompatible with the intended uses of nearby ground-level spaces. Conversely, a building with a height that is similar to the heights of surrounding buildings typically would cause little or no additional ground-level wind acceleration and turbulence. Thus, wind impacts are generally caused by large building masses extending substantially above their surroundings, and by buildings oriented so that a large wall catches a prevailing wind, particularly if such a wall includes little or no articulation. Buildings spaced closely together can also result in increased wind speeds at pedestrian level as the winds are channeled between closely spaced structures. However, groups of buildings can interact with and slow approaching winds due to the friction and drag created by the many individual structures, resulting in calmer pedestrian winds at locations sheltered by groups of buildings.

ANALYSIS OF PEDESTRIAN-LEVEL WINDS

CEQA review in San Francisco concentrates on wind conditions at the pedestrian level in publicly accessible areas. Consistent with analysis procedures from the San Francisco Planning Department, the 26-miles-per-hour (mph) wind hazard criterion of San Francisco Planning Code (planning code) section 148—wind speeds that exceed 26 mph for one full hour of the year—is used as the threshold to determine if a project would result in significant wind impacts under CEQA.[259] Therefore, if a project would cause pedestrian-level wind speeds to exceed 26 mph for a full hour, a project would have a significant wind impact.[260] In general, buildings with a height of 85 feet or less tend not to result in substantial effects on pedestrian-level winds or to create new exceedances of the wind hazard criterion.[261] Projects are also evaluated against a pedestrian comfort criterion, which is a wind speed of 11 mph for pedestrian areas and 7 mph for seating areas, not to be exceeded more than 10 percent of the time. However, the planning department does not use the comfort criteria in its evaluation of a project's wind impacts under CEQA. The comfort criteria are discussed in this chapter for informational purposes only.

[259] Section 148 applies only to the Downtown (C-3) Use Districts, and therefore does not apply to the project site. However, the planning department relies on the methodology established pursuant to section 148 for analysis of pedestrian wind conditions citywide.

[260] The wind hazard criterion of 26 mph is derived from a wind condition that would generate a 3-second gust of wind at 20 meters per second (45 mph), a commonly used guideline for wind safety. This wind speed, on an hourly basis, is 26 mph averaged for a full hour. However, because the Civic Center Federal Building wind data were collected at 1-minute averages, the 26 mph 1-hour average wind speed is converted to a corresponding 1-minute average wind speed of 36 mph, which is then used to determine compliance with the planning code hazard criterion. (E. Arens et al., "Developing the San Francisco Wind Ordinance and its Guidelines for Compliance," *Building and Environment*, Vol. 24, No. 4, pp. 297–303, 1989.) That is, the 26 mph *1-hour* hazard criterion speed as reported herein is a *1-minute* average of 36 mph. Accordingly, all hazard wind speeds in this analysis are presented based on the 36 mph wind speed averaged over 1 minute, and the hazard criterion is based on 36 mph.

[261] As described in San Francisco Planning Code section 260(a), the height of a building is measured using the highest point on the finished roof in the case of a flat roof, and the average height of the rise in the case of a pitched or stepped roof, or similarly sculptured roof form, or any higher point of a feature not exempted under planning code section 260(b). Exemptions include, but are not limited to, mechanical equipment and appurtenances; elevator, stair and mechanical penthouses, fire towers, skylights and dormer windows; and ornamental and symbolic features of public and religious buildings and structures.

EXISTING WIND CONDITIONS AT THE PROJECT SITE AND VICINITY

Westerly winds blowing from the Pacific Ocean encounter surface roughness in the form of buildings, ground, and vegetation, resulting in some slowing of winds at ground level. Winds may also be altered by intervening topography; for example, the project site is offered some protection from southwest winds by the mass of the Fort Funston cliffs. However, because there are virtually no tall buildings between the ocean and the project site, westerly and northwesterly winds generally flow unimpeded from the ocean to the project site. As a result, the project site and vicinity are generally windy.

Figure 3.E-1 and **Figure 3.E-2**, p. 3.E-5, depict existing wind comfort and hazard conditions at the project site. As shown in the figures, under existing conditions, winds exceed the 26 mph wind hazard criterion at one of the 191 locations tested for pedestrian wind conditions in the wind tunnel for a total of 2 hours per year (test point 30).[262] This test point is approximately 200 feet west of the intersection of Buckingham Way and 20th Avenue (currently adjacent to building occupied by CitySports building). Among the 191 test points, the average wind speed that is exceeded 1 hour per year is 26 mph.

Regarding the comfort criterion, existing wind speeds exceed 12 mph more than 10 percent of the time at 140 of the 191 locations tested, indicating that the project site is relatively windy under existing conditions. Among all test locations, including those that do not exceed the comfort criterion, wind speeds exceed the comfort criterion 14 percent of the time.

The primary cause for both comfort and hazard criteria exceedances on or adjacent to the project site is the varied terrain between the Olympic Club golf course to the south, Fort Funston to the west, and the Sigmund Stern Recreation Grove to the north. Winds from the west may pick up speed as they are channeled between high points at the Olympic Club golf course, Fort Funston, and Sigmund Stern Recreation Grove before reaching the project site.

3.E.3 Regulatory Framework

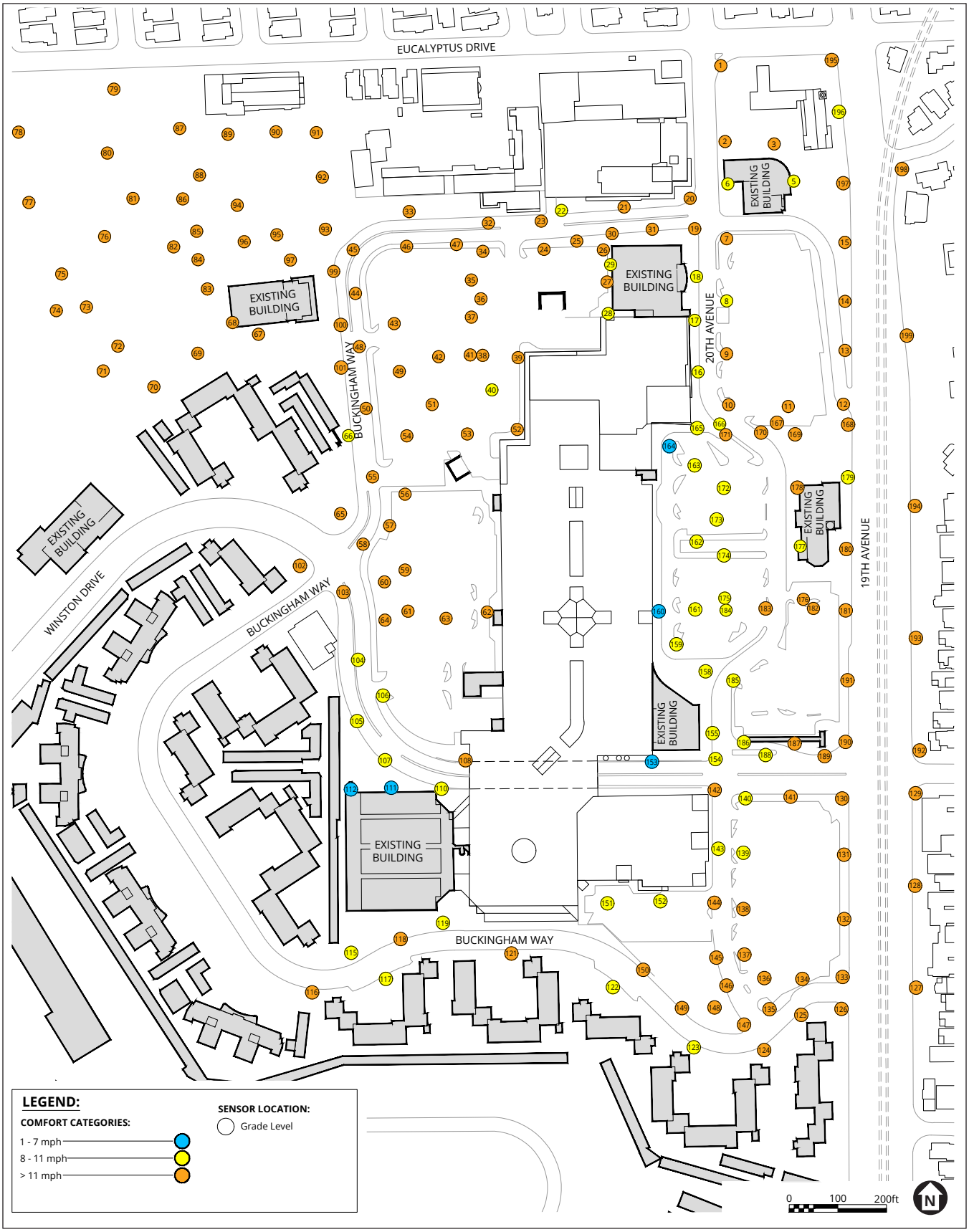
Although there are no federal or state regulations related to wind effects on publicly accessible areas, the city has established several provisions, policies, and procedures that provide the framework for evaluating potential wind impacts from new development and determining whether wind conditions are suitable for pedestrians.

LOCAL REGULATIONS

SAN FRANCISCO PLANNING CODE SECTION 148

Planning code section 148, Reduction of Ground-Level Wind Currents in Downtown Commercial (C-3) Districts, requires buildings in C-3 zoning districts to be shaped so as not to cause ground-level wind currents to exceed defined pedestrian comfort and hazard criteria. The requirements and criteria of Section 148 do not apply to the project site. However, the San Francisco Planning Department uses the Section 148 wind-hazard criterion as the CEQA significance threshold to determine if a project would result in significant wind impacts under CEQA. Therefore, the wind-hazard criterion serves as the basis of the analysis in this EIR.

[262] As described in more detail under the *Approach to Analysis*, p. 3.E-8, wind tunnel test points were chosen to illustrate the general flow of winds around project buildings at select locations. All test points were at an equivalent height of 5 feet above grade.

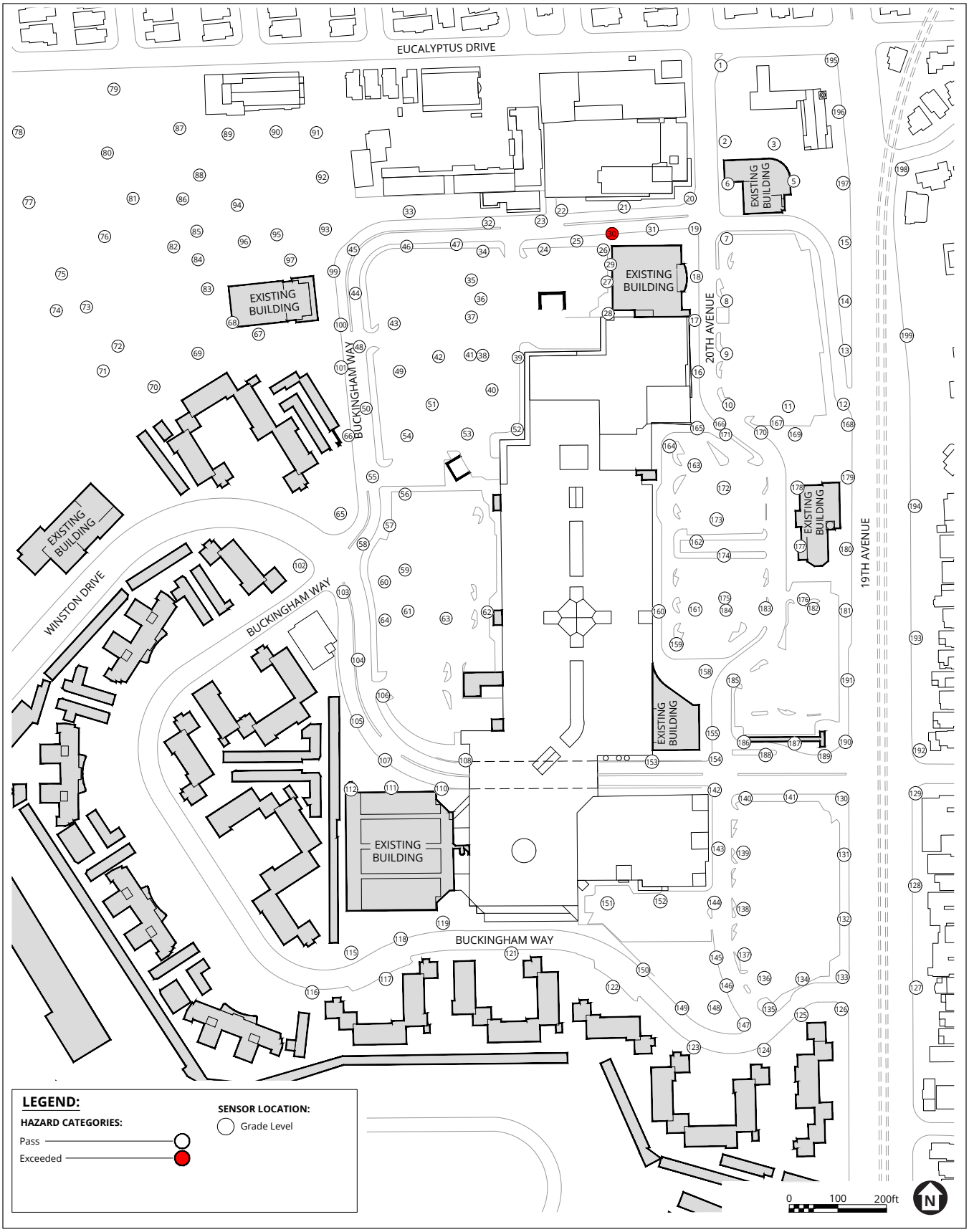


SOURCE: RWDI, 2022

Stonestown Development Project

FIGURE 3.E-1

PEDESTRIAN WIND COMFORT CONDITIONS, EXISTING CONDITIONS



SOURCE: RWDI, 2022

Stonestown Development Project

FIGURE 3.E-2

PEDESTRIAN WIND HAZARD CONDITIONS, EXISTING CONDITIONS

The pedestrian comfort and hazard criteria are based on pedestrian-level wind speeds that include the effects of turbulence; these are referred to as "equivalent wind speeds" (defined in the planning code as "an hourly mean wind speed adjusted to incorporate the effects of gustiness or turbulence on pedestrians.")

COMFORT CRITERIA

Section 148 establishes equivalent wind speeds of 7 mph for seating areas and 11 mph for areas of substantial pedestrian use.[263] For projects subject to section 148, the comfort criteria requires that wind speeds not exceed these levels more than 10 percent of the time year-round between 7 a.m. and 6 p.m. unless an exception is granted pursuant to section 148.

HAZARD CRITERIA

Planning code section 148 establishes a wind hazard criterion of an equivalent wind speed of 26 mph.[264] Under section 148, new buildings and additions to buildings may not cause wind speeds that reach or exceed this hazard criterion for a single hour of the year. For projects subject to section 148, no exception may be granted during the review for entitlements for buildings that result in winds that exceed the wind hazard criterion.

3.E.4 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

The proposed project or variant would have a significant effect if it would:

- Create wind hazards in publicly accessible areas of substantial pedestrian use

The department uses the wind hazard criterion established in planning code section 148 to define what constitutes a wind hazard and to determine whether a project would result in a significant impact under CEQA. A wind hazard is defined as winds that would cause equivalent wind speeds to reach or exceed 26 mph for a single hour of the year.

In addition, section 148 established wind comfort criteria where a project shall not cause ground-level wind currents to exceed, more than 10 percent of the time year-round, 11 mph in areas of substantial pedestrian use, and 7 mph in public seating areas. In San Francisco, exceedances of the wind comfort criteria are not considered significant environmental impacts for the purpose of CEQA; thus, this draft EIR section focuses on the wind hazard analysis

APPROACH TO ANALYSIS

The evaluation of potential wind impacts of the proposed project and variant are based on a pedestrian wind assessment prepared in support of this draft EIR (refer to Appendix G). The wind assessment included wind

[263] The wind comfort criteria are defined in terms of equivalent wind speed, which is an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. Equivalent wind speed is defined as the mean wind velocity, multiplied by the quantity (1 plus 3 times the turbulence intensity) divided by 1.45. This calculation magnifies the reported wind speed when turbulence intensity is greater than 15 percent.
[264] The wind hazard criterion is derived from the wind condition that would generate a 3-second gust of wind at 20 meters per second, a commonly used guideline for wind safety. This wind speed, on an hourly basis, is a 26 mph average for a full hour. Because the original Federal Building wind data were collected at 1-minute averages, the 26 mph hourly average is converted to a 1-minute average of 36 mph, which is used to determine compliance with the 26 mph 1-hour hazard criterion in the planning code.

tunnel tests conducted using a 1:400 (1 inch = approximately 33 feet) scale model of the proposed project, variant, and surrounding buildings within an approximately 1,600-foot radius centered on the project site, which is sufficient to encompass the proposed project and variant, as well as nearby buildings that could affect winds on and near the site. The circular study area extends west to Lake Merced Boulevard, north to Sloat Boulevard, east to just beyond Junipero Serra Boulevard, and south to Holloway Avenue. The model accounts for topography within the study area. The model does not account for tree cover.

Using 36 wind directions, wind tunnel tests were conducted for the project site and vicinity using the following scenarios:

- Existing
- Existing plus proposed project
- Existing plus variant
- Cumulative conditions

The scale model, which was equipped with permanently mounted wind speed sensors, was placed inside an atmospheric boundary layer wind tunnel. The model had 237 wind speed sensors (study test points) to measure mean and gust wind speeds at an equivalent full-scale height of 5 feet above ground. Locations for study test points were selected to indicate how the general flow of winds would be directed around the project site. The locations of test points are primarily publicly accessible sidewalks and open spaces under with-project conditions, which are assumed to be areas of substantial pedestrian use. Bike lane locations were also included for informational purposes, as discussed under "Supplemental Information" below.

The analysis was based on a massing model of the proposed project, variant, and cumulative development, because actual building designs do not yet exist for the structures modeled. In general, the massing model can be considered to generate conservative results, in that the model incorporates little in the way of setbacks and no façade detail on proposed project, variant, or cumulative buildings, thereby increasing the ground-level wind speeds that would result, compared to results that would arise from a more likely building scenario that does include setbacks and other building sculpting features, such as podiums and façade articulation.

The wind tunnel test used long-term wind data generated in 2021 using a Weather Research and Forecasting model. Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds in the vicinity of the project site.

IMPACT EVALUATION

Impact WI-1: During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use. ***(Significant and Unavoidable with Mitigation)***

CONSTRUCTION IMPACTS

As discussed above, and shown on Figure 3.E-2, p. 3.E-5, under existing conditions winds exceed the 26 mph wind hazard criterion at one of the 191 locations tested for pedestrian wind conditions for a total of 2 hours per year (test point 30). Federal regulations in 29 Code of Federal Regulations Part 1926 provide rules, procedures, processes, and regulations pertaining to the Occupational Safety and Health Administration (OSHA), which limit the potential for construction hazards, including wind-related risks, to be present during

construction. OSHA regulations for the construction industry include safety and health standards, inspections, environmental controls, personal protective and lifesaving equipment, fire protection and safety, signs, signals, barricades, motor vehicles, mechanized equipment, electrics, materials storage, tools, and more. Some of these regulations and procedures would include precautions to minimize risks and prevent injuries to workers and the public from stacked materials, such as shingles and sheets of plywood, that can be picked up and carried by strong winds, and from temporary signage, siding or roofing, or light structures that could be detached and carried by wind. However, to further reduce wind-related risk to the public from construction activities, the proposed project or variant would implement **Mitigation Measure M-WI-1a, Wind Safety Plan**, which would include recommendations for site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service.

> **Mitigation Measure M-WI-1a: Wind Safety Plan.** For the active construction areas, the wind consultant may identify those construction sites that would be especially exposed to strong winds. The consultant may recommend construction site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. The objective of these precautions shall be to minimize risks and prevent injuries to workers and the public from stacked materials, such as shingles and sheets of plywood, that can be picked up and carried by strong winds, and from temporary signage, siding or roofing, or light structures that could be detached and carried by the wind.
>
> As part of construction site safety planning, the project sponsor shall require, as a condition of contracts, that contractors consider all potential wind-related risks to the public from their construction activities, and shall develop a wind safety plan to address and control all such risks related to their work. The safety plan could include but not be limited to measures such as:
>
> - Warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs;
> - Identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds; and
> - Installing semi-permanent windscreens or temporary landscaping features (such as shrubs in large planters) that provide some wind sheltering and also direct pedestrian and bicycle traffic around hazardous areas.

OPERATIONAL IMPACTS

As described under Section 2.E.1, p. 2-33, buildout of the proposed project or variant would be phased and would occur over approximately 8 years. The wind tunnel testing performed for this draft EIR looked at the impacts of the proposed project at full buildout. While the wind tunnel test cannot provide quantitative results about wind conditions during interim stages of development for the reasons stated below, it is likely that exceedances of the wind hazard criterion would occur around or near the bases of new project buildings during interim stages of development, particularly new buildings along the west side of the project site and taller buildings, both of which tend to intercept prevailing westerly winds. This would also be the case under full buildout conditions. Moreover, it is reasonable to infer from the wind tunnel test results that during interim stages of development, wind hazards would occur at ground level in public locations that were not identified in the proposed project wind tunnel test scenario and/or existing wind hazards would potentially be increased in severity or extent. This is because the sequencing of buildings within each phase of

construction is not known, and due to the number of possible building designs and permutations of construction sequencing within each phase, modeling every interim scenario is not feasible.

Following the completion of the first building taller than 85 feet[265] and/or the first cluster of buildings, including structures taller than 85 feet in height, there could be one or more wind hazard exceedances. Those wind hazards could take place at least until adjacent proposed upwind buildings would be completed and would provide shelter from prevailing winds; in some cases, these exceedances could remain through project buildout and under full buildout conditions. Because potential wind hazards could result from a large number of possible combinations of different potential building designs and permutations of construction sequencing, predicting the occurrence of all such wind hazards as a result of the proposed project or variant is not possible.

Upwind buildings would be expected to catch prevailing winds and influence wind conditions at the project site. Once adjacent upwind buildings would be completed and provide effective wind shelter, these temporary wind impacts may no longer result. However, depending on the circumstances of construction, these temporary wind impacts would continue to occur for a number of years, and as such, are considered to be potentially significant and unavoidable. Implementation of permanent mitigation measures involving modification of building massing and/or temporary mitigation measures, such as a combination of fences, landscaping, localized porous/solid wind screens, and/or street furniture would offer wind protection.

As outlined in Mitigation Measures M-WI-1b, all proposed buildings taller than 85 feet in height would require a screening-level assessment conducted by a qualified wind expert, in consultation with the planning department, to determine their potential to result in a new wind hazard exceedance or exacerbate an existing pedestrian-level wind hazard exceedance.[266] If the qualified expert determines that wind tunnel testing is required due to the potential for a new or worsened wind hazard exceedance, as compared to the then existing conditions, such testing would be undertaken in coordination with planning department staff, pursuant to **Mitigation Measure M-WI-1b, Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet**. Based on the results of project-level wind testing required under Mitigation Measure M-WI-1b, **Mitigation Measure M-WI-1c, Maintenance Plan for Landscaping off the Project Site and Wind Baffling Measures in the Public Right-of-Way**, and **Mitigation Measure M-WI-1d, Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in the Private Right-of-Way**, may also apply, if necessary. However, because potential wind hazards could result from a large number of possible combinations of different potential building designs and permutations of construction sequencing, there could still be wind hazard exceedances. Therefore, this impact would be significant and unavoidable even with mitigation.

Implementation of Mitigation Measures M-WI-1a, M-WI-1b, M-WI-1c, and M-WI-1d would reduce this impact.

> **Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet.** Before design review approval, if any, but no later than prior to obtaining a building permit for any project or variant building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant approved by the planning department.

[265] Based on the planning department's experience, consultation with qualified wind consultants, and a review of wind analyses conducted for projects throughout the city, the department has determined that buildings up to 85 feet in height have little to no potential to create wind hazard impacts.
[266] A wind hazard is defined as winds that would cause equivalent wind speeds to reach or exceed 26 mph for a single hour of the year.

The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26-mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[267] The proposed building(s) shall be wind tunnel tested using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site:

1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows.
2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern.

If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered:

3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger.

If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply.

Mitigation Measure M-WI-1c: Maintenance Plan for Landscaping off the Project Site and Wind Baffling Measures in the Public Right-of-Way. If it is determined infeasible to fully mitigate wind hazards via massing and wind baffling measures on the subject building pursuant to Mitigation Measure M-WI-1b, the project sponsor shall prepare a maintenance plan for review and approval by the planning department to ensure maintenance of the features required pursuant to Mitigation

[267] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

Measure M-WI-1b in perpetuity. The maintenance plan for landscaping or wind baffling measures in the public right-of-way shall also be reviewed and approved by public works.

Mitigation Measure M-WI-1d: Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in the Private Right-of-Way. If it is determined infeasible to fully mitigate wind hazards via massing and wind baffling measures on the subject building pursuant to Mitigation Measure M-WI-1b, the project sponsor shall prepare a maintenance plan for review and approval by the planning department to ensure maintenance of the features required pursuant to Mitigation Measure M-WI-1b in perpetuity.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-WI-1a would require future buildings taller than 85 feet to be designed to reduce wind impacts at ground level. Although the goals of these mitigation measures are to (1) to limit the wind effects of the building(s) to reduce hazardous wind speeds to the extent feasible as compared to existing conditions, and (2) in all events, cause the same or fewer number of hours of wind hazard in the immediate vicinity compared to the building(s) on that parcel as identified by prior wind testing, it should not be expected that all of the wind hazard(s) identified in prior wind testing would be eliminated by this measure. If the project sponsor cannot demonstrate that wind impacts of a future proposed building that is taller than 85 feet would not result in new exceedances of the wind hazard criterion compared to then-existing conditions, and landscaping and/or wind baffling measures are implemented, the project sponsor would be required to prepare a maintenance plan (Mitigation Measures M-WI-1c and M-WI-1d) to ensure maintenance of the features required pursuant to Mitigation Measure M-WI-1b in perpetuity.

However, as stated above under Approach to Analysis, p. 3.E-6, the specific design of individual future buildings is currently unknown; therefore, the draft EIR's wind tunnel analysis is based on a massing model of the proposed project, variant, and cumulative development. As such, it cannot be stated with certainty at this time that future buildings could be feasibly designed in a way that would reduce hazardous wind speeds as compared to the then-existing conditions, even with mitigation incorporated. Therefore, it cannot be concluded that wind effects would be reduced to a less-than-significant level. This impact would be ***significant and unavoidable with mitigation***.

Impact WI-2: At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use. ***(Significant and Unavoidable with Mitigation)***

Table 3.E-20 presents a summary of the wind comfort and hazard results for all scenarios tested in the wind tunnel. **Table 3.E-21**, p. 3.E-13, presents the wind hazard results for test points that would exceed the wind hazard criterion under the existing, existing plus proposed project, and existing plus variant scenarios.

WIND HAZARD ANALYSIS

Development of the proposed project or variant would alter wind patterns on and near the project site as they would include buildings as tall as 190 feet in height. Under existing conditions, wind speeds exceed the wind hazard criterion at one of 191 pedestrian-level test points (test point 30), located approximately 200 feet west of the intersection of Buckingham Way and 20th Avenue (currently adjacent to building occupied by CitySports), for a total of 2 hours per year.

Table 3.E-20 Existing Conditions, Existing plus Proposed Project, Existing plus Variant, and Cumulative Wind Comfort and Hazard Results

Scenario	Wind Comfort			Wind Hazard		
	Average Speed	Average (%)	Total Exceedances[a]	Average Speed	Total Hours	Total Exceedances[b]
Existing Conditions	12 mph	14%	140/191	26 mph	2	1/191
Existing plus Proposed Project	13 mph	15%	130/199	28 mph	82	27/199
Existing plus Variant	13 mph	15%	131/197	29 mph	97	29/197
Cumulative	12 mph	14%	118/198	28 mph	46	23/198

SOURCES: RWDI 2022

NOTES:

[a] The wind comfort criteria is exceeded when equivalent wind speeds exceed 11 mph in substantial pedestrian use areas, or 7 mph in public seating areas 10 percent of the time year-round between 7 a.m. and 6 p.m.

[b] The wind hazard criterion is exceeded when wind speeds reach or exceed 26 mph as averaged from a single full hour of the year.

Existing plus Proposed Project

Figure 3.E-3, p. 3.E-15, graphically presents the wind hazard results of the wind tunnel test for the existing plus proposed project scenario.

Under the existing plus proposed project scenario, the total number of test point locations exceeding the wind hazard criterion would increase by 26 over existing conditions (i.e., increase from one to 27, out of a total of 199 test points),[268] and the total hours exceeding the wind hazard criterion would increase from two to 82 hours per year, for an increase of 80 hours per year.

The one wind hazard exceedance under existing conditions (test point 30) would be eliminated with the addition of the proposed project. The new exceedances would be generally located along the west side of the project site (20 of the 27 exceedances). Other exceedances would be clustered on the southeastern corner of the project site (five of the 27 exceedances), and two exceedances would be at the northeast corner of the project site.

In general, the proposed large building masses along Buckingham Way (Blocks W3 and W4), which would be constructed to be up to 190 feet in height, would intercept westerly through northwesterly winds and redirect them towards ground level. As shown in Figure 3.E-3, this condition, along with other shorter project buildings that would nonetheless be taller and more massive than most existing upwind structures,[269] would result in 15 test point locations exceeding the wind hazard criterion (test points: 51, 54, 55, 57, 60, 61, 63, 64, 104, 105, 107, 110, 112, 114, and 115). Test points 51, 54, 55, and 57 represent wind conditions that would be experienced in the proposed Linear Park; test points 60, 61, and 64 are in proposed secondary plazas adjacent to block W3/4; test points 94, 95, and 81 are in the proposed greenway open space area, and test point 63 is in the proposed pedestrian passage on block W3/4.

[268] The existing plus project scenario includes eight more test points than were evaluated under existing conditions; these points are currently covered by existing buildings.

[269] The four SFSU residential buildings in the campus' University Park North housing area is each approximately 100 feet tall. However, these buildings are a minimum of some 400 feet west and southwest of the project site and thus only partially deflect prevailing winds blowing towards the project site.

Table 3.E-21 Exceedances of Pedestrian Wind Hazard Criterion (Wind Hazard Criterion = 36 mph) at Full Build Out

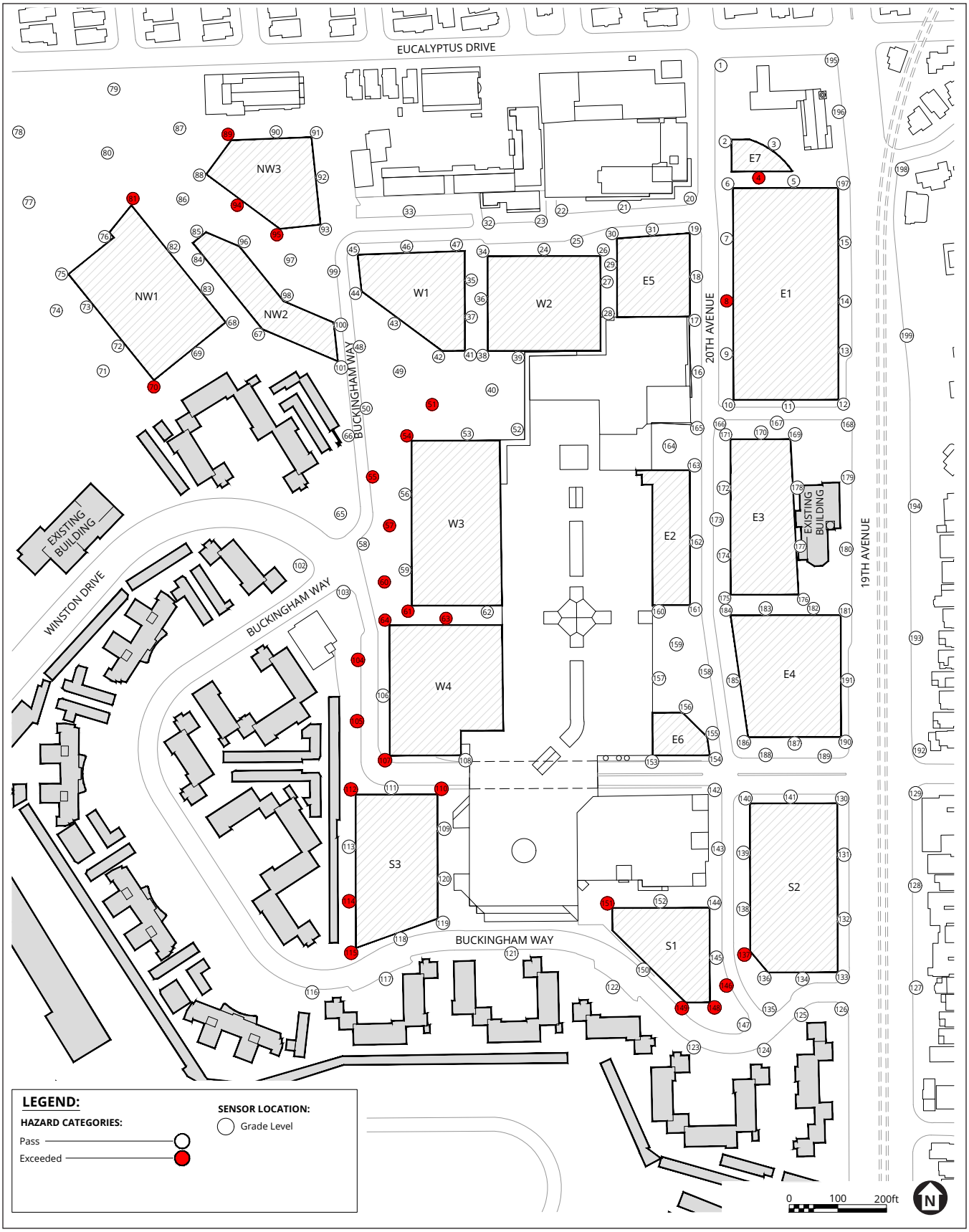
Test Point	Existing			Existing plus Proposed Project				Existing plus Variant				
	Wind Speed Exceeded 1 hr/yr (mph)	Hr/Yr Wind Speed > Hazard Criterion	Exceeds Hazard Criterion?	Wind Speed Exceeded 1 hr/yr (mph)	Hr/Yr Wind Speed > Hazard Criterion	Hours' Change Relative to Existing	Exceeds Hazard Criterion?	Wind Speed Exceeded 1 hr/yr (mph)	Hr/Yr Wind Speed > Hazard Criterion	Hours' Change Relative to Existing	Exceeds Hazard Criterion?	Hours' Change Relative to Project
4	—	—		39	3	—	Y	40	4	—	Y	1
8	30	0		37	1	1	Y	37	1	1	Y	0
30	38	2	Y	33	0	-2		33	0	-2		0
51	27	0		36	1	1	Y	36	1	1	Y	0
54	27	0		42	9	9	Y	44	13	13	Y	4
55	27	0		37	2	2	Y	38	2	2	Y	0
57	28	0		38	2	2	Y	38	2	2	Y	0
60	30	0		37	2	2	Y	37	2	2	Y	0
61	28	0		38	2	2	Y	38	2	2	Y	0
63	26	0		38	2	2	Y	39	3	3	Y	1
64	29	0		41	4	4	Y	40	4	4	Y	0
70	28	0		38	2	2	Y	38	2	2	Y	0
81	30	0		38	2	2	Y	38	2	2	Y	0
89	27	0		36	1	1	Y	36	1	1	Y	0
94	29	0		36	1	1	Y	36	1	1	Y	0
95	28	0		37	1	1	Y	37	1	1	Y	0
104	24	0		36	1	1	Y	36	1	1	Y	0
105	21	0		36	1	1	Y	37	2	2	Y	1
107	21	0		45	15	15	Y	46	17	17	Y	2
110	23	0		39	3	3	Y	40	4	4	Y	1

Test Point	Existing			Existing plus Proposed Project				Existing plus Variant				
	Wind Speed Exceeded 1 hr/yr (mph)	Hr/Yr Wind Speed > Hazard Criterion	Exceeds Hazard Criterion?	Wind Speed Exceeded 1 hr/yr (mph)	Hr/Yr Wind Speed > Hazard Criterion	Hours' Change Relative to Existing	Exceeds Hazard Criterion?	Wind Speed Exceeded 1 hr/yr (mph)	Hr/Yr Wind Speed > Hazard Criterion	Hours' Change Relative to Existing	Exceeds Hazard Criterion?	Hours' Change Relative to Project
112	11	0	—	39	3	3	Y	40	4	4	Y	1
114	—	—	—	36	1	—	Y	37	1	—	Y	—
115	20	0	—	42	9	9	Y	43	10	10	Y	1
122	22	0	—	35	0	0	—	36	1	1	Y	1
124	25	0	—	35	0	0	—	36	1	1	Y	1
137	27	0	—	39	3	3	Y	39	3	3	Y	0
146	27	0	—	37	2	2	Y	38	2	2	Y	0
148	26	0	—	38	2	2	Y	39	2	2	Y	0
149	27	0	—	41	6	6	Y	42	7	7	Y	1
151	19	0	—	36	1	1	Y	36	1	1	Y	0

SOURCE: RWDI, 2022

NOTE:

This table presents data for test points for which the pedestrian wind hazard criterion is exceeded in one or more scenarios. Refer to Appendix G of this EIR for complete results of wind tunnel testing.



SOURCE: RWDI, 2022

Stonestown Development Project

FIGURE 3.E-3

PEDESTRIAN WIND HAZARD CONDITIONS, EXISTING PLUS PROPOSED PROJECT

At the northwest corner of the project site in the vicinity of buildings NW1, NW2, and NW3, there would be five test point exceedances of the wind hazard criterion (test points: 70, 81, 89, 94, and 95). These exceedances would likely be caused by buildings intercepting northwesterly winds and channeling them downward between two buildings. The southeast corner of the project site would also cause five new exceedances of the wind hazard criterion (test points: 137, 146, 148, 149, and 151). At this corner, buildings S1 and S2 would intercept southwesterly winds and funnel them around the corners of the buildings, resulting in a substantial acceleration of wind speeds as they reach ground level.

Three test points located along Buckingham Way would exceed the wind hazard criterion for a total of 33 hours per year, collectively. The other 24 test points in this scenario would collectively exceed the wind hazard criterion for 49 hours per year.[270] The three test points exceeding the wind hazard criterion for a total of 33 hours include:

- Test point 54, located near the middle of the project site on the west side, would exceed the wind hazard criterion for nine hours and the equivalent wind speed exceeded 1 hour per year would be 42 mph;
- Test point 107, located near the southwest corner of the project site, would exceed the wind hazard criterion for 15 hours and the equivalent wind speed exceeded 1 hour per year would be 45 mph; and
- Test point 115, located at the southwest corner of the project site, would exceed the wind hazard criterion for nine hours and the equivalent wind speed exceeded 1 hour per year would be 42 mph.

Existing plus Variant

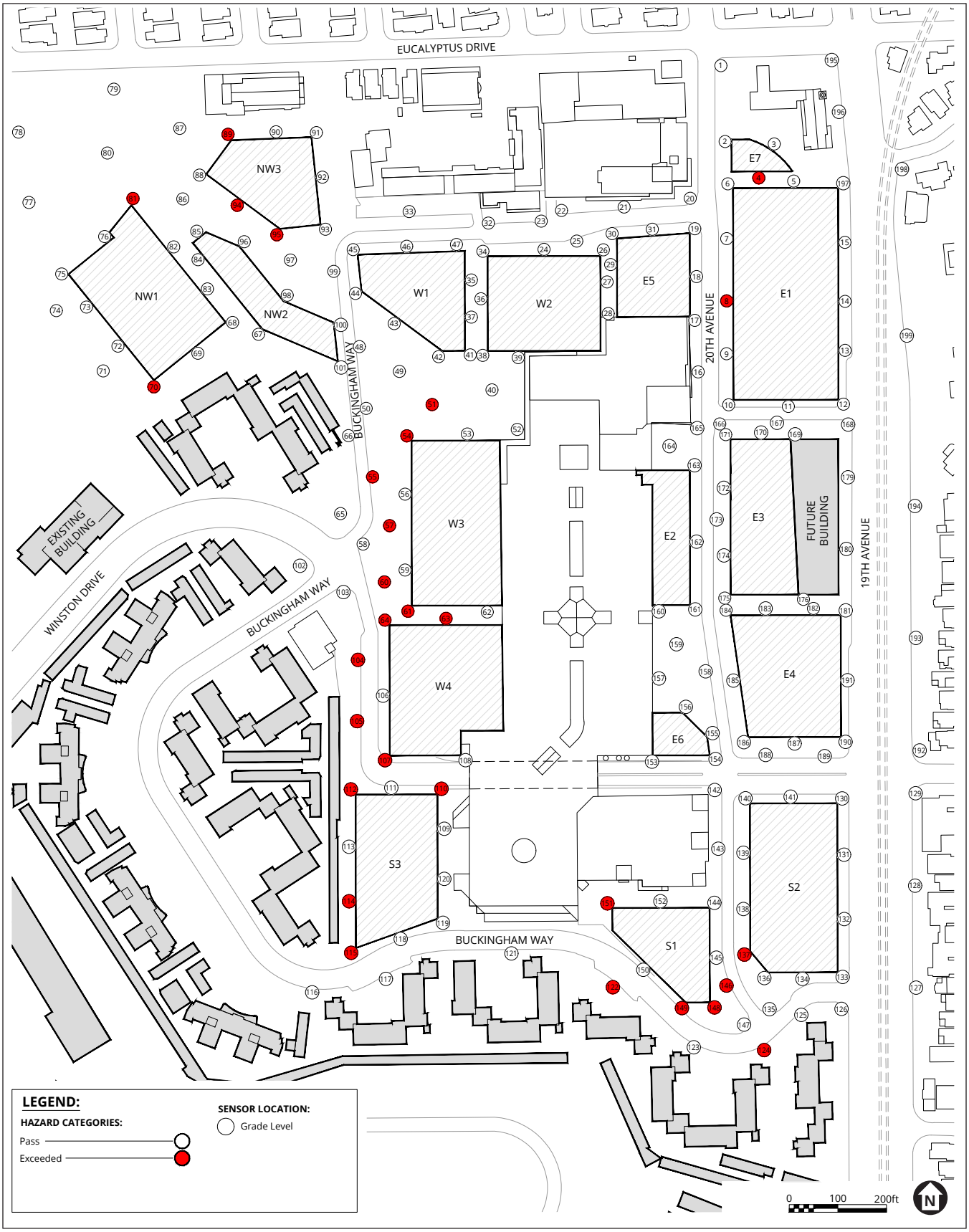
Figure 3.E-4 graphically presents the wind hazard results of the wind tunnel test for the existing plus variant scenario. Under the existing plus variant scenario, wind conditions would be slightly worse than under the existing plus proposed project scenario. The total number of test points exceeding the wind hazard criterion would increase by 28 over existing conditions (i.e., increase from 1 to 29, out of a total of 197 test points).[271] The total number of hours exceeding the wind hazard criterion would increase from 2 to 97 hours, and the wind speed exceeded 1 hour per year would be 29 mph. The same general wind acceleration would occur under the variant as under the proposed project.

CONCLUSION

As described above, the existing plus proposed project and existing plus variant would increase the total number of hours exceeding the wind hazard criterion compared to existing conditions (an increase of 80 hours per year under the proposed project, and an increase of 95 hours under the variant). The proposed project or variant would also increase the number of locations at which the wind hazard would be exceeded, from 1 to 27 and 1 to 29, respectively. This would be a significant impact.

Implementation of Mitigation Measure M-WI-1b discussed under Impact WI-1 above, would reduce wind speeds resulting from the more refined building designs as building permits are brought forward for new building(s). Mitigation Measures M-WI-1c and M-WI-1d would ensure landscaping or wind baffling measures implemented on or off the project site would be maintained in perpetuity.

[270] It is possible that, at some of these points where the wind hazard criterion is exceeded for 1 to 3 hours per year, wind speeds when tested with actual building designs rather than simply massing models would not exceed the hazard criterion.
[271] With the variant, two points that would exist in the existing plus project scenario would be covered by the variant's additional building along 19th Avenue.



SOURCE: RWDI, 2022

Stonestown Development Project

FIGURE 3.E-4

PEDESTRIAN WIND HAZARD CONDITIONS, EXISTING PLUS VARIANT

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure M-WI-1b would require reduction in wind hazard exceedances at ground level. Although the goals of these mitigation measures are to (1) to limit the wind effects of the building(s) to reduce hazardous wind speeds to the extent feasible as compared to existing conditions, and (2) in all events, cause the same or fewer number of hours of wind hazard in the immediate vicinity compared to the building(s) on that parcel as identified by prior wind testing, it should not be expected that all of the wind hazard(s) identified in prior wind testing would be eliminated by this measure. If the project sponsor cannot demonstrate that all exceedances of the wind hazard criterion could be eliminated after implementation of Mitigation Measure M-WI-1a, then the wind consultant shall demonstrate to the planning department that the proposed project or variant would not exceed the total duration of wind hazard exceedances under full build-out conditions as determined through wind tunnel testing for this draft EIR (82 hours for the proposed project and 97 hours for the variant). Finally, if wind hazard exceedances cannot be completely eliminated, a maintenance plan for landscaping or wind baffling measures on or off the project site would be required by Mitigation Measures M-WI-1c and M-WI-1d.

As stated above under Approach to Analysis, p. 3.E-6, actual building designs do not yet exist for the structures modeled, and the analysis is based on a massing model of the proposed project, variant, and cumulative development. It would be speculative to say with certainty that future buildings could feasibly be designed in a way that would reduce hazardous wind speeds as compared to then-existing conditions, even with mitigation incorporated. Therefore, it cannot be concluded that wind effects would be reduced to a less-than-significant level. This impact would be ***significant and unavoidable with mitigation***.

CUMULATIVE IMPACTS

The geographic context for the analysis of cumulative wind impacts includes the future buildings that would be constructed as part of the San Francisco State University Future State 2035.[272]

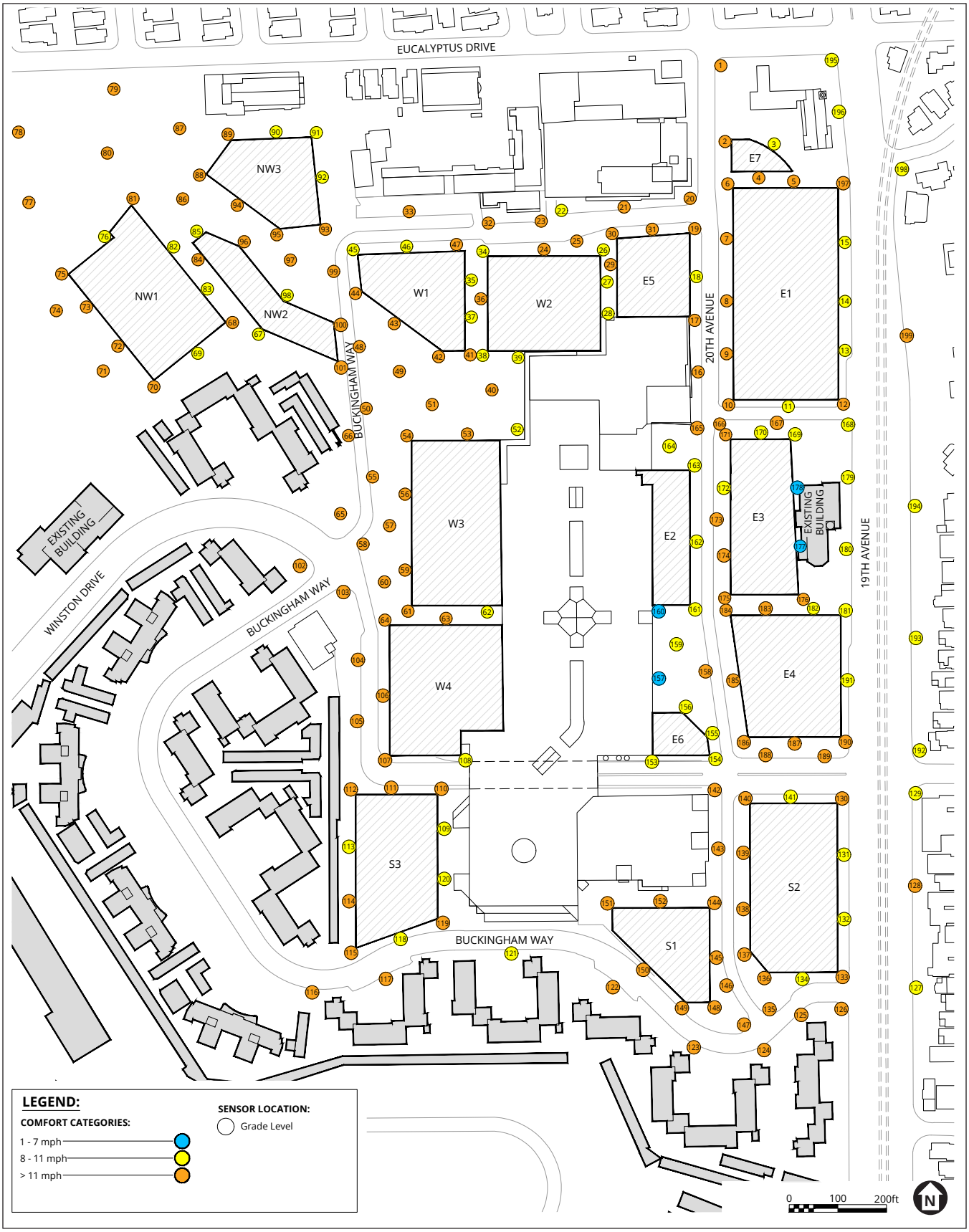
Impact C-WI-1: The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use. ***(Significant and Unavoidable with Mitigation)***

WIND HAZARD ANALYSIS

Figure 3.E-5 graphically presents the wind hazard results of the wind tunnel test for the cumulative scenario.

As shown in Table 3.E-20, p. 3.E-12, and Figure 3.E-5, implementation of cumulative projects would increase the total number of hours exceeding the wind hazard criterion compared to existing conditions (an increase of 44 hours per year). Cumulative development would also increase the number of locations at which the wind hazard would be exceeded from one to 23. This would be a significant impact.

[272] San Francisco State University, *Future State 2035: Campus Vision Plan*, September 14, 2018, https://plan.sfsu.edu/sites/default/files/documents/futurestate_draft.pdf, accessed August 30, 2022.



SOURCE: RWDI, 2022

Stonestown Development Project

FIGURE 3.E-5

PEDESTRIAN WIND COMFORT CONDITIONS, EXISTING PLUS PROPOSED PROJECT

As described under Impact WI-1 above, the proposed project or variant alone would be responsible for a considerable proportion of this cumulative impact. The test points exceeding the wind hazard criterion under the cumulative scenario would occur in the same general locations as identified for the proposed project and variant. However, it is anticipated that upwind cumulative development would provide some shielding from westerly and southwesterly winds, which would reduce the number of cumulative wind hazard exceedances as compared to the proposed project and variant. However, this would remain a significant impact because the project and variant would make a considerable contribution to this cumulative wind impact.

It is noted that, as stated above in the Approach to Analysis, p. 3.E-6, this cumulative analysis is likely conservative in that it is based on a simple massing model of the cumulative buildings and not on actual building designs, which have not yet been prepared. In general, a more likely building scenario includes building setbacks and other building sculpting features, such as podiums, which would be expected to result in less substantial wind effects.

Implementation of Mitigation Measure WI-1b, described above, would require the project sponsor to avoid wind hazard exceedances resulting from implementation of the proposed project or variant to the extent feasible, so that the project causes the same or fewer number of hours of wind hazard compared to the building(s) on that parcel as identified by prior wind testing. If wind hazard exceedances cannot be eliminated, a maintenance plan for landscaping or wind baffling measures on or off the project site would be required by Mitigation Measures M-WI-1c and M-WI-1d.

SIGNIFICANCE AFTER MITIGATION

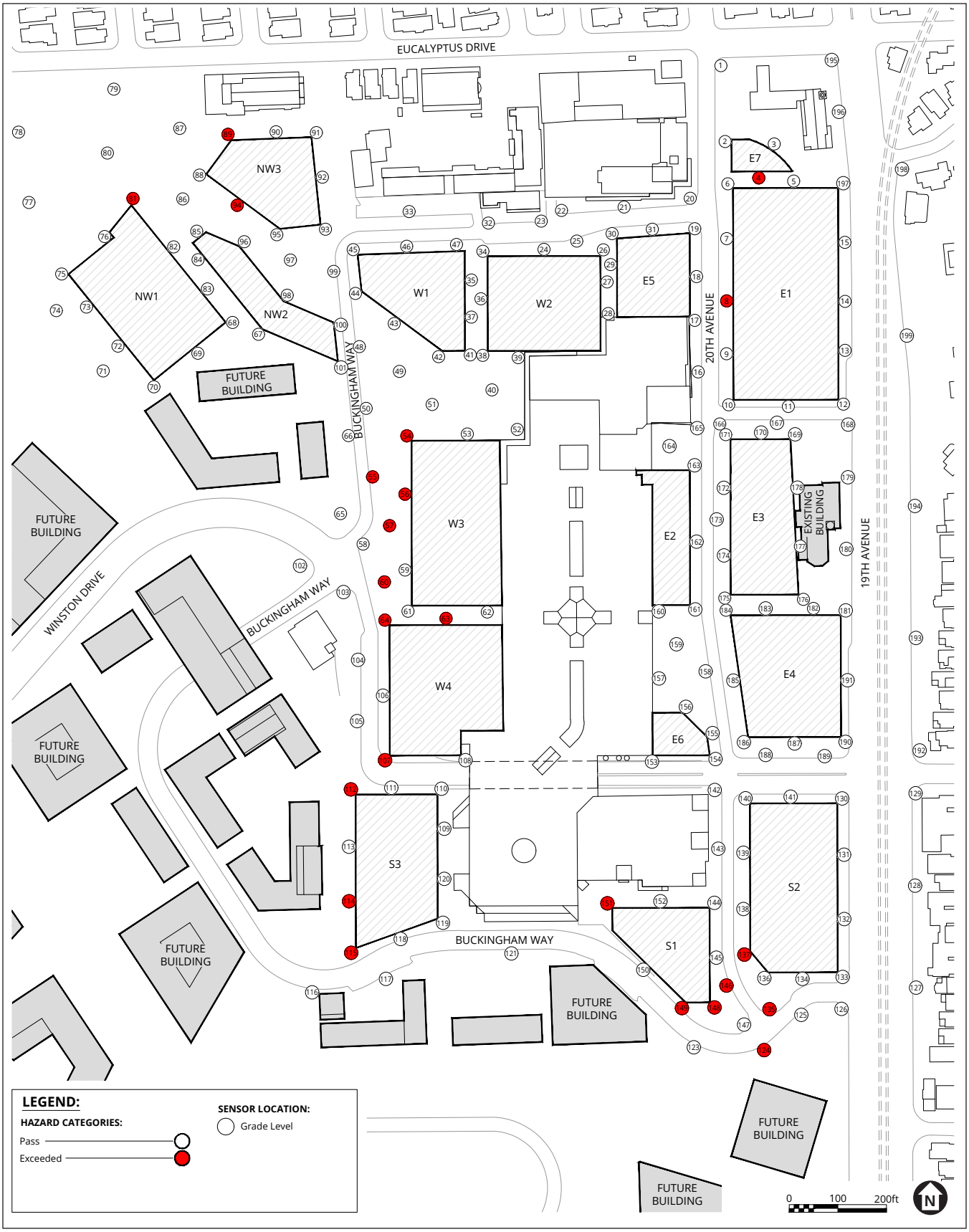
Although Mitigation Measure M-WI-1a would reduce wind hazard exceedances to the maximum extent feasible, it cannot be stated with certainty that no wind hazard exceedances would result from implementation of the proposed project or variant, in combination with cumulative projects; therefore, this impact would be ***significant and unavoidable with mitigation***.

SUPPLEMENTAL INFORMATION

INFORMATIONAL WIND COMFORT ANALYSIS

The wind comfort analysis is a measure of overall wind conditions and is included in this draft EIR for informational purposes. The 11 mph wind comfort criterion is not a CEQA significance criterion, so this discussion is not part of the draft EIR's impact analysis. The wind comfort criterion is useful in describing the overall wind environment because the comfort criterion wind speeds (those exceeding 10 percent of the time) are more representative of "typical" windy conditions than are the wind hazard criterion wind speeds, which are those exceeding only 1 hour per year, or approximately one one-hundredth of a percent of the time.

Figure 3.E-6 graphically presents the wind comfort results of the wind tunnel test for the existing plus proposed project scenario. As shown in Table 3.E-20, p. 3.E-12, the total number of exceedances of the wind-comfort criterion would be reduced under the existing plus proposed project and existing plus variant scenarios as compared with existing conditions. Under existing conditions, 140 of 191 test points exceed the wind comfort criterion, and the average percent of time wind speeds exceed the wind comfort criterion among all 191 test points is 14 percent.



SOURCE: RWDI, 2022

Stonestown Development Project

FIGURE 3.E-6

PEDESTRIAN WIND HAZARD CONDITIONS, CUMULATIVE

The average wind speed exceeding 10 percent of the time would increase from 12 mph under existing conditions to 13 mph under both the proposed project and variant. Under the existing plus proposed project scenario, the total number of test points exceeding the wind comfort criterion would be reduced to 130 of 199, and the average percent of time wind speeds exceed the wind comfort criterion among all 199 test points would increase slightly to 15 percent. Under the existing plus variant scenario, the total number of test points exceeding the wind comfort criterion would increase to 131 of 197 compared to the existing plus proposed project scenario, and the average percent of time wind speeds exceed the wind comfort would be 15 percent. As can be seen in Figure 3.E-1, p. 3.E-4, all points along 19th Avenue and to the northwest of the project site currently exceed the pedestrian comfort criterion, and some of these locations would no longer exceed the comfort criterion with implementation of the proposed project or variant.

INFORMATIONAL DISCUSSION OF WIND EFFECTS ON BICYCLISTS

The pedestrian wind assessment (Appendix G) included 38 additional wind tunnel test points to assess wind effects on bicyclists. The test points were placed along 20th Avenue, Buckingham Way, and Winston Drive. The results of this scenario are summarized in **Table 3.E-22**. As shown in the table, average wind speeds in future bicycle lanes would increase from 6 mph under existing conditions to 7 mph under all scenarios.

Table 3.E-22 Existing Conditions, Existing plus Proposed Project, Existing plus Variant, and Cumulative Wind Results for Bicycle Lanes

Scenario	Average Wind Speeds (mph)			
	Existing	Existing plus Project	Existing plus Variant	Cumulative
Existing Conditions	6 mph	7 mph	7 mph	7 mph

SOURCE: RWDI 2022

3.F Shadow

3.F.1 Introduction

This section describes the existing shadow environmental setting; identifies the regulatory framework; evaluates the potential for the proposed project or variant to result in reasonably foreseeable shadow impacts on publicly accessible open space areas, publicly accessible private open space, and sidewalks; and identifies mitigation measures to avoid or reduce any potential adverse significant shadow impacts. The analysis in this section is based on a shadow study prepared for the proposed project and variant and is included in Appendix H of this draft EIR.[273]

3.F.2 Environmental Setting

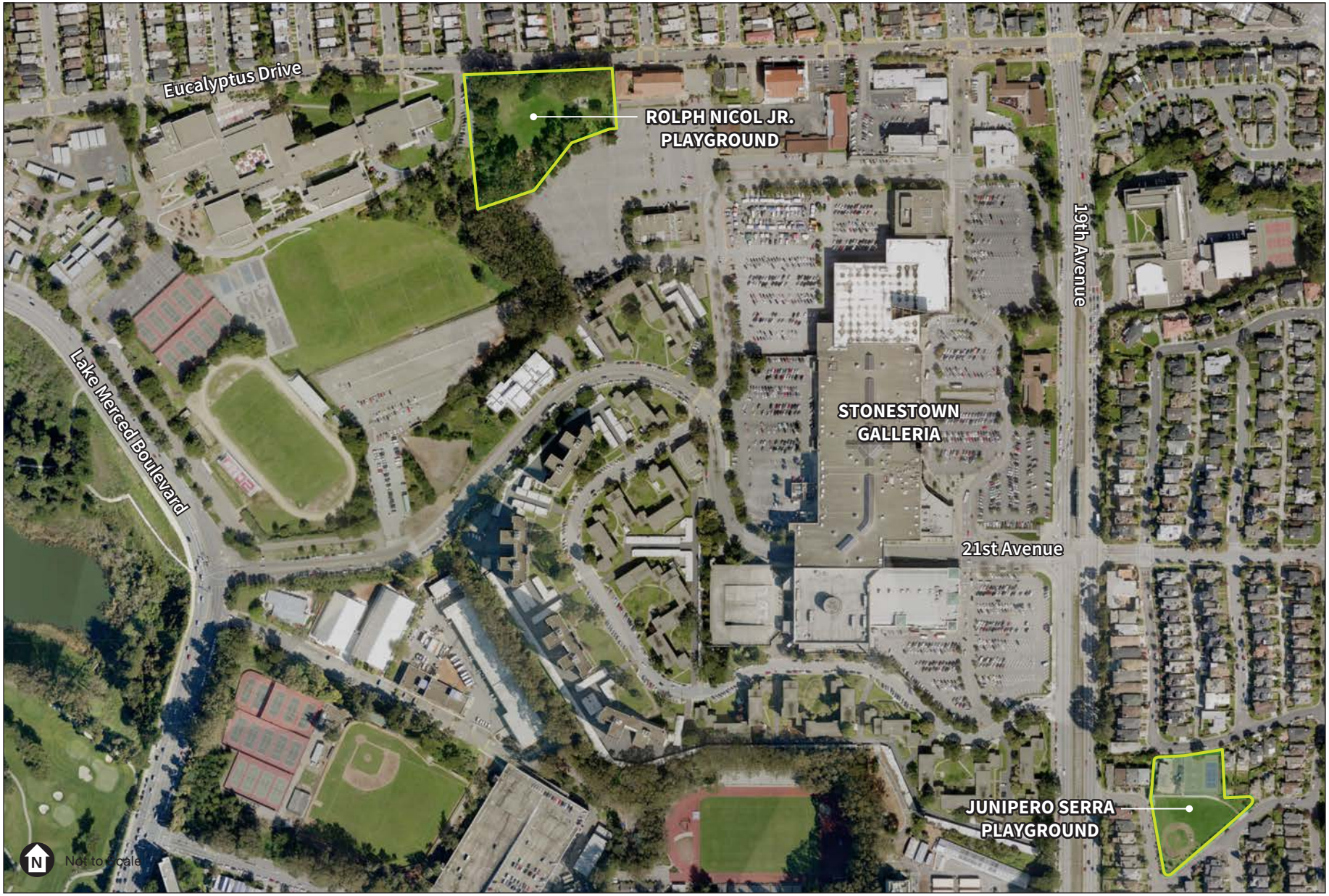
In an urban environment, shadow is a function of the height, size, and massing of buildings, topography, trees, other elements of the built and natural environments, and the angle of the sun. The angle of the sun varies with the time of day (from the rotation of the earth) and the change in the season. Longer midday shadows are cast during the winter (when the midday sun is lowest in the sky), and shorter midday shadows are cast during the summer (when the midday sun is higher in the sky). At the time of the summer solstice (approximately June 21 of every year), the midday sun is highest in the sky. The longest day and shortest night occur on this date. Conversely, the shortest day and longest night occur on the winter solstice (approximately December 21 of every year). The vernal/autumnal equinoxes (when day and night are almost equal in length) represent the halfway point between solstices. Therefore, measuring shadow lengths during the summer and winter solstices captures the extremes for the shadow patterns that occur throughout the year.

CEQA review in San Francisco focuses on the shadow impacts of a proposed project on public open spaces and recreation facilities near a project site. Therefore, existing publicly accessible open spaces and recreation facilities near the project site that could potentially be affected by the proposed project or variant are described below.

EXISTING OPEN SPACES ON THE PROJECT SITE

The project site has approximately 1.6 acres of publicly accessible open space in the form of hardscape and outdoor areas with seating. These areas would be redeveloped as part of the proposed project or variant, and therefore are not included in the analysis. In addition, the proposed project or variant would develop approximately 6 acres of publicly accessible open spaces. These open spaces would be built as part of the proposed project or variant and are not existing; therefore, they are not included in this analysis. Based on the preliminary shadow fan prepared for the project, with the exception of Rolph Nicol Jr. Playground and Junipero Serra Playground, the proposed project or variant would not cast shadow on any other publicly accessible parks or open spaces (see **Figure 3.F-1**).

[273] Fastcast, *Shadow Analysis Report, Stonestown Development Project, San Francisco, CA,* September 19, 2022.



SOURCE: Fastcast, 2022; Adapted by ESA in 2022

Note: only open spaces near the project site that would receive new shadow from the proposed project or variant are labeled on this figure.

Stonestown Development Project

FIGURE 3.F-1

PUBLICLY ACCESSIBLE OPEN SPACES NEAR THE PROJECT SITE

PARKS AND OPEN SPACES IN THE VICINITY OF THE PROJECT SITE

ROLPH NICOL JR. PLAYGROUND

Rolph Nicol Jr. Playground is a 3-acre urban park located between the west side of the project site and Lowell High School. The park features a large grass field; a children's play area and play structure with seating, eucalyptus trees, and low-lying shrubs. The park is not fenced or actively controlled, and the official hours of operation are from 6 a.m. to 11 p.m. daily.

The playground is shaded by the adjacent St. Stephen Catholic Church primarily in the morning in summer and spring. Approximately 10 percent of the park, including the children's play area and a portion of the large grass field, is shaded in the early morning in summer and spring. However, shadow recedes from the park entirely by midday year-round. There is no shadow on the park from approximately noon through the late afternoon at any time during the year.

JUNIPERO SERRA PLAYGROUND

Junipero Serra Playground is a 1.5-acre urban park located approximately 0.2 miles southeast of the project site. The park features a clubhouse, children's play area, a basketball court, a tennis court, walking paths, and a baseball/softball field. The park is fenced around its perimeter and actively controlled. The park's hours of operation are posted as 5 a.m. to 12 a.m. daily.

The playground is shaded throughout the day year-round. Shadows cover the most area (approximately 15 percent of the playground) in the early morning in summer and spring. Throughout the rest of the day (morning, midday, afternoon, and late afternoon), existing shadows cover less than 10 percent of the park.

3.F.3 Regulatory Framework

There are no federal or state regulations related to solar access or shadow effects, but there are several local code provisions, policies, and procedures that regulate shadow in the City and County of San Francisco, as detailed below.

LOCAL REGULATIONS

SAN FRANCISCO GENERAL PLAN

RECREATION AND OPEN SPACE ELEMENT

The recreation and open space element of the San Francisco General Plan (general plan) includes policy 1.9, which requires that solar access to public open space be protected. The policy promotes protecting solar access and avoiding shade to maintain the usability of public open space and states that the requirements of planning code section 295 (discussed in detail below) apply to the review of projects that could shade San Francisco Recreation and Park Department property.

URBAN DESIGN ELEMENT

Policy 3.4 in the general plan's urban design element calls for the promotion of building forms that respect and improve the integrity of open spaces and other public areas. Buildings to the south, east, and west of parks and plazas are to be limited with respect to height or effectively oriented so as to allow for penetration

of sunlight to such parks and plazas. Where feasible, large buildings and developments are to include ground-level open space that is well suited for public access and sunlight penetration.

GENERAL PLAN CONSISTENCY AND IMPLEMENTATION (PLANNING CODE SECTION 101.1)

Planning code section 101.1 establishes eight priority policies, which are the basis upon which inconsistencies in the general plan are resolved. Priority policy 8 calls for the protection of parks and open space and their access to sunlight and vistas. Before issuing a permit for any project that requires an initial study under CEQA; before any demolition, conversion, or change of use; and before taking any action that requires a finding of consistency with the general plan, the City is required to find that a project or legislation would be consistent with the priority policies.

SUNLIGHT ORDINANCE (PLANNING CODE SECTION 295)

Section 295 of the planning code protects properties under the jurisdiction of, or designated to be acquired by, the San Francisco Recreation and Park Commission (parks commission) from shadowing by new structures. Section 295 limits shadow on parks owned by the parks commission by requiring that specific findings be made before buildings greater than 40 feet in height can be approved that would shade parks commission property during the period from one hour after sunrise to one hour before sunset. Section 295(b) states that the planning commission, following a public hearing, "shall disapprove" any project governed by section 295 that would have an "adverse impact on the use of the property" due to shading of a park subject to this section, "unless it is determined that the impact would be insignificant." The planning commission's decision under section 295 cannot be made "until the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission has had an opportunity to review and comment to the City Planning Commission upon the proposed project."

3.F.4 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

The proposed project or variant would have a significant effect if it would:

- Create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces.

The thresholds for determining the significance of shadow impacts in San Francisco pursuant to CEQA and section 295 of the planning code are different. Under planning code section 295 and the joint planning commission/parks commission criteria, any shadow above the absolute cumulative limit[274] would be "significant" in the way that the term is used in section 295. In contrast, the CEQA significance threshold addresses a broader array of shadow-related considerations that may include not only quantitative criteria, but also qualitative criteria such as open space usage; time of day and/or time of year; physical layout of the affected facilities; duration, size, shape, and location of the shadow; and proportion of open space affected. Based on these factors, if the planning department determines that the use and enjoyment of the park or public space would be substantially and adversely affected, the impact would be "significant" in the way that

[274] In 1989, the two commissions adopted shadow criteria for 14 downtown parks, including the quantitative maximum shadow coverage (i.e., absolute cumulative limit) for each open space and qualitative criteria for assessing new shadow. For projects that would affect parks for which a quantitative limit was established, shadow impacts have typically been judged insignificant under section 295 if the project would not exceed the absolute cumulative limit.

the term is used under CEQA. Therefore, in certain situations, new shadow could be a significant impact under planning code section 295 but not a significant impact under CEQA, and vice versa.

Compliance with section 295 of the planning code occurs independently of this draft EIR's analysis and evaluation of shadow impacts. The purpose of this analysis is to provide the public and City decision-makers with information that sufficiently describes the proposed project or variant's shadow in terms of:

- The types of parks and open spaces the shadow would affect;
- The times and locations where the shadow would occur;
- The anticipated duration of the shadow; and
- The potential for shadow to substantially and adversely affect any activities or uses in the subject parks or open spaces.

APPROACH TO ANALYSIS

The evaluation of potential impacts of the proposed project or variant related to shade and shadow are based on the shadow report prepared in support of this draft EIR and included in Appendix H. To evaluate the shadow impacts of the proposed development, a 3D virtual model of the development was prepared. The model includes the project site, potentially affected open spaces, and the surrounding urban environment.

The shadow model considers the variant at full buildout. The variant scenario represents the maximum shadow impacts due to the additional development of the Authentic Church parcel. The proposed project was not modeled separately as any shadow impacts would be less than the variant. Therefore, the modeled scenario represents the proposed project and variant impacts. Specific architectural designs for the proposed buildings within the project site were not available at the time of the study. Therefore, the shadow analysis assumes that all project buildings would be constructed at the maximum allowable heights (30 to 190 feet) and cover the entire footprint of each block on the project site, as shown in Figure 2-5, p. 2-10. This draft EIR shadow analysis considers shadow from existing buildings and structures, shadow from the proposed project or variant, and discloses the net new shadow under project and cumulative conditions that would occur as a result of the proposed project or variant. With respect to cumulative development, the 3D model includes approximations of the building forms anticipated for the proposed development under San Francisco State University's (SFSU) Future State 2035.[275] The shadow model does not consider shadow from existing trees, because the extent of shadow cast by trees can vary based on the season and because trees can be removed for various reasons.

SHADOW DIAGRAMS

To provide a visual understanding of the location, size, and extent of the new shading, graphics were prepared to accompany the qualitative analysis. The shadow diagrams graphically depict the movement of project shadows across the project site and surrounding area on four representative days of the year from 1 hour after sunrise to

[275] San Francisco State University, *Future State 2035: Campus Vision Plan,* September 14, 2018, https://plan.sfsu.edu/sites/default/files/documents/futurestate_draft.pdf, accessed August 30, 2022.

1 hour before sunset:[276] the summer solstice (June 21, the longest day of the year, when the sun is highest in the sky and shadows are the shortest at any given time of day); the spring/autumn equinoxes (March 20/September 21), when the sun's position is nearly identical to the opposite equinox and represent the midway point between the winter and summer solstices); and the winter solstice (December 21, the shortest day of the year, when the sun is lowest in the sky and shadows are the longest at any given time of day).

For each of these days (summer solstice, spring/autumn equinoxes, and winter solstice), this section presents representative shadow diagrams at five times of day: one hour after sunrise; the beginning, middle, and end of the midday period of peak use (10 a.m., 12 p.m., and 3 p.m.); and one hour before sunset. Presenting a series of shadow diagrams from the same day demonstrates how shadow moves across the space and expands and contracts over a specific period of time. They present a representative range of dates and times, including the time of peak midday use of open space on the longest day of the year, on the equinoxes (when day and night are of approximately equal length), and on the shortest day of the year. From these shadow diagrams, shadow impacts on particular open spaces are described and evaluated.

Consistent with planning department shadow analysis procedures, shadow is shown at the ground plane only, and shadow on existing and proposed rooftops is not depicted. This is because the analytical model was developed to evaluate shadow on public open spaces, the vast majority of which are at grade.

IMPACT EVALUATION

Impact SH-1: The proposed project or variant would create new shadow; however, this new shadow would not substantially and adversely affect the use and enjoyment of publicly accessible open spaces. ***(Less than Significant)***

The discussion below analyzes impacts of the proposed project and variant on the two publicly accessible open spaces near the project site that are under the jurisdiction of the parks commission. The project site's existing 1.6 acres of open space would be redeveloped and replaced by new buildings or the proposed publicly accessible open space. The proposed open space areas are shown on the shadow diagrams and are not yet built. Because these other publicly accessible open spaces (labeled A through E on the shadow figures) are not part of the existing condition, new shadow from the proposed project or variant could not result in a significant adverse impact on these future spaces under CEQA.[277] Therefore, the analysis of shadow on these proposed open spaces is presented for informational purposes only at the end of this section. This discussion is included under Supplemental Information, p. 3.F-42, following the CEQA impact analysis. As stated above under Approach to Analysis, the proposed project was not modeled separately as any shadow impacts would be less than the variant. Therefore, the impact discussion herein is relevant to both the proposed project and the variant.

[276] Consistent with the analysis procedures developed to implement section 295, the period analyzed is from the first hour after sunrise until the last hour before sunset, because before and after these hours, shadows are extremely long and move very quickly across the ground. Because of this, much of the city other than areas with no buildings or other structures is in shadow during the first and last hours of sunlight. Additionally, use of most open spaces tends to be less intensive early in the morning and later in the day.
[277] Pursuant to CEQA Guidelines section 15126.2, evaluation of impacts is determined by whether a project causes changes in existing physical conditions.

EFFECTS ON PUBLICLY ACCESSIBLE OPEN SPACES

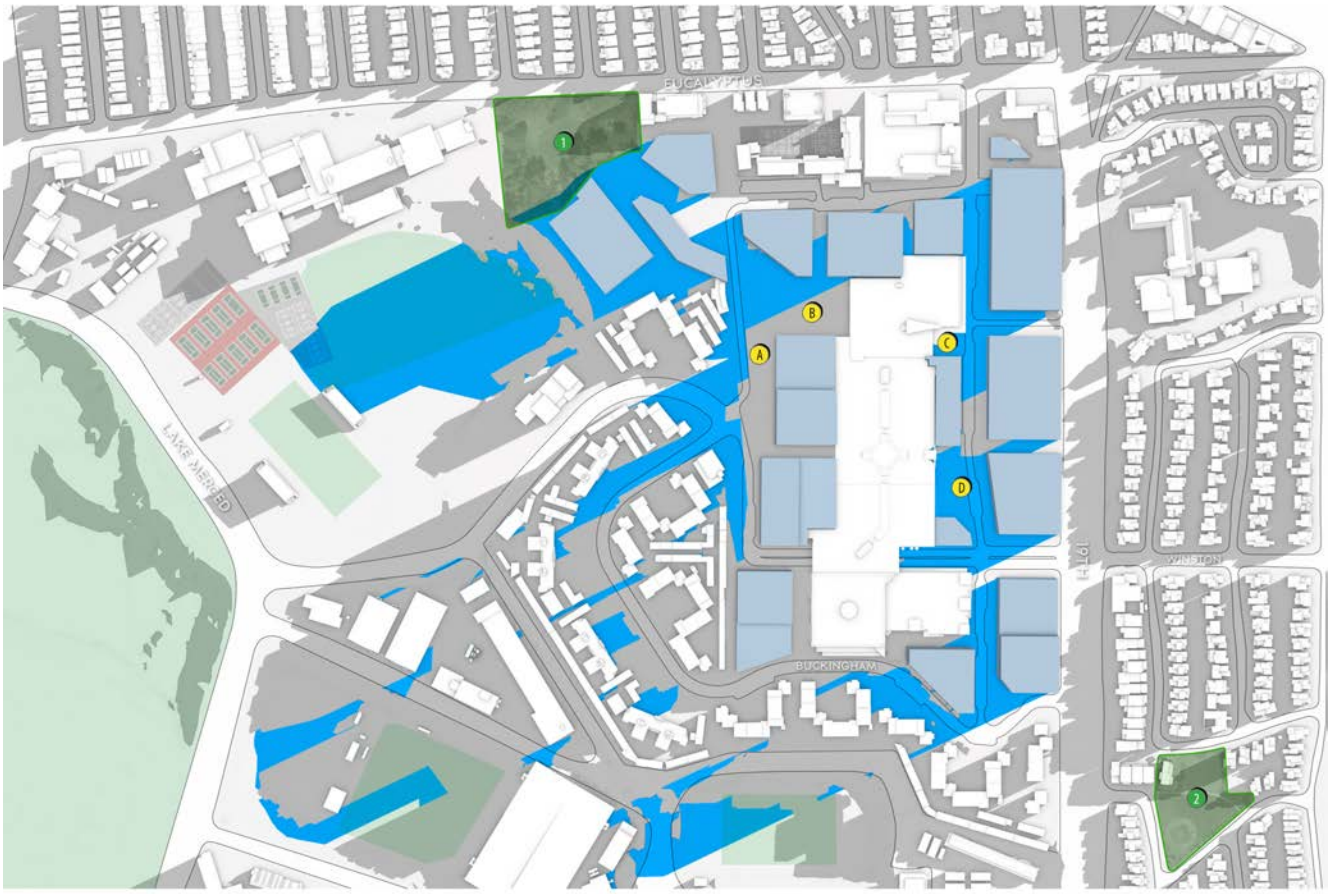
Figure 3.F-2 through **Figure 3.F-16**, p. 3.F-22, depict existing-plus-project shadow for five representative times on the summer solstice (June 21), the spring/fall equinoxes (March 20/ September 21), and the winter solstice (December 21). In these figures, gray areas represent shading occurring under existing conditions, and dark blue represents net new shading that would occur as a result of the proposed project or variant.

ROLPH NICOL JR. PLAYGROUND

As shown in **Figure 3.F-17**, p. 3.F-23, net new shadow from the proposed project or variant would be cast on the Rolph Nicol Jr. Playground year-round. This new shadow would be cast by the buildings on Blocks NW1, NW2, NW3, and W1. New shadow would be most prevalent in the morning in the fall and winter. The largest shadow in terms of area would occur on the winter solstice (December 21) at 8:19 a.m., when approximately 74 percent of the park would be shaded. On the summer solstice, shadow would affect the park from 6:47 a.m. to 1 p.m., on the spring/fall equinoxes, shadow would affect the park from 7:57 a.m. to 3 p.m., and on the winter solstice, new shadow would affect the park from 8:20 a.m. to 3:55 p.m.

New shadow on the summer solstice would affect a grove of trees on the southern portion of the park during the affected times and would not be noticeable to park users given that this area of the park is shaded by existing trees year-round. As stated under Approach to Analysis, p. 3.F-5, the shadow model does not take into account shadow from existing trees or landscaping. New shadow on the spring/fall equinoxes would similarly fall on the grove of trees on the southern portion of the park and on a wooded area on the western portion of the park. From 8 a.m. to 11 a.m., net new shadow would reach a small portion of the grassy area, and from 7:57 a.m. to shortly before 9 a.m., new shadow would cover the children's play area. On the winter solstice, new shadow would cover a large portion of the grassy area from 8:20 a.m. to 11 a.m. New shadow would also cover part of the children's play area along the eastern edge of the park from 8:20 a.m. to 9 a.m., and again from 1 p.m. to 2 p.m. on the winter solstice.

The playground was observed six times on six different dates in June 2022, as shown in **Table 3.F-23**, p. 3.F-24. Within the six 60-minute observation periods, the number of users in the park ranged from 2 to 33, with uses that varied at different times of day and days of the week. The majority of observed uses qualified as pass-through or moderate activity, including dog walking and walking through the park as a pathway to neighboring destinations such as the Stonestown Galleria Mall, Lowell High School, and SFSU. In general, the children's play area was lightly utilized on weekday midafternoons and more heavily used on the weekends at varying times throughout the day depending on weather conditions. Overall, observed peak use at the park occurred in the mid-morning and mid-afternoons on weekdays and throughout the middle hours of the day on the weekends, with particularly high usage on Sundays. During observed peak use, most activity occurred in the children's play area and large grassy area. The typical stay within the park was 15 to 75 minutes.



Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-2
SUMMER SOLSTICE, JUNE 21, 6:47 A.M.

Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

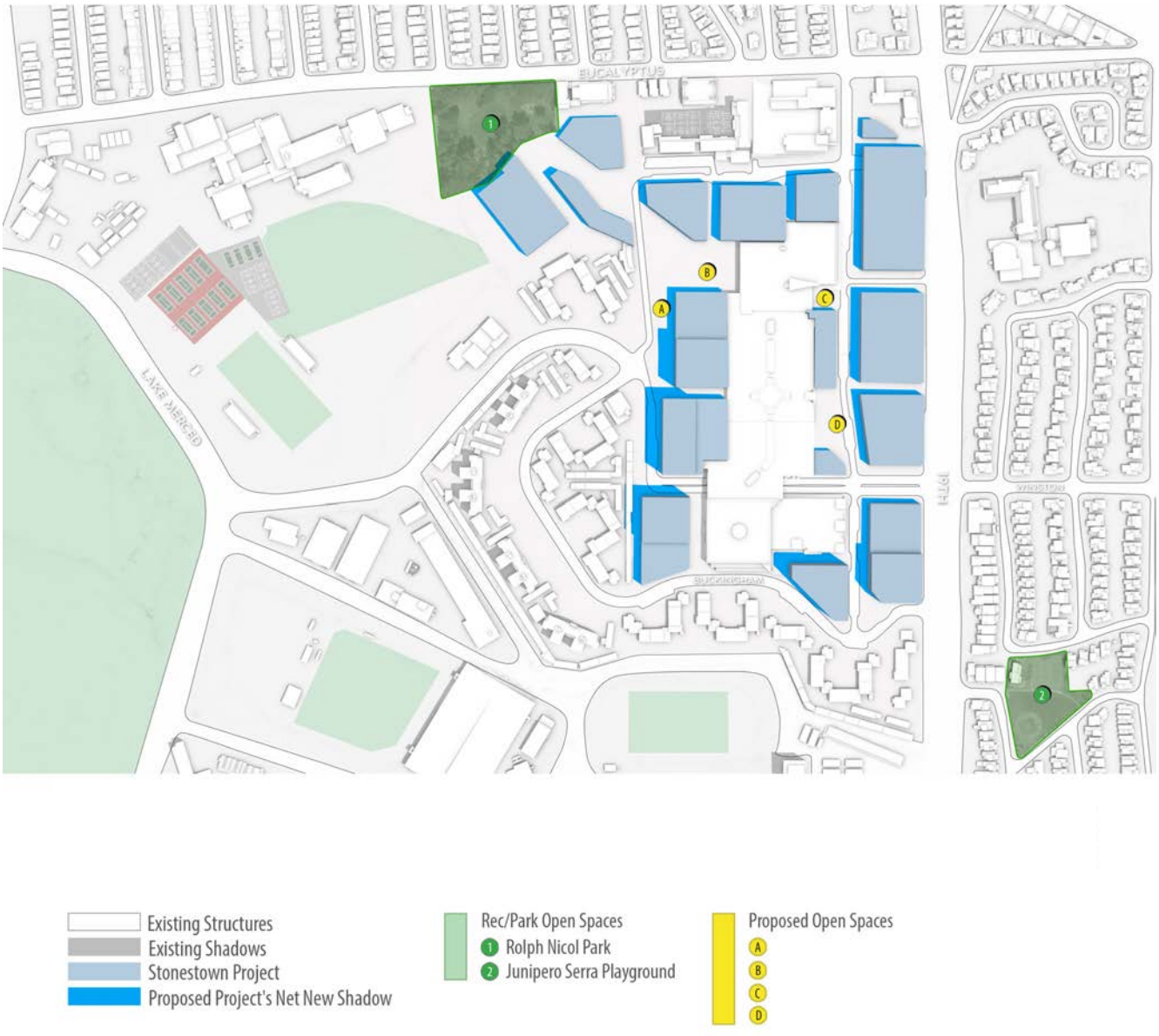
Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

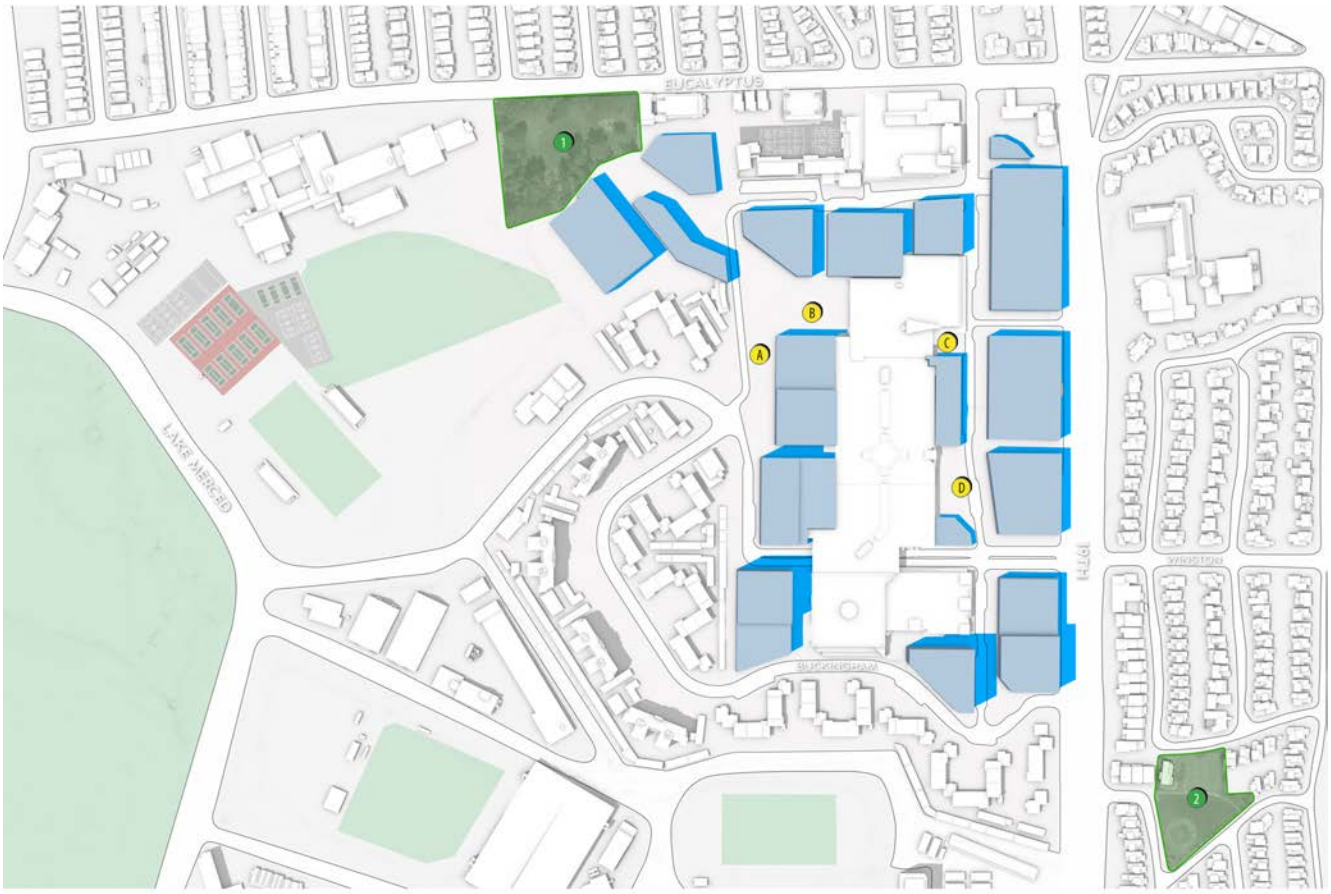
FIGURE 3.F-3
SUMMER SOLSTICE, JUNE 21, 10 A.M.



SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-4
SUMMER SOLSTICE, JUNE 21, 12 NOON



SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-5
SUMMER SOLSTICE, JUNE 21, 3 P.M.

Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-6
SUMMER SOLSTICE, JUNE 21, 7:36 P.M.

Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-7
APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 7:57 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-8

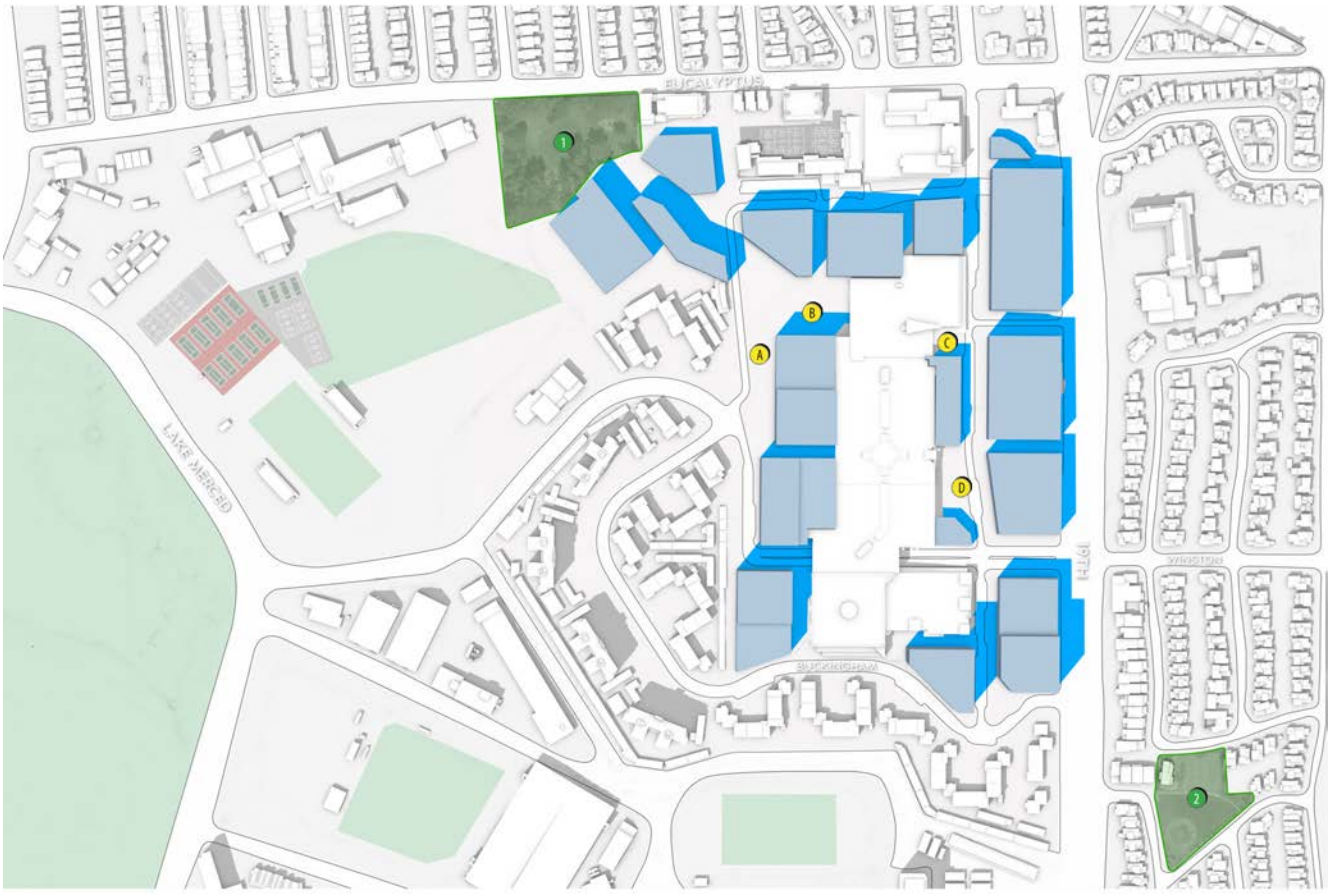
APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 10 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-9

APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 12 NOON



Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

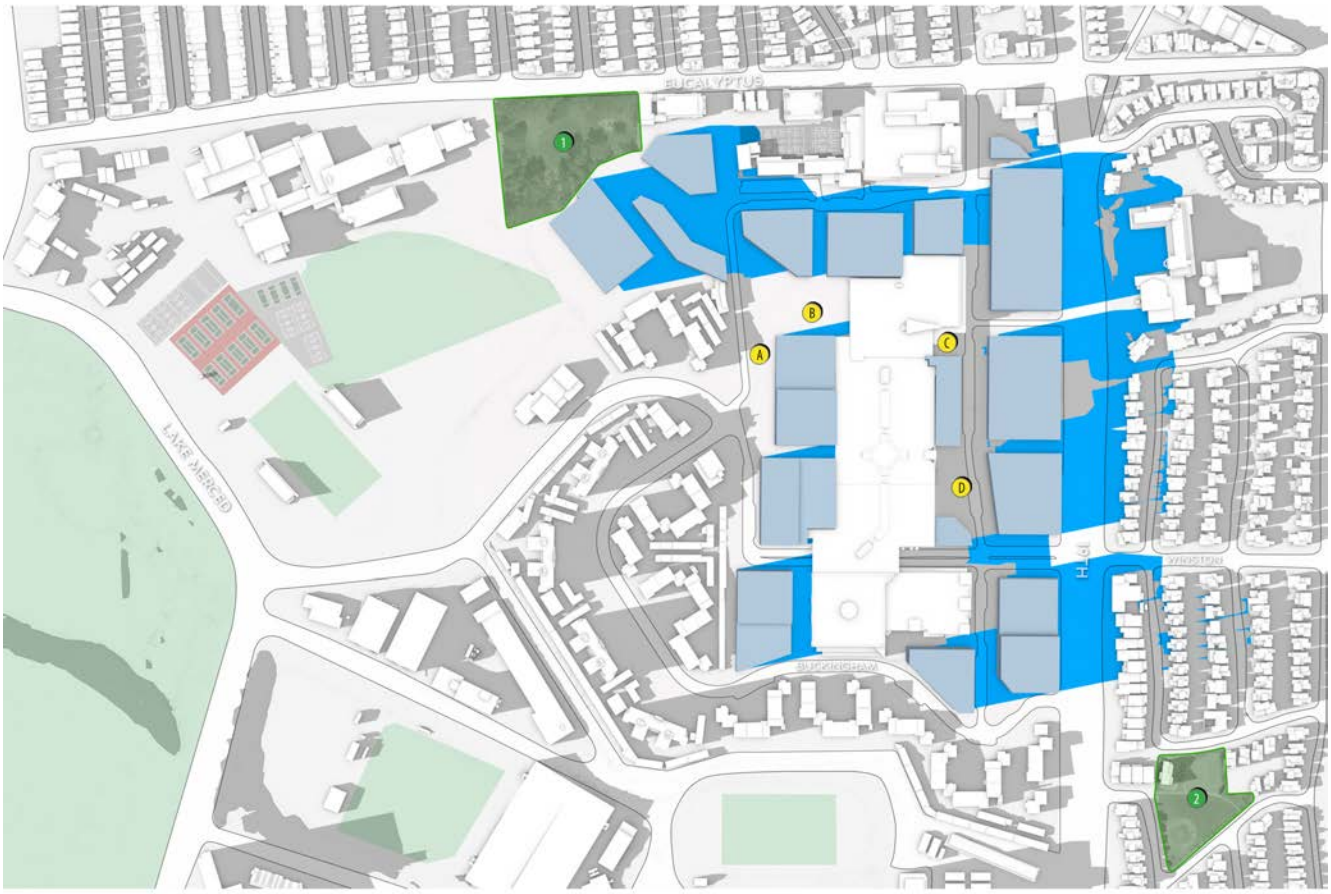
Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-10
APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 3 P.M.

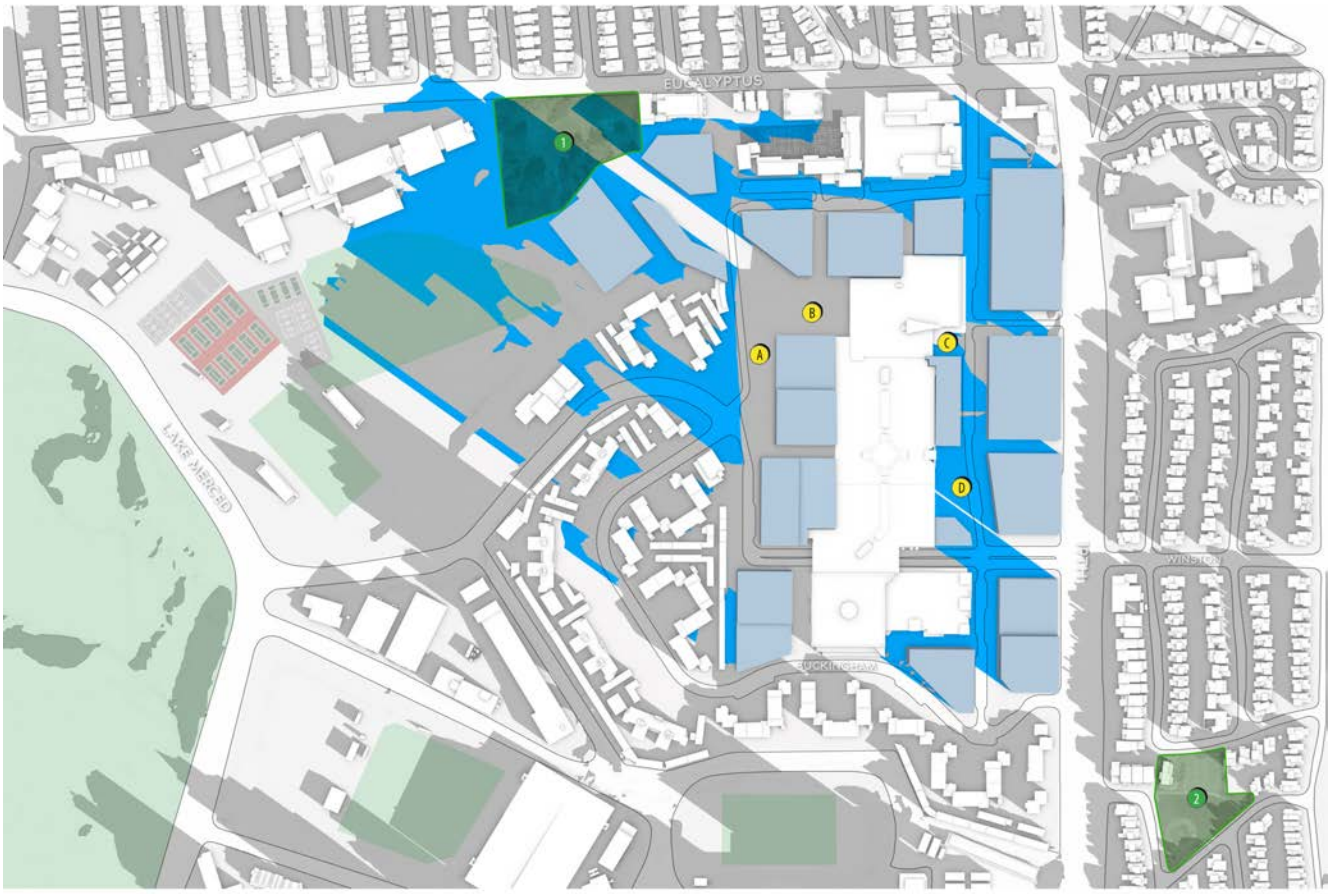


SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-11

APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 6:10 P.M.



SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-12
WINTER SOLSTICE, DECEMBER 21, 8:20 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-13
WINTER SOLSTICE, DECEMBER 21, 10 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-14
WINTER SOLSTICE, DECEMBER 21, 12 NOON

Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

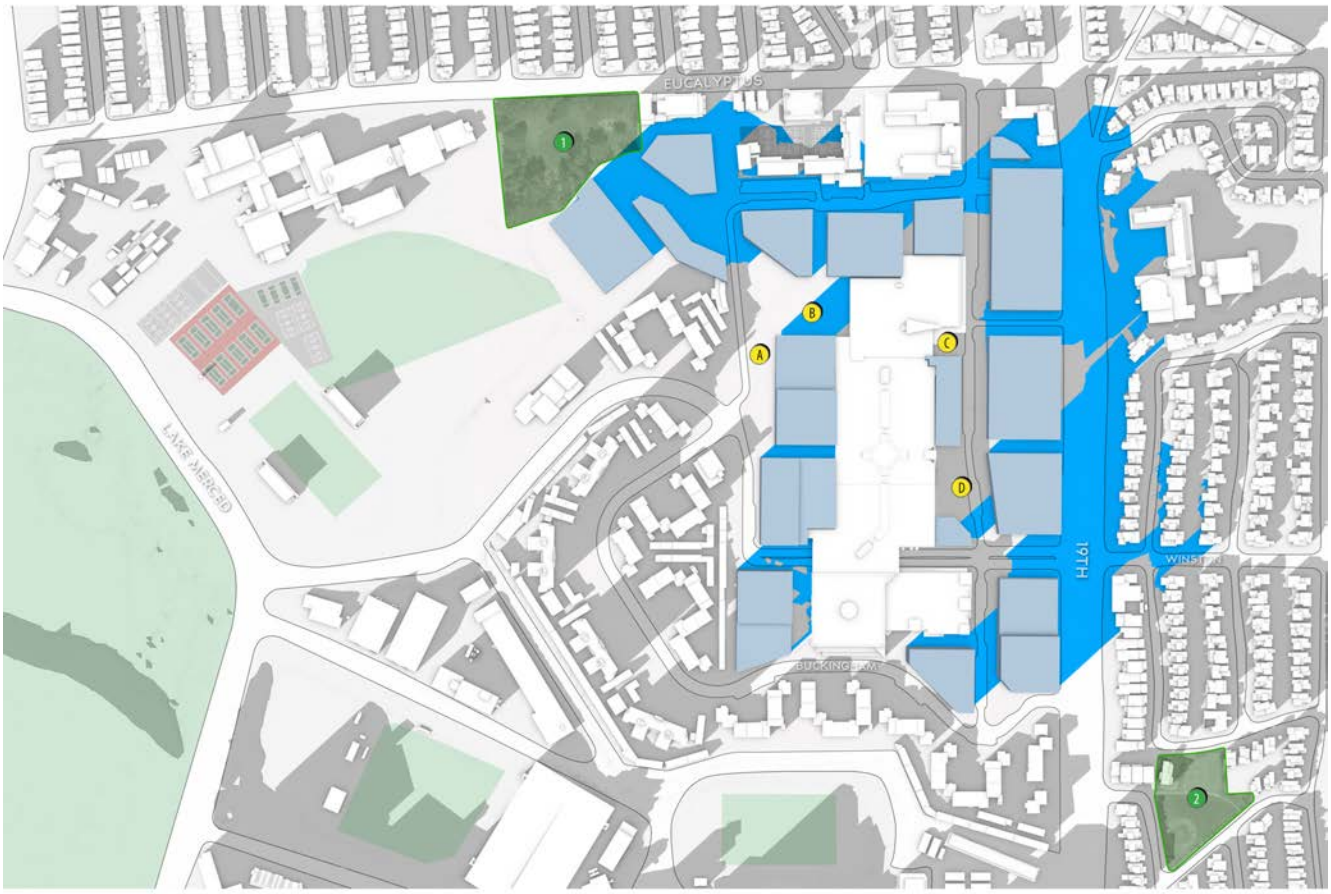
Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

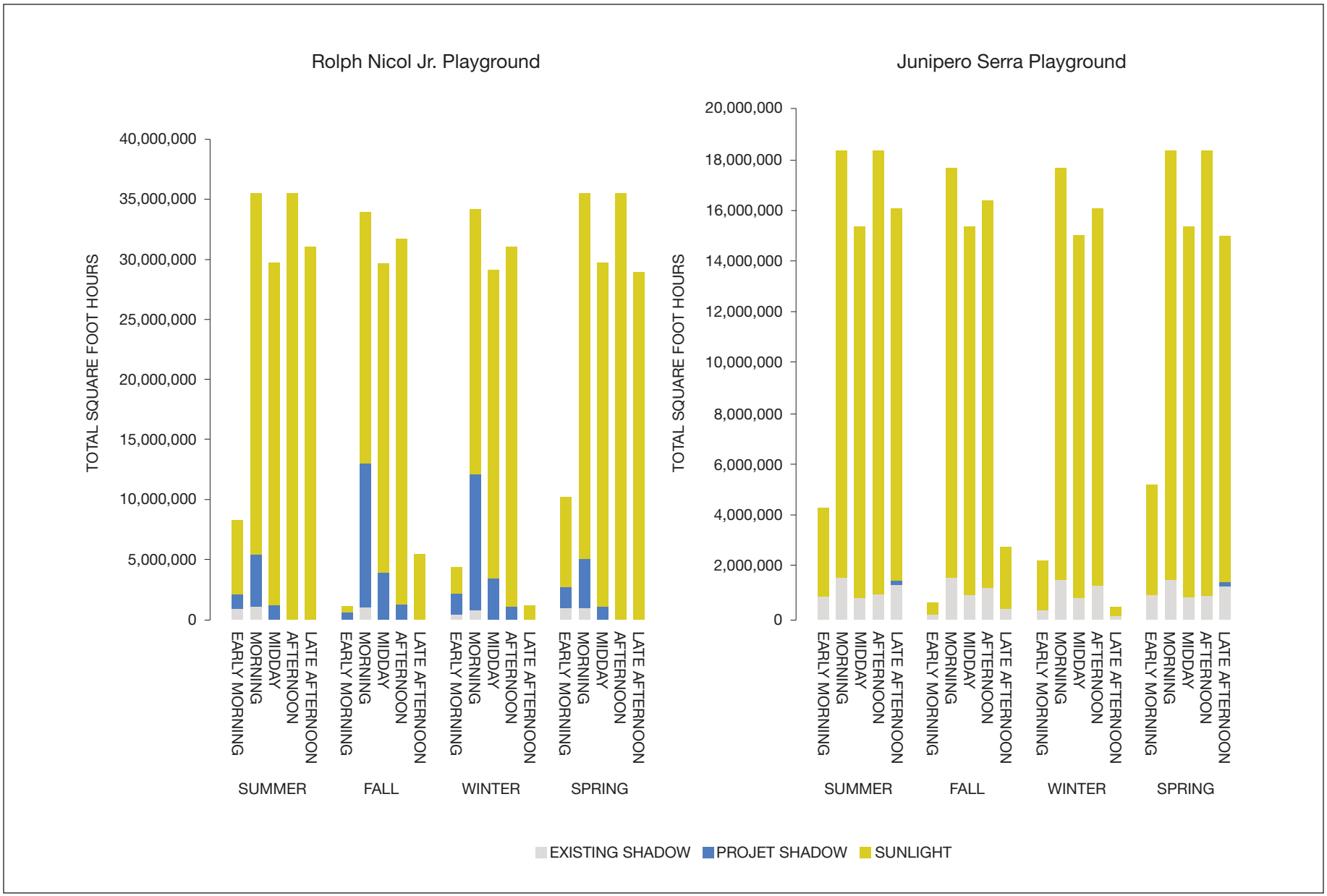
FIGURE 3.F-15
WINTER SOLSTICE, DECEMBER 21, 3 P.M.



SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-16
WINTER SOLSTICE, DECEMBER 21, 3:55 P.M.



SOURCE: ESA, 2022

Stonestown Development Project

FIGURE 3.F-17

EXISTING/PROPOSED PROJECT/VARIANT SHADOW/SUN CHART FOR ROLPH NICOL JR. PLAYGROUND AND JUNIPERO SERRA PLAYGROUND

Table 3.F-23 Rolph Nicol Jr. Playground Observation Data

Observation Time	Date of Visit	Park Users	Weather
Weekday Morning	6/2/2022	19	Partly sunny/fog
Weekday Midday	6/15/2022	9	Sunny
Weekday Afternoon	6/15/2022	22	Sunny
Weekend Afternoon	6/19/2022	13	Sunny
Weekend Midday	6/11/2022	22	Sunny
Weekend Morning	6/12/2022	19	Sunny

SOURCES: Fastcast 2022

Throughout the year, net new shadow from the proposed project or variant would fall on the open space in the morning and mostly recede by midday as the sun reaches its peak. Net new shadow coverage on the park in winter would decline from approximately 74 percent early in the morning to 20 percent by noon and would be less than 10 percent by 3 p.m. The children's play area would receive new shadow from the proposed project or variant from 8:20 a.m. to 9 a.m., and again from 1 p.m. to 2 p.m. on the winter solstice. The children's play area would also be partially shaded from 7:57 a.m. to shortly before 9 a.m. on the spring/fall equinoxes, and it would not receive any additional shadow during the summer solstice. The children's play area was observed to be busiest during weekends, and least used during weekday midafternoons. As most of the net new shadow would be present during early morning hours, the new shadow would not preclude the enjoyment of the play area. Net new shadow on the grassy area would be most noticeable in the winter and it would not receive any new shadow in the summer. In the winter, most of the grassy area would receive sunlight between the hours of 11 a.m. and 3 p.m., when observed use peaked as noted above. As such, enjoyment of the large grassy area would not be encumbered by new shadow from the proposed project or variant.

As a result of the limited extent of potential net new shadow that would be cast by the proposed project or variant, both in terms of area covered and length of time on any given day, and because the new shadow would not affect the park during times of heaviest use, new shadow would not be expected to substantially affect people's enjoyment of the park. Therefore, the overall shadow impact from the proposed project or variant on Rolph Nicol Jr. Playground would be ***less than significant***.

JUNIPERO SERRA PLAYGROUND

Net new shadow from the proposed project or variant would be cast on the Junipero Serra Playground for approximately 111 days per year in the late afternoon in spring and summer. This new shadow would be cast by the buildings on Blocks S1 and S2. The largest new shadow in terms of area covered would occur on June 21 at 7:36 p.m., when approximately 29 percent of the park would be shaded. On the summer solstice, new shadow would be cast between 7 to 7:36 p.m., and would continue to affect the park through sunset. As shown in the shadow diagrams, net new shadow from the proposed project or variant would not affect the park on the equinoxes or winter solstice. Moreover, the playground would not receive any net new shadow in the early morning, morning, midday, and afternoon analysis periods. During the late spring and summer, net new shading would occur during the last hour of the analysis period and would shade less than one-third of the playground. During this time, the majority of the hardcourt and tennis court would be shaded. As shown

in Figure 3.F-17, p. 3.F-23, the proposed project or variant would result in minimal new shadow compared to annual available sunlight.

As shown in **Table 3.F-24**, the playground was observed six times on six different dates in June 2022. In general, weekday mornings and midday had fewer park users than weekday afternoons and weekends. The majority of uses observed included children's play, tennis, basketball, dance/aerobics, softball, and one birthday celebration. The park is also used for Tiny Tot Gym classes and little league baseball games and practices. In general, the children's play area was lightly utilized on weekday mid-afternoons and more heavily used on the weekends at varying times throughout the day depending on weather conditions. The large grassy area also experienced relatively heavy usage compared to other areas of the park.

Table 3.F-24 Junipero Serra Playground Observation Data

Observation Time	Date of Visit	Park Users	Weather
Weekend Morning	6/11/2022	32	Fog with sun
Weekend Midday	6/11/2022	36	Clear conditions
Weekday Morning	6/15/2022	21	Fog with sun
Weekday Midday	6/16/2022	28	Clear conditions
Weekday Afternoon	6/16/2022	45	Clear conditions
Weekend Afternoon	6/18/2022	33	Clear conditions

SOURCES: Fastcast 2022

As stated above, net new shadow would only occur during the late afternoon in late spring and early summer (on the summer solstice, new shadow would occur from 7:36 p.m. to sunset). During the late afternoon, shadows would be relatively fast-moving and would cover only small areas at any given time. The areas of the park that would be shaded include the hardcourt and tennis court, Lyndhurst Drive entry, as well as a minor portion of the ballfield (rightfield). These areas of the park are not as sensitive to the addition of new shadow as other park features that are in a fixed location where more stationary activities occur (rather than active or pass-through activities), such as the children's play area, the park's fixed benches, tables, and seating areas. The new shadow on this open space would not substantially or adversely affect the use and enjoyment of this park considering it would occur at the end of the day at a time when park users would expect waning sunlight, and would not affect the areas of the park that are most sensitive to sunlight. Therefore, the shadow impact from the proposed project or variant on the Junipero Serra Playground would be ***less than significant***.

SUMMARY

The proposed project or variant would cast shadow on parks and open spaces in the vicinity of the project site at different times of the day and year. In particular, proposed project or variant shadow would reach Rolph Nicol Jr. Playground throughout the year in the morning and afternoon; and the Junipero Serra Playground during the late afternoon in late spring and early summer. Shadow from the proposed project or variant would not substantially or adversely affect the most used portions of these spaces; thus, implementation of the proposed project or variant (since the variant scenario represents the maximum

shadow impact) would not adversely or substantially affect the use and enjoyment of these open spaces. This impact would be ***less than significant***.

CUMULATIVE IMPACTS

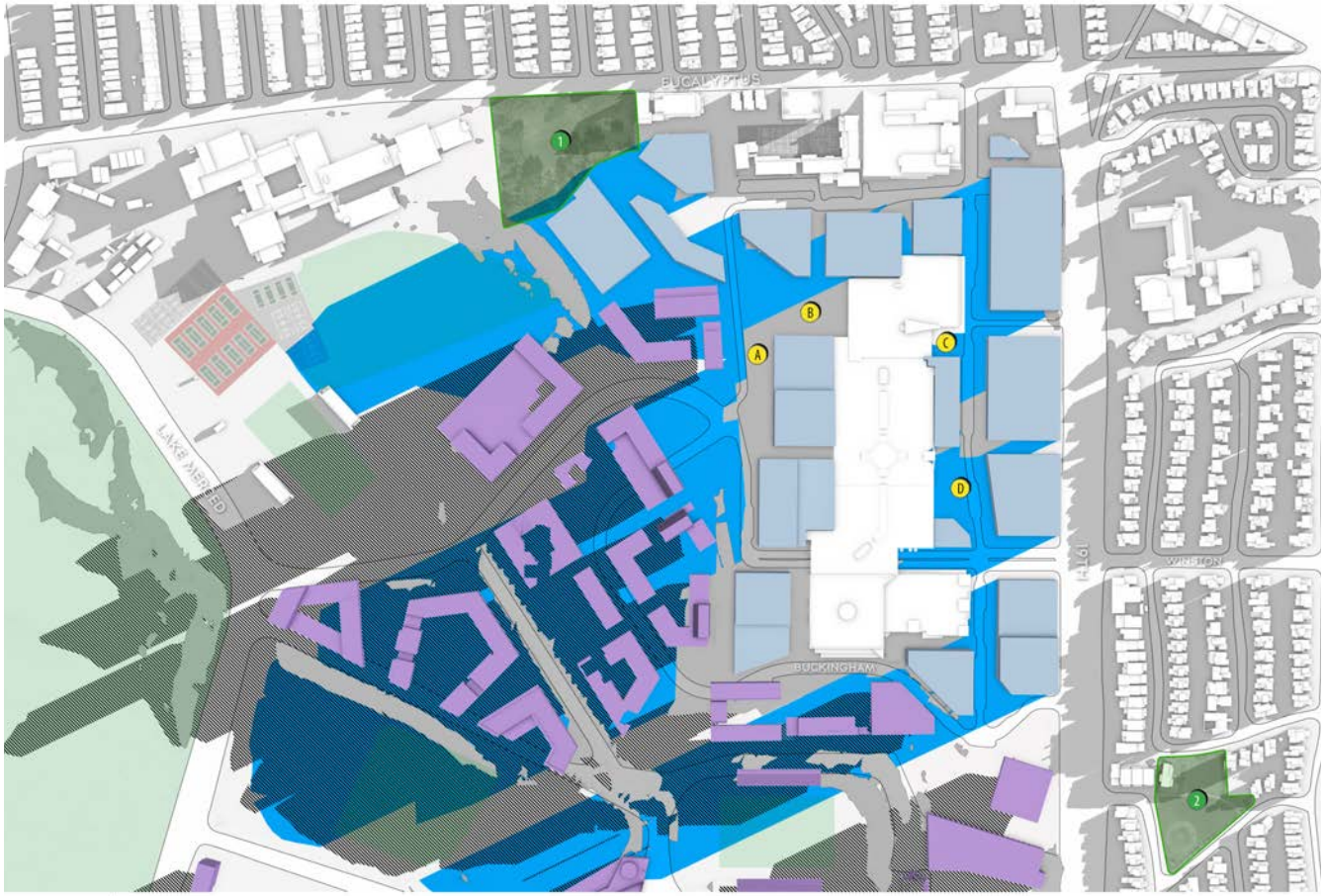
Projects listed in Table 3-1, p. 3-7, could combine with the proposed project or variant to result in a significant cumulative impact related to shadow. The geographic context for the analysis of cumulative shadow impacts includes other nearby buildings anticipated in the SFSU Future State 2035.[278] The cumulative context also includes future buildings anticipated to be demolished as part of this vision plan. The 460 West Portal Avenue and Parkmerced projects are not included, as the farthest potential reach of their shadows would not reach the affected open spaces reviewed by the shadow analysis.

Impact C-SH-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative shadow impact. ***(Less than Significant)***

Figure 3.F-18 through **Figure 3.F-32, p. 3.F-41,** depict existing, proposed project, and cumulative shadow for five representative times on the summer solstice (June 21), the spring/fall equinoxes (March 20/September 21), and the winter solstice (December 21). In these figures, gray areas represent shading occurring under existing conditions, dark blue represents net new shading that would occur as a result of the proposed project, and black and white cross-hatching represents cumulative net new shadow.

As shown in the figures, shadow from cumulative development would not affect the Rolph Nichol Jr. Playground on the spring/fall equinoxes and the summer solstice but would cover the playground on the winter solstice from about 8.20 a.m. until 9:30 a.m. (see Figure 3.F-28, p. 3.F-37). Cumulative shadow would recede from the park entirely after 9:30 a.m. and not affect the park for the rest of the day. In the morning in winter, cumulative shadow would be cast on an area of the park that is a grove of trees and is likely shaded year-round by existing tree cover. As noted above, the shadow model does not take into account shadow from trees or landscaping. Cumulative shadow, which would be primarily from the proposed project or the variant, would fall on the park year-round. Shadow from cumulative projects without the proposed project or variant would occur from 8 to 9 a.m. in mid-November through late January; however, this shadow would never cover more than approximately 800 square feet of the park at any time and would be relatively minor compared to the proposed project or variant's shadow. The largest new shadow in terms of area covered would be on December 20 to 21 (on these dates, approximately 74 percent of the park would be covered at 8:19 a.m.). The date of maximum shading and area covered would be the same under the cumulative scenario as under the proposed project or variant because the majority of shadow occurring year-round under the cumulative scenario would result from buildout of the proposed project or variant. In the winter, most of the grassy area would receive sunlight between the hours of 11 a.m. and 3 p.m., when observed use peaked as noted above. As described above under Impact SH-1, the majority of observed uses qualified as pass-through or moderate activity, including dog walking and walking through the park as a pathway to neighboring destinations such as the Stonestown Galleria Mall, Lowell High School and SFSU. In general, the children's play area was lightly utilized on weekday midafternoons and more heavily used on the weekends at varying times throughout the day depending on weather conditions. As most of the new shadow would be present during early morning

[278] San Francisco State University, Future State 2035: Campus Vision Plan, September 14, 2018, https://plan.sfsu.edu/sites/default/files/documents/futurestate_draft.pdf, accessed August 30, 2022.



Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow
Cumulative Structures
Cumulative Shadows

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-18
CUMULATIVE SHADOW, SUMMER SOLSTICE, JUNE 21, 6:47 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-19

CUMULATIVE SHADOW, SUMMER SOLSTICE, JUNE 21, 10 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-20

CUMULATIVE SHADOW, SUMMER SOLSTICE, JUNE 21, 12 NOON

Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow
Cumulative Structures
Cumulative Shadows

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

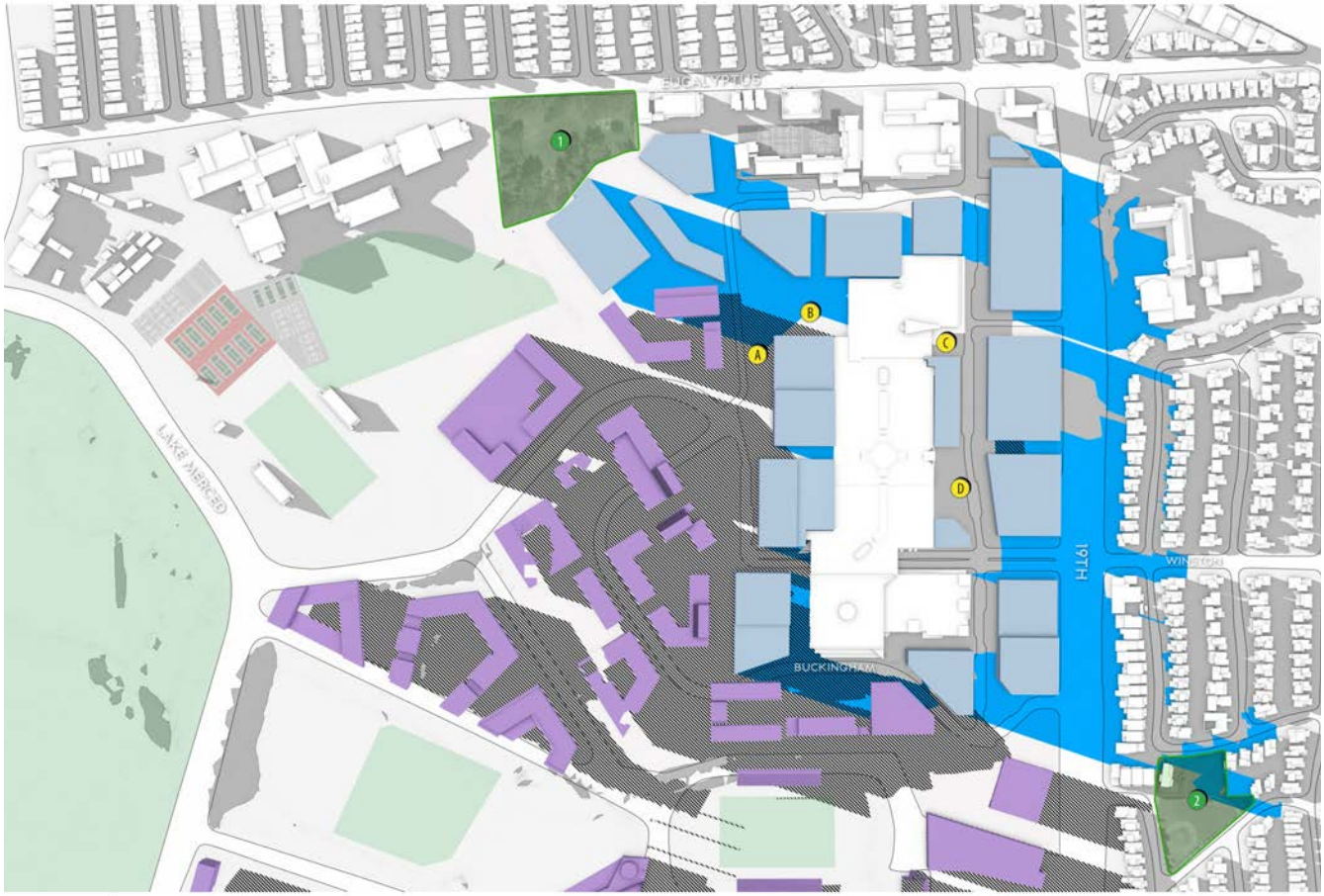
Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-21
CUMULATIVE SHADOW, SUMMER SOLSTICE, JUNE 21, 3 P.M.

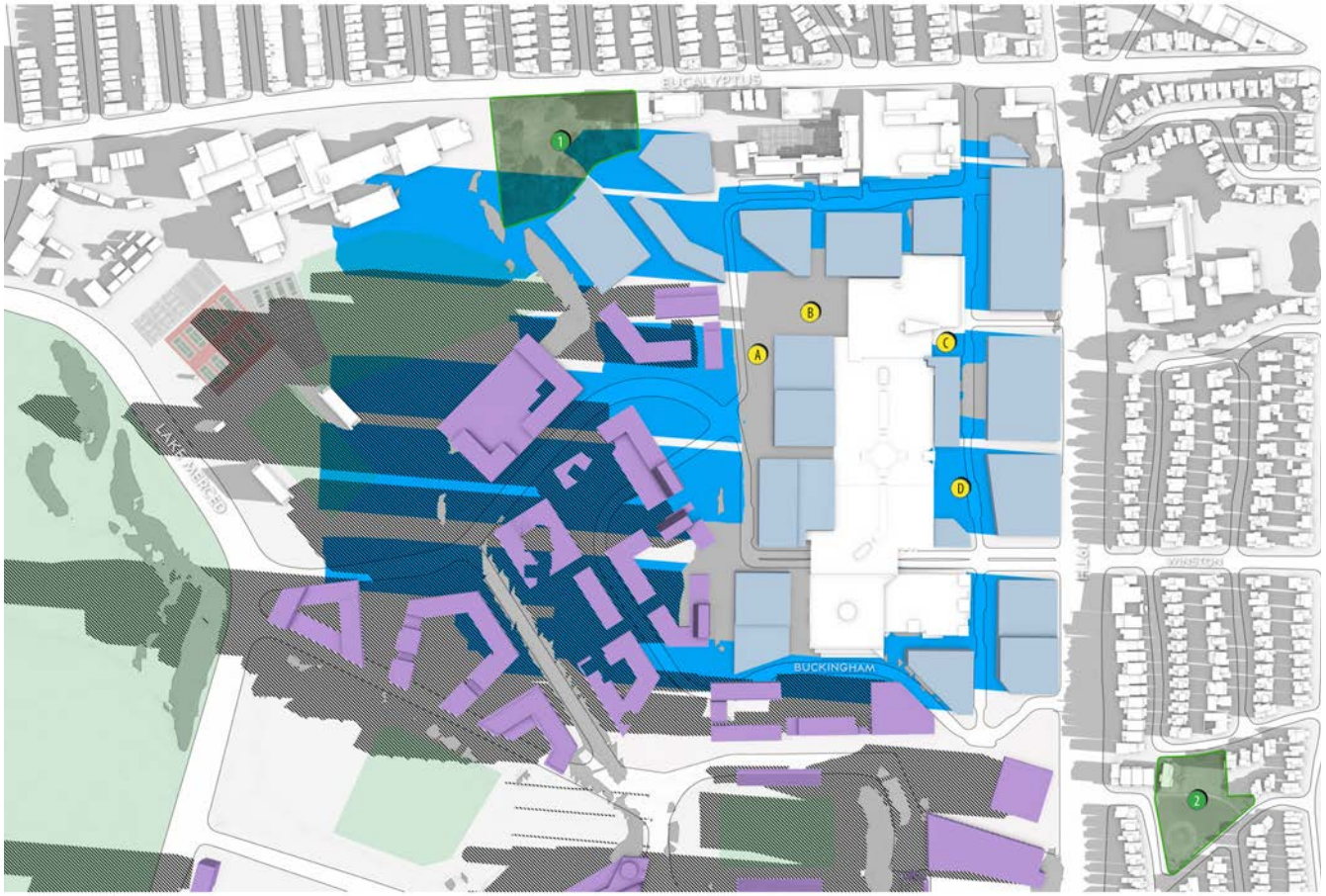


SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-22

CUMULATIVE SHADOW, SUMMER SOLSTICE, JUNE 21, 7:36 P.M.



SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-23

CUMULATIVE SHADOW, APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 7:57 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-24

CUMULATIVE SHADOW, APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 10 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-25

CUMULATIVE SHADOW, APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 12 NOON

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-26

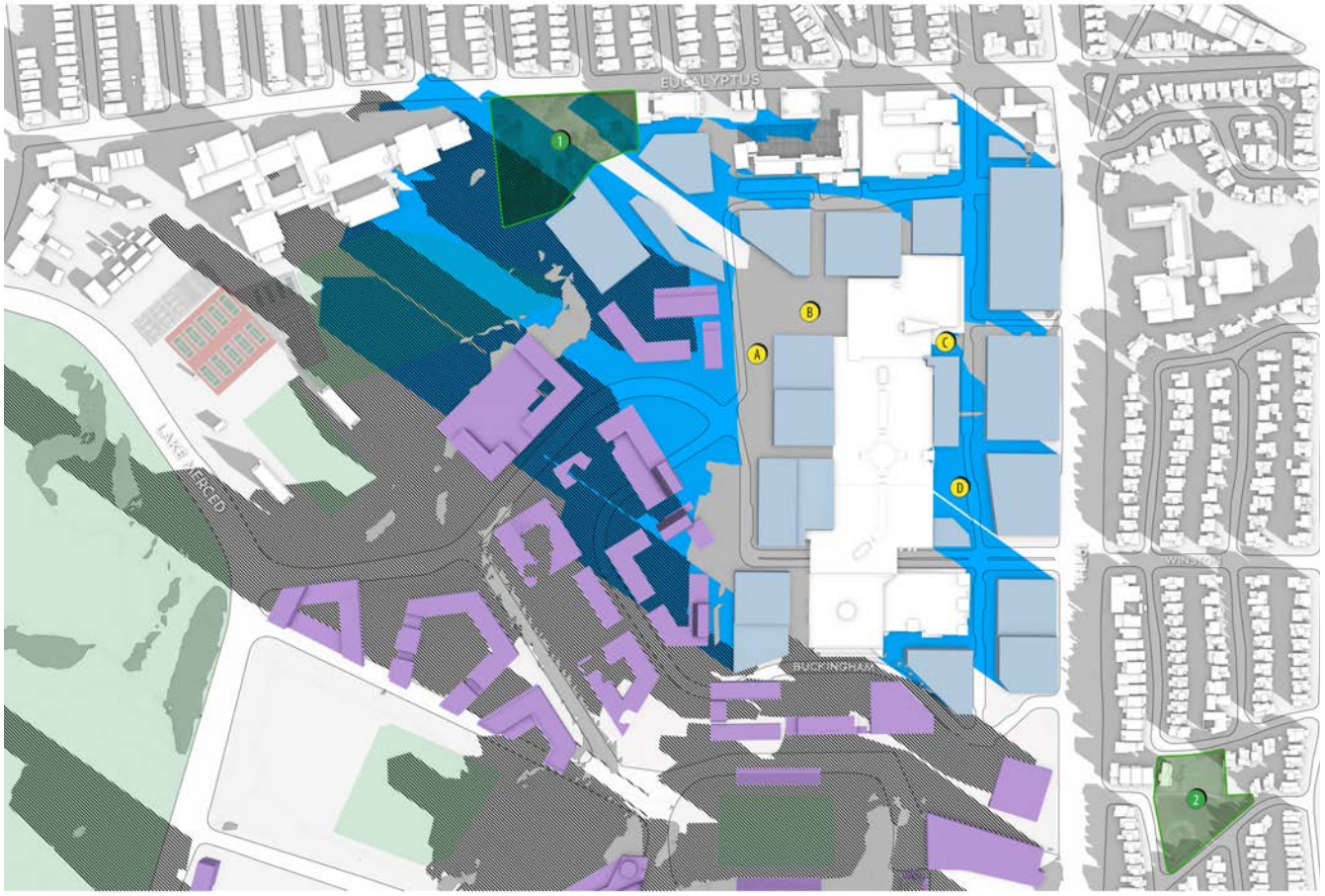
CUMULATIVE SHADOW, APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 3 P.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-27

CUMULATIVE SHADOW, APPROXIMATE FALL EQUINOX (SPRING SIMILAR), SEPTEMBER 21, 6:10 P.M.



Existing Structures
Existing Shadows
Stonestown Project
Proposed Project's Net New Shadow
Cumulative Structures
Cumulative Shadows

Rec/Park Open Spaces
1 Rolph Nicol Park
2 Junipero Serra Playground

Proposed Open Spaces
A
B
C
D

N

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-28
CUMULATIVE SHADOW, WINTER SOLSTICE, DECEMBER 21, 8:20 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-29

CUMULATIVE SHADOW, WINTER SOLSTICE, DECEMBER 21, 10 A.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-30

CUMULATIVE SHADOW, WINTER SOLSTICE, DECEMBER 21, 12 NOON

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-31

CUMULATIVE SHADOW, WINTER SOLSTICE, DECEMBER 21, 3 P.M.

SOURCE: Fastcast, 2022

Stonestown Development Project

FIGURE 3.F-32

CUMULATIVE SHADOW, WINTER SOLSTICE, DECEMBER 21, 3:55 P.M.

hours, the new shadow would not preclude the enjoyment of the play area, which would receive substantial sunlight after 10 a.m. and through the remainder of the day. Therefore, enjoyment of the play area and large grassy area would not be encumbered by new shadow from cumulative projects, and cumulative shadow would not be noticeable to users of the park. The cumulative shadow impact on the Rolph Nichol Jr. Playground would be ***less than significant***.

Cumulative shadow would not affect the Junipero Serra Playground in spring, summer, or fall, but would affect the playground between 3 to 3:55 p.m. and until sunset on the winter solstice (see Figure 3.F-32, p. 3.F-41). As shown in the figure, cumulative shadow, which would only occur during the last hour before sunset, would cover a negligible portion of the baseball diamond. Most shadow would occur when the park would likely have fewer users than at other times of the year, such as during baseball or softball season in the summer. Therefore, the cumulative shadow impact on the Junipero Serra Playground would be ***less than significant***.

SUMMARY

Due to the limited extent, duration, and time of year when cumulative shadow would occur on the Rolph Nichol Jr. Playground and Junipero Serra Playground, cumulative shadow on these open spaces would not substantially or adversely affect the use and enjoyment of these open spaces. Therefore, the cumulative impact would be ***less than significant***.

SUPPLEMENTAL INFORMATION

INFORMATIONAL DISCUSSION OF SHADOW ON PROPOSED NEW ONSITE OPEN SPACES

The following characterizes the shadow that would be cast by proposed buildings on the proposed onsite open spaces and is presented for informational purposes. The onsite open spaces would be publicly accessible but would not be under the jurisdiction of the parks commission and would not be subject to planning code section 295. Because none of the onsite open spaces would exist but for the proposed project or variant, the CEQA analysis covers impacts of a project on existing conditions, and not on elements of the project itself. Therefore, there is no shadow impact, under CEQA, to these open spaces, which do not currently exist.

Many of these open spaces would be shaded by the existing mall and proposed project or variant buildings throughout the day, year-round. In summer, from sunrise to about 9 a.m., proposed open spaces shown on Figure 2-10, p. 2-19, would be substantially shaded by the buildings on Blocks W3/4, E2, E3, and E4. Shadow would mostly recede from these parks by midday but would return in the late afternoon. On the spring/fall equinoxes, except for Winston Entry, all other proposed open spaces would be completely shaded by existing and proposed shadows from one hour after sunrise until about 9 a.m.; this shadow would be cast by the same buildings as noted above. Proposed project or variant shadows would continue to shade these proposed open spaces throughout the rest of the day. In winter, these proposed open spaces would be almost entirely shaded from sunrise until 10 a.m. by the buildings noted above, along with the building on Block S2, and would be mostly shaded throughout the rest of the day. The only proposed open space that would have substantial available sunlight would be Linear Park, which would only have a minor amount of shading in the afternoon in winter.

3.G Utilities and Service Systems

3.G.1 Introduction

This section describes the existing utilities and service systems that serve the project site, evaluates the potential construction and operational impacts on utilities and service systems associated with implementation of the proposed project or variant, and identifies mitigation measures to avoid or reduce potential adverse impacts. Utilities topics consist of temporary or permanent increases in water supply, water, or wastewater; excessive generation of stormwater and solid waste, and compliance with statutes and regulations related to solid waste.

3.G.2 Environmental Setting

WATER SUPPLY

BACKGROUND ON HETCH HETCHY REGIONAL WATER SYSTEM

San Francisco's Hetch Hetchy regional water system, operated by the San Francisco Public Utilities Commission (SFPUC), supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and 27 wholesale customers in Alameda, Santa Clara, and San Mateo counties. The system supplies an average of 85 percent of its water from the Tuolumne River watershed, stored in the Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an in-city distribution system that serves retail customers in San Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater and recycled water.

2020 URBAN WATER MANAGEMENT PLAN

The California Urban Water Management Planning Act[279] requires urban water supply agencies to prepare urban water management plans to plan for the long-term reliability, conservation, and efficient use of California's water supplies to meet existing and future demands. The act requires water suppliers to update their plans every five years based on projected growth for at least the next 20 years.

Accordingly, the current urban water management plan for San Francisco is the 2020 Urban Water Management Plan (2020 plan) update.[280] The 2020 plan projects water supplies and demand through 2045 and presents information on the SFPUC's water supply system, water supply reliability, Water Conservation Act of 2009 compliance, water shortage contingency planning, and water demand management.

[279] California Water Code, division 6, part 2.6, sections 10610 through 10657, as last amended in 2020.
[280] San Francisco Public Utilities Commission, *2020 Urban Water Management Plan for the City and County of San Francisco*, adopted June 11, 2021. This document is available at https://www.sfpuc.org/about-us/policies-plans/urban-water-management-plan.

The 2020 plan compares anticipated water supplies to projected demand through 2045 for normal, single-dry, and multiple-dry water years.[281] Under normal hydrologic conditions, the SFPUC projects it will have sufficient supplies to meet projected demands, which increase from 68.8 million gallons per day (mgd) in 2020 to 80.6 mgd in 2045 (see 2020 plan Table 6-5, p. 6-13). According to the 2020 plan, available and anticipated future water supplies would fully meet projected demand in San Francisco through 2045 during normal years. There are several factors affecting the ability of the regional water system to deliver water during droughts, including the adoption of the 2018 Bay-Delta Plan Amendment (discussed below), potential state and federal regulations, and additional water supply decisions.

2018 BAY-DELTA PLAN AMENDMENT

In December 2018, the State Water Resources Control Board (state water board) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment), to establish water quality objectives with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. Specifically, the Bay-Delta Plan Amendment requires the release of 30 to 50 percent of the unimpaired flow[282] from the three tributaries from February through June every year, whether it is wet or dry. In SFPUC modeling of the new flow standard, it is assumed that the required release from the Tuolumne River is 40 percent of unimpaired flow. During dry years, this would result in a substantial reduction in the SFPUC's water supplies from the Tuolumne River watershed.

If the Bay-Delta Plan Amendment is implemented, the SFPUC would be able to meet the projected demand in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls and rationing throughout the SFPUC's regional water system service area, including San Francisco. Without the implementation of the Bay-Delta Plan Amendment, the SFPUC would not experience shortages until the fourth and fifth year of a multi-year drought at 2045 levels of projected demand.

The state water board has indicated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. However, at this time, the implementation of the Bay-Delta Plan Amendment is uncertain due to pending legal challenges and outstanding regulatory actions.[283]

In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [state water board] as early as possible after December 1, 2019." In accordance with the state water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a substitute agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted

[281] A "normal year" is based on historical hydrological conditions that allow the reservoirs to be filled by rainfall and snowmelt, allowing full deliveries to customers; similarly, a "wet year" and a "dry year" is based on historical hydrological conditions with above and below "normal" rainfall and snowmelt, respectively.
[282] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.
[283] For additional information, refer to Section 7.3, Factors Affecting Future RWS Supplies, in the 2020 plan.

Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. To date, those negotiations are ongoing.

Whether, when, and the form in which the Bay-Delta Plan Amendment will be implemented, and how those amendments will affect the SFPUC's water supply, is currently unknown. In acknowledgment of these uncertainties, the 2020 plan presents future supply scenarios both with and without the Bay-Delta Plan Amendment. The two scenarios provided are intended to bookend the potential future supply conditions for the Regional Water System.

ADDITIONAL WATER SUPPLIES

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve overall water supply resilience through the Alternative Water Supply Planning Program. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the water supply assessment for the variant[284] and the 2020 plan.

The capital projects that are under consideration would be costly and are still in the early feasibility or conceptual planning stages. These projects would take 10 to 30 or more years to implement and would require environmental permitting negotiations, which may reduce the amount of water that can be developed. For these reasons, the yield from these projects is unknown and not currently incorporated into SFPUC's supply projections.

In addition to capital projects, the SFPUC is also considering developing related water demand management policies and ordinances, such as funding for innovative water supply and efficiency technologies and requiring potable water offsets for new developments.

IN-CITY WATER DISTRIBUTION SYSTEM

San Francisco maintains two primary water systems within the City and County limits that provide potable and firefighting water to the city, referred to as in-city water distribution systems. One is a low-pressure system that provides potable water from the regional water system for domestic and industrial uses and for firefighting. The potable water distributed in this system is part of the retail water supply described above. The other system is a high-pressure emergency firefighting water system (EFWS, formerly known as the Auxiliary Water Supply System (AWSS)) that provides a supplemental source of non-potable fresh water for firefighting purposes. Both of these systems are described below.

San Francisco's in-city distribution system (Public Water System No. CA3810011) was originally developed during the 100-year period between 1860 and 1960, reflecting the patterns and rates of growth in the city. Several major pipelines convey regional water system supply from the Peninsula System to the city. Water to the eastside of the in-city distribution system is fed by two pipelines that terminate at University Mound Reservoir. Water to the westside of the in-city distribution is fed by two pipelines that terminate at Sunset Reservoir and one that terminates at Merced Manor Reservoir.

[284] A water supply assessment was prepared for the project using the variant projected demand because it represents the most conservative buildout for the project site from a water demand perspective.

LOW-PRESSURE WATER SYSTEM

Domestic potable water is delivered to city customers via the in-city distribution system, which includes ten reservoirs and eight water tanks that store water supplied by the SFPUC. Seventeen pump stations and approximately 1,250 miles of pipelines move water throughout the system and deliver water to homes and businesses in the city. Potable water is delivered to the project site via pipelines in Winston Drive, Buckingham Way, 19th Avenue, 20th Avenue, and Eucalyptus Drive. This system also provides low-pressure water to the site for firefighting purposes.

HIGH-PRESSURE EMERGENCY FIREFIGHTING WATER SYSTEM

The City's EFWS is an independent, high-pressure water supply system for fire suppression. The system delivers water at high pressure and includes two pump stations, two storage tanks, one reservoir, and approximately 135 miles of pipes. The nearest EFWS facilities to the project site are cisterns located below ground near the intersections of 21st Avenue and Ocean Avenue, and Inverness Drive and Ocean Avenue, both approximately 1,000 feet north or northwest of the project site.[285] The nearest pipelines are located approximately 1,700 feet east of the site within Ocean Avenue and San Fernando Way. Since 2010 SFPUC has completed multiple system upgrades using funds from the Earthquake Safety and Emergency Response Bond Program. Bonds were sold in 2010, 2014, and 2020. As of 2022, approximately 80 projects improving the EFWS have been identified and are in various stages of completion, including a pipeline in 19th Avenue from Vicente Street to Sloat Boulevard.[286] Preliminary alignments of future improvements to the EFWS also include pipelines to the south and west of the site, at a similar distance from the site as the existing pipelines.[287]

RECYCLED WATER SYSTEM

The project site is located within the City's designated recycled water use area, defined under San Francisco Public Works Code article 22, as described below. While the Westside Recycled Water Project is currently under construction on the west side of San Francisco, it would supply an annual average of up to 2 mgd of recycled water for irrigating Golden Gate Park, Lincoln Park and Golf Course, San Francisco Zoo, Presidio Golf Course, and other landscaped areas of the Presidio. As discussed above, the SFPUC is considering alternative water supply projects to improve overall water supply resilience, including additional recycled water facilities.

WASTEWATER AND STORMWATER

COMBINED SEWER SYSTEM

The SFPUC operates a combined sanitary sewer and stormwater system in San Francisco that is roughly divided into two major drainages: the Bayside and Westside watersheds. The project site is located in the Westside watershed, which is approximately 11,000 acres and drains towards the Pacific Ocean. The combined sewer system conveys and treats wastewater at three SFPUC treatment facilities: the Southeast Water Pollution Control Plant, the Oceanside Water Pollution Control Plant (Oceanside Treatment Plant), and the North Point Wet Weather Facility. Combined stormwater and wastewater from the project site receives

[285] San Francisco Public Utilities Commission, Emergency Firefighting Water System (EFWS), https://sfgov.maps.arcgis.com/apps/MapJournal/index.html?appid=44ef33b414a940b0abaa286856acf044, accessed September 28, 2022.
[286] San Francisco Public Works, The Earthquake Safety and Emergency Response Bond Program 2010, 2014 & 2020 Quarterly Status Report, April through June 2022.
[287] San Francisco Public Utilities Commission, Emergency Firefighting Water System (EFWS), https://sfgov.maps.arcgis.com/apps/MapJournal/index.html?appid=44ef33b414a940b0abaa286856acf044, accessed September 28, 2022.

treatment at the Oceanside Treatment Plant, just east of South Ocean Beach, before being discharged into the Pacific Ocean. The Oceanside Treatment Plant is permitted to discharge 43 mgd, and the average dry weather flow to the Oceanside Treatment Plant during the year 2020 was 12.0 mgd.[288] Therefore, the existing dry weather flows are about 16 percent of the permitted treatment capacity.

STORMWATER AND WASTEWATER MANAGEMENT AT THE SITE

The existing combined sewer system within the project site consists of a network of pipelines that collect stormwater and sanitary sewer flows from the existing mall, surrounding buildings, and associated parking lots. The majority of pipelines within the project site flow from east to west and discharge wastewater to the City's existing combined sewer system facilities through Lowell High School to the northwest of the project site. The portions of the project site south of Winston Drive drain to the south and connect to existing combined sewer facilities within Buckingham Way.

SOLID WASTE

San Francisco uses a three-cart collection program: residents and businesses sort solid waste into recyclables, compostable items, such as food scraps and yard trimmings, and garbage that cannot be recycled or composted. San Francisco generated approximately 719,460 and 516,525 tons of solid waste during 2019 and 2020, respectively.[289] Recology collects and processes all residential and commercial waste, recycling, and composting for San Francisco through its subsidiaries: San Francisco Recycling and Disposal, Golden Gate Disposal and Recycling, and Sunset Scavenger. All materials are taken to the San Francisco Solid Waste Transfer and Recycling Center where it is sorted for transport to composting and recycling facilities and landfills. Waste that is not composted or recycled is currently taken to the Recology Hay Road Landfill in Solano County. In September 2015, the City entered into a landfill disposal agreement with Recology Inc. for disposal of all solid waste collected in San Francisco at the Recology Hay Road Landfill in Solano County for nine years or until 3.4 million tons have been disposed, whichever occurs first. The City would have an option to renew the agreement for a period of six years or until an additional 1.6 million tons have been disposed, whichever occurs first.[290] The Recology Hay Road Landfill has a maximum permitted capacity of 42 million cubic yards, and is permitted to accept up to 3,200 tons per day of solid waste; as of May 2018, 24.9 million cubic yards of disposal capacity was available for solid waste disposal.[291,292] At that maximum permitted rate, the landfill has the capacity to accommodate solid waste until approximately 2065. The City's contract with the Recology Hay Road Landfill will extend until 2031 or when the City has disposed 5 million tons of solid waste, whichever occurs first. At that point, the City would either further extend the landfill contract or find and entitle an alternative landfill site.

[288] San Francisco Public Utilities Commission, *2020 Annual Self-Monitoring Report Oceanside Water Pollution Control Plant*, submitted January 29, 2021.
[289] CalRecycle, Disposal Rate Calculator for San Francisco, Years 2019 and 2020, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator, accessed September 27, 2022.
[290] San Francisco Planning Department, *Agreement for Disposal of San Francisco Municipal Solid Waste at Recology Hay Road Landfill in Solano County, Final Negative Declaration*, Planning Department Case No. 2014.0653, https://sfplanning.s3.amazonaws.com/sfmea/2014.0653E_Revised_FND.pdf, accessed September 23, 2022.
[291] Solano County, *Recology Hay Road Landfill Conditional Use Permit Amendment No. 2 Draft Subsequent EIR*, State Clearinghouse Number 2018032031, December 2019.
[292] Solid Waste Facility Permit, Recology Hay Road, issued December 10, 2021.

3.G.3 Regulatory Framework

This section describes the regulatory framework related to water supply planning as well as disposition of biosolids and solid wastes. Appendix B, Initial Study, Section E.16, Hydrology and Water Quality, describes federal and state regulations regarding stormwater and wastewater.

FEDERAL REGULATIONS

There are no federal policies relevant to utilities for the proposed project or variant.

STATE REGULATIONS

CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS (ENERGY CODE; CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 6)

The California Building Energy Efficiency Standards (also called the Energy Code) contain energy and water efficiency requirements (and indoor air quality requirements) for newly constructed buildings, additions, and alterations. The Energy Code establishes standards applicable to the building envelope, space-conditioning systems, water-heating systems, pool and spas, solar ready buildings, indoor lighting systems of buildings, outdoor lighting systems, electrical power distribution systems, and signs located either indoors or outdoors in buildings. The most recent Energy Code (adopted in 2021) encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, and strengthens ventilation standards, among other requirements.

SENATE BILL 610 – WATER SUPPLY ASSESSMENTS

Senate Bill (SB) 610 requires local water providers to conduct a water supply assessment for projects proposing over 500 housing units, 250,000 square feet of commercial office space (or more than 1,000 employees), a shopping center or business establishment with over 500,000 square feet (or more than 1,000 employees), or equivalent usage.[293] SB 610 is codified under sections 10910 through 10915 of the California Water Code. The proposed project or variant would construct up to 2,930 and 3,080 residential units, respectively, and therefore would be required to prepare a water supply assessment.

CALIFORNIA URBAN WATER MANAGEMENT PLANNING ACT – WATER SUPPLY PLANNING

The 1983 California Urban Water Management Planning Act (UWMP)[294] requires every urban water supplier to prepare and adopt a UWMP and update it every five years. The UWMP must describe demographic factors affecting water management planning (such as projected population changes), describe and quantify (if possible) existing and planned sources of water available to the supplier in five-year increments to 20 years or as far as data are available, and describe the reliability and vulnerability of the water supply. The UWMP must include all water supply projects and programs that may be undertaken by the urban water supplier to meet the total projected water demand. The 2020 Urban Water Management Plan was adopted in 2021 to assure a plan for long-term reliability, conservation, and efficient use of water supplies to meet existing and future demands. The UWMP requires that planning projections extend at least 20 years beyond the year of the UWMP (i.e., through 2040 for the 2020 UWMP cycle).

[293] SB 610 is codified in California Public Resources Code sections 10910–10915.
[294] California Water Code sections 10610–10656, as amended.

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT – WASTE DIVERSION

The California Integrated Waste Management Act of 1989,[295] enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, requires all California cities and counties to implement programs to divert at least 50 percent of all solid waste generated by the year 2000 and establishes the goal of diverting at least 75 percent of generated waste (based on per capita disposal rates) by 2020. A jurisdiction's diversion rate is the percentage of its total waste that it diverts from disposal through reduction, reuse, recycling, and composting programs. The law requires all California counties in coordination with their respective cities to develop and implement integrated waste management plans. As part of their integrated waste management plans, counties must ensure that a minimum of 15 years of disposal capacity is available to serve the county and its cities. Since 2007, the achievement of waste diversion rates has been measured based on per capita disposal rates, expressed in pounds per person per day of wastes disposed of in landfills. To achieve the target waste diversion rates, the California Department of Resources Recycling and Recovery (CalRecycle) has established a target disposal rate of 6.6 pounds per person per day in San Francisco in 2014.[296] In 2019, the per capita disposal rate for residents of San Francisco was 4.5 pounds per person per day and for employees in San Francisco was 5.3 pounds per person per day.[297]

In 2011, California's Mandatory Commercial Recycling Law (AB 341) established a policy goal for California to source-reduce, recycle, or compost not less than 75 percent of the solid waste generated by 2020 and requires businesses and public entities that generate 4 cubic yards (cy) or more of commercial solid waste per week, and multi-family entities with five units or more, to arrange for recycling services.

RECYCLING OF ORGANIC WASTE

Public Resources Code section 42649.8 requires businesses that generate four cubic yards or more of commercial solid waste per week to arrange for organic waste recycling services and either source separate organic waste, recycle onsite or self-haul organic waste for recycling, or subscribe to a service that specifically recycles organic waste.

CALIFORNIA PUBLIC UTILITIES COMMISSION GENERAL ORDER NO. 159A

California Public Utilities Commission General Order No. 159A, Rules Relating to the Construction of Commercial Mobile Radio Service Facilities in California, requires that no cellular service provider begin construction of any cell site or mobile telephone switching office without first having obtained all requisite land use approvals required by the relevant local government agency, with limited exceptions to balance statewide interests with local concerns regarding the siting, design, and construction of cell sites and mobile telephone switching offices. One of the goals of General Order No. 159A is to ensure that the potential environmental impacts of all cell sites and mobile telephone switching offices are reviewed and considered in a manner consistent with the CEQA.

[295] California Public Resources Code division 30, sections 40000–49620.
[296] CalRecycle, Jurisdiction Diversion/Disposal Rate Detail for San Francisco, Reporting Year 2014, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/ReviewReports, accessed September 27, 2022.
[297] CalRecycle, Disposal Rate Calculator, Instructions, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator, accessed September 27, 2022.

LOCAL REGULATIONS

SAN FRANCISCO ALL-ELECTRIC BUILDING ORDINANCE

San Francisco Building Code section 106A.1.17.1 requires new buildings in San Francisco to be designed and constructed such that all space conditioning, water heating, cooking, and clothes drying systems are all-electric, and prohibits installation of infrastructure, piping systems, or piping for distribution of natural gas or propane to such systems, with limited exceptions.[298] An "all-electric" building or project relies on electricity as the source of energy for all space heating, space cooling, water heating, cooking, and clothes drying.

SAN FRANCISCO RESIDENTIAL WATER CONSERVATION ORDINANCE

San Francisco Housing Code chapter 12A (Residential Water Conservation Ordinance) requires the installation of water conservation devices in all residential buildings, except for tourist hotels and motels, upon the occurrence of specific events such as when the building undergoes major improvements, when there is a meter conversion, when there is a condominium conversion, and when there is a transfer of title. Water conservation measures include "low-flow" showerheads, faucets, and toilets, and leak repair.

SAN FRANCISCO COMMERCIAL WATER CONSERVATION ORDINANCE

San Francisco Building Code chapter 13A (Commercial Water Conservation Ordinance) requires the installation of water conservation devices in commercial buildings, including tourist hotels and motels. With limited exceptions for historic buildings, all commercial buildings must implement water conservation measures consistent with this ordinance, including "low-flow" showerheads, faucets, and toilets, and leak repair.

SAN FRANCISCO NON-POTABLE WATER ORDINANCE

San Francisco Health Code article 12C, Non-potable Water Ordinance, requires that new development projects of 100,000 gross square feet or more are required to install and operate onsite water reuse systems and meet certain water demands with the onsite non-potable water. Commercial buildings that install building-by-building alternate water source systems must meet toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate (water vapor collected from air conditioning systems). Residential and mixed-use buildings must meet toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate.

The proposed project or variant would include the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, and irrigation or landscaped areas.

[298] Building Code section 106A.1.17.1 allows for approval of gas infrastructure and piping systems to be installed on a case-by-case basis where all-electric construction is demonstrated to be physically or technically infeasible.

SAN FRANCISCO RECYCLED WATER USE ORDINANCE

Article 22 of the San Francisco Public Works Code (Recycled Water Use Ordinance), requires property owners located within designated recycled water use areas to install recycled water systems in new construction, modified, or remodel projects. This applies to following types of developments:

- New construction or major alterations to a building totaling 40,000 square feet or more
- All subdivisions
- New and existing irrigated areas of 10,000 square feet or more

The recycled water use area comprises the majority of the city's westside and eastside areas, as well as Treasure Island. The goal of the ordinance is to maximize the use of recycled water, and buildings and facilities subject to this ordinance must use recycled water for all uses authorized by the state once a source of recycled water is available. Commonly approved uses include irrigation, cooling, and/or toilet and urinal flushing. In a mixed-use residential building with a recycled water system, any restaurant or other retail food-handling establishment must be supplied by a separate potable water system to ensure public health and safety.

SAN FRANCISCO WATER EFFICIENT IRRIGATION ORDINANCE

San Francisco Administrative Code chapter 63, Water Efficient Irrigation Ordinance, includes requirements for all public agency, residential, and commercial new construction landscape projects with a landscape area equal to or greater than 500 square feet; and landscape rehabilitation projects with a modified landscape area equal to or greater than 2,500 square feet. Landscape projects must be planted and irrigated efficiently by complying with water-efficient design and operation requirements, including but not limited to the use of low-water-use plants or climate-appropriate plants, restrictions on turf areas over 25 percent of the total landscaped area or on steep slopes, irrigation system audits, and regular irrigation scheduling and maintenance practices. Chapter 63 also prohibits water runoff leaving the landscape area due to low head drainage, overspray, broken irrigation hardware, or other similar conditions where water flows onto adjacent property, walks, roadways, parking lots, structures, or non-irrigated areas designated for non-development such as open spaces and existing native vegetation.

SAN FRANCISCO PUBLIC WORKS CODE ARTICLE 21

San Francisco Public Works Code article 21 prohibits the use of potable water supplies for soil compaction and dust control when alternative supplies are available.

SAN FRANCISCO STORMWATER MANAGEMENT REQUIREMENTS AND DESIGN GUIDELINES

San Francisco Public Works Code sections 147–147.6 (the Stormwater Management Ordinance) mandate that projects creating or replacing 5,000 square feet or more of impervious surface implement post-construction stormwater controls that comply with the Stormwater Management Requirements and Design Guidelines.[299] The Stormwater Management Requirements and Design Guidelines require that the stormwater controls for individual development projects reduce or maintain existing stormwater runoff flow rates and volumes. Projects must also implement best management practices in compliance with the Construction Site Runoff

[299] San Francisco Public Utilities Commission, *2016 Stormwater Management Requirements and Design Guidelines*, May 2016.

Ordinance (San Francisco Public Works Code sections 146 through 146.11) and must obtain a Construction Site Runoff Control Permit prior to commencement of land-disturbing activities.

SAN FRANCISCO CONSTRUCTION AND DEMOLITION DEBRIS MANAGEMENT

San Francisco Environment Code chapter 14 mandates the recycling of construction and demolition debris generated from both private and City-sponsored projects in San Francisco. This chapter affects all construction projects that would generate one cubic yard or more of construction and demolition debris and requires that all construction and demolition wastes be taken to a registered facility that is certified by the San Francisco Department of the Environment to receive these wastes. Demolition of an existing structure requires submission of a material reduction and recovery plan that would divert a minimum of 75 percent of construction and demolition waste away from landfills. The department of the environment maintains a list of registered construction and demolition debris transporters and facilities.

SAN FRANCISCO ZERO-WASTE POLICY

Achieving zero waste means diverting all wastes from landfills and incineration. In 2002, the San Francisco Board of Supervisors set goals of achieving 75 percent diversion by 2010 and zero solid waste by a date determined once the 50 percent diversion goal was met (Ordinance 679-02). The goal of 50 percent landfill diversion was met in 2001, and the San Francisco Commission on the Environment accordingly established a goal of achieving zero solid waste by 2020 in Resolution 002-03-COE.[300] In 2018, San Francisco adopted new waste reduction targets, which include reducing the amount of municipal solid waste by 15 percent by 2030 and reducing landfill disposal and incineration by 50 percent by 2030.[301]

To further the City's progress towards achieving zero waste, San Francisco Ordinance No. 1009, the Mandatory Recycling and Composting Ordinance passed by the San Francisco Board of Supervisors in 2009, requires all of San Francisco to separate recyclables, compostables, and trash to be landfilled. Under this ordinance, it is unlawful to mix recyclables, compostables, or trash, or to deposit refuse of one type in a collection container designated for another type of waste.

3.G.4 Impacts and Mitigation Measures

SIGNIFICANCE CRITERIA

San Francisco Administrative Code chapter 31 directs the department to identify the environmental effects of a project using as its base the environmental checklist form set forth in CEQA Guidelines Appendix G. As it relates to utilities and service systems, Appendix G asks whether the project would result in:

- Require or result in the relocation or construction of new or expanded, water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects

[300] San Francisco Commission on the Environment, Resolution No. 002-03-COE, *Resolution Adopting a Date of 2020 for San Francisco to Achieve the Goal of Zero Waste to Landfill and Directing the Department of the Environment to Develop Policies and Programs to Increase Producer and Consumer Responsibility in Order to Achieve the Zero Waste Goal*, March 6, 2003, https://sfenvironment.org/sites/default/files/editor-uploads/zero_waste/pdf/resolutionzerowastedate.pdf, accessed September 27, 2022.
[301] San Francisco Environment Code chapter 9, section 902, Climate Action Goals.

- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments
- Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste

APPROACH TO ANALYSIS

CONSTRUCTION AND OPERATIONAL IMPACTS

This section analyzes the potential for implementation of the proposed project or variant to adversely affect existing utility facilities, wastewater treatment capacity, compliance with solid waste regulations, and water supply. For existing utilities, the analysis compares the utilities demand the proposed project or variant would create during construction and operations to the existing capacity of utilities facilities in the project area. With respect to wastewater treatment capacity, the analysis compares the quantity of wastewater that would be generated during construction and operation to available treatment capacity. For compliance with solid waste capacity and solid waste regulations, the analysis compares the quantity of solid waste that would be generated, adjusted to reflect applicable waste diversion regulations, with available landfill capacity.

Construction. Impacts associated with construction of utility infrastructure to support to the proposed project or variant are analyzed elsewhere in the draft EIR. Mitigation measures as discussed in Appendix B, Initial Study, and Sections 3.A through 3.F are identified to reduce construction-related impacts. Impacts associated with the construction of utilities proposed as part of the project or variant are not discussed further in this section of the EIR.

Electric and Telecommunications Facilities. Electric power and telecommunications would be reconfigured onsite as part of the proposed project or variant to connect new facilities to the existing power grid and existing telecommunications infrastructure. The proposed project or variant would not include use of natural gas. Reconfigured electric and telecommunication facilities would comply with the local All-Electric New Construction Ordinance. As discussed in Appendix B, Initial Study, Section E.19, Energy, based on compliance with the Title 24 conservation standards of the California Code of Regulations and the assessment of the projected demand for energy resources, operation of the proposed project or variant would not have a measurable effect on regional energy supplies or on peak energy demand resulting in a need for additional capacity. Consistent with CPUC General Order No. 159A, the potential impacts of any new or expanded telecommunications facilities would be reviewed and considered in a manner consistent with the CEQA. For these reasons impacts related to new or expanded electric power and telecommunications facilities are not discussed further.

Water Supply. Under sections 10910 through 10915 of the California Water Code, urban water suppliers like the SFPUC must prepare water supply assessments for certain large projects, as defined in CEQA Guidelines

section 15155.[302] Water supply assessments rely on information contained in the water supplier's urban water management plan and on the estimated water demand of both the proposed project or variant and projected growth within the relevant portion of the water supplier's service area. Because the proposed project or variant is a residential development of more than 500 dwelling units, it meets the definition of a water demand project under CEQA. The project-specific analysis of impacts on water supply facilities is provided below.

The SFPUC adopted a water supply assessment for the proposed project on October 24, 2022.[303] The water supply assessment for the variant identifies the project's total water demand, including a breakdown of potable and non-potable water demands.[304] The proposed project or variant is subject to San Francisco's Non-potable Water Ordinance (San Francisco Health Code article 12C). The Non-potable Water Ordinance requires new commercial, mixed-use, and multi-family residential development projects with 250,000 square feet or more of gross floor area to install and operate an onsite non-potable water system. Such projects must meet their toilet and urinal flushing and irrigation demands through the collection, treatment, and use of available graywater, rainwater, and foundation drainage. While not required, projects may use treated blackwater or stormwater if desired. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project or variant would meet the requirements of the Non-potable Water Ordinance by using treated commercial blackwater, graywater, and rainwater for toilet and urinal flushing and irrigation.

Both potable and non-potable demands for the variant were estimated using the SFPUC's Non-potable Water Calculator and supplemented with additional calculations for cooling tower makeup water, urinal flushing, shower and laundry demands, and irrigation for landscaped areas. According to the demand estimates, the variant's total water demand would be 0.249 mgd, which would be comprised of 0.152 mgd of potable water and 0.097 mgd of non-potable water. Accordingly, 38.9 percent of the variant's total water demand would be met by non-potable water.

CUMULATIVE IMPACTS

In Chapter 3 under Approach to Cumulative Impact Analysis, p. 3-5, describes the overall approach to the cumulative analysis for those topics using a list-based approach and summarizes reasonably foreseeable future projects in the vicinity of the project site that could contribute to a cumulative impact; see Table 3-1, p. 3-7, for a description and location of cumulative projects in the vicinity of the proposed project or variant.

[302] Pursuant to CEQA Guidelines section 15155(1), "a water-demand project" means:
(A) A residential development of more than 500 dwelling units.
(B) A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
(C) A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor area.
(D) A hotel or motel, or both, having more than 500 rooms.
(E) An industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
(F) A mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.
(G) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

[303] SFPUC, *Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project*, September 29, 2022.

[304] A water supply assessment was prepared for the proposed project using the variant demand projections because it represents the most conservative buildout for the project site from a water demand perspective.

For impacts related to water supply, the analysis relies on the variant's water supply assessment and considers whether the water demand of the variant is accommodated within the projections of the 2020 UWMP, consistent with CEQA Guidelines section 15130(b)(1)(B). For all other impacts, the cumulative analysis for utilities and service systems uses a list-based approach to evaluate the effects of the proposed project or variant in combination with cumulative projects in the immediate vicinity, consistent with CEQA Guidelines section 15130(b)(1)(A). The cumulative impact analysis assumes that construction and operations of other projects in the geographical area would be required to comply with the same regulatory requirements as the proposed project or variant, which would serve to avoid and reduce many impacts to less-than-significant levels on a project-by-project basis. The analysis then considers whether there would be an adverse significant cumulative impact associated with project implementation in combination with cumulative projects in the geographical area, and if so, whether or not the proposed project or variant's incremental contribution to the cumulative impact would be considerable. Both conditions must apply in order for a project's contribution to cumulative effects to be deemed cumulatively considerable (significant). If so, then mitigation measures are identified to reduce the proposed project or variant's contribution to the extent feasible.

IMPACT EVALUATION

Impact UT-1: The proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects. ***(Less than Significant)***

CONSTRUCTION

Construction activities, such as use of construction equipment and dust suppression, would rely on fuel and water hauled to the project site and would not require the construction of new or expanded water supply, natural gas, or electric power utilities. As discussed in Appendix B, Initial Study, Section E.15, Geology and Soils, during construction the project sponsor would be required to implement stormwater control best management practices to avoid increasing the existing rate and volume of stormwater runoff from the site during construction; therefore, new stormwater drainage facilities would not be required during construction.

Therefore, construction of the proposed project or variant would not require or result in the relocation or construction of new utilities. This impact would be ***less than significant***.

OPERATIONS

Potable Water Distribution

Potable water to meet the site's potable water and fire flow demands would be supplied to the project site from the SFPUC's regional water system, via the in-city low-pressure water distribution system, described above. The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water demands,[305] for which the associated regional water treatment and transmission facilities have been established. Therefore, the proposed project or variant would not require construction of new or expanded potable water distribution facilities.

[305] San Francisco Public Utilities Commission, *Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project*, September 29,2022; approved by Resolution No. 22-0186, October 24, 2022.

Low-Pressure Water System

The proposed project or variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue.[306] Fire flow was simulated using a model based in part on field flow tests conducted by the San Francisco Fire Department to assess whether the proposed project system would meet industry and SFPUC standard for flow and pressure.[307] Fire flow demands of 1,500 gallons per minute would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch.[308] Therefore, the proposed project or variant would not require new or expanded low-pressure water system infrastructure.

Stormwater Facilities

The project site is currently paved and stormwater and wastewater from the project site drain to the city's combined sewer system. The proposed project or variant would include new combined sewer system pipelines throughout the site to serve the new buildings as shown in Figure 2-19, p. 2-39. The combined sewer system pipelines would collect wastewater and stormwater from the project site and connect to existing surrounding combined sewer system infrastructure. While stormwater from the project site would continue discharge to the existing combined sewer system facilities, the proposed project or variant would be required to implement runoff reduction measures consistent with the City's Stormwater Management Requirements and Design Guidelines, which would reduce the amount of stormwater runoff entering the combined sewer system compared with existing conditions. Because the proposed project or variant would reduce the amount of stormwater runoff entering the combined sewer system compared with existing conditions, no new or expanded stormwater drainage facilities other than those proposed as part of the project or variant would be required.

CONCLUSION

The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water demands that are the basis for the capacity of regional water treatment and transmission facilities. The proposed project or variant's population and employment growth is within the projected growth that is the basis for ongoing improvements to the emergency firefighting water system. The proposed project or variant would reduce stormwater flows to existing combined sewer system facilities consistent with the City's Stormwater Management Requirements and Design Guidelines. For these reasons, the proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities during construction or operation, and this impact would be ***less than significant***.

---

[306] The low-pressure water system's ability to meet fire flow demands is based on the alignments and sizes of the existing and proposed low-pressure water pipelines and pumps. The proposed alignments and sizes of low-pressure water pipelines would be the same for the proposed project and variant; therefore, this analysis addresses both the proposed project and variant.
[307] Carlson, Barbee & Gibson, Inc., *Stonestown Mall Water System Modelling Low Pressure Water System Design Recommendations*, October 28, 2022. In this document 19th Avenue is referred to as "Monte Vista Drive."
[308] Ibid.

Impact UT-2: SFPUC determined that during normal years sufficient water supplies are available to serve the proposed project or variant and reasonably foreseeable future development in normal years. In single and multiple dry years the SFPUC may develop new or expanded water supply facilities to address shortfalls if the Bay Delta Plan Amendment is implemented, but this would occur with or without the proposed project or variant. The SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing. ***(Less than Significant)***

CONSTRUCTION

During construction, the proposed project or variant would use potable water for various purposes such as to provide drinking water, meet onsite sanitary needs, and cement mixing. San Francisco Public Works Code article 21 restricts the use of potable water for soil compaction and dust control associated with any construction project in the city and requires the use of recycled water. As discussed further under Impact UT-2, below, the limited amount of water required would not result in the need for an additional water supply, nor would it require construction of new or expanded water facilities.

OPERATION

Water use at full buildout is estimated at 90.74 million gallons per year,[309] and would include irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. The proposed project or variant would include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated prior to reuse onsite at a treatment plant or facility located within the project site.

Potable Water

The water supply assessment estimates future citywide water demand through 2045 based on anticipated population and employment growth. The planning department determined that the proposed project or variant represents a portion of the planned growth accounted for in the City's general plan. Therefore, the proposed project's or variant's demand is incorporated in the 2020 plan.

The water supply assessment determined that the variant's potable water demand of 0.152 mgd would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045.[310] The variant's total water demand of 0.249 mgd, which does not account for the 0.097 mgd savings anticipated through compliance with the non-potable water ordinance,[311] would represent 0.31 percent of 2045 total demand for the city. Thus, the variant represents a small fraction of the total projected water demand in San Francisco through 2045.

[309] This discussion evaluates water use at full buildout of the proposed variant because the variant includes more residential units and institutional space, and consequently greater water use, than the proposed project.
[310] A water supply assessment was prepared for the proposed project using the variant demand projections because it represents the most conservative buildout for the project site from a water demand perspective.
[311] Non-potable demands estimated using the SFPUC's Non-potable Water Calculator included in San Francisco Public Utilities Commission, *Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project*, September 29,2022; approved by Resolution No. 22-0186, October 24, 2022.

The water supply assessment evaluates the ability of the water supply system to meet the demand of the proposed project or variant in combination with both existing development and projected growth in San Francisco under the following water supply scenarios:

- Scenario 1: Current Water Supply
- Scenario 2: Bay-Delta Plan Voluntary Agreement
- Scenario 3: 2018 Bay-Delta Plan Amendment

As discussed below, the water supply assessment concludes that water supplies would be available to meet the demand of the proposed project or variant in combination with both existing development and projected growth in San Francisco through 2045 under each of these water supply scenarios with varying levels of rationing during dry years. The following is a summary of the analysis and conclusions presented in the SFPUC's water supply assessment for the proposed project or variant under each of the three water supply scenarios considered.

Scenario 1 – Current Water Supply

Scenario 1 assumes no change to the way in which water is supplied, and that neither the Bay-Delta Plan Amendment nor a Bay-Delta Plan Voluntary Agreement would be implemented. Thus, the water supply and demand assumptions contained in the 2020 plan for the scenario without implementation of the Bay-Delta Plan Amendment would be applicable for the proposed project or variant's water supply assessment. As stated above, the proposed project or variant is accounted for in the demand projections in the 2020 plan.

Under Scenario 1, the water supply assessment determined that retail water supplies would be available to meet the demand of the proposed project or variant in combination with existing development and projected growth in all years, except for an approximately 4.0 mgd or 5.3-percent shortfall in years four and five during multiple dry years under 2045 demand levels. This relatively small shortfall is primarily due to implementation of the amended 2009 Water Supply Agreement. To manage a small shortfall such as this, the SFPUC may prohibit certain discretionary outdoor water uses and/or call for voluntary rationing by its retail customers. During a prolonged drought at the end of the 20-year planning horizon, the project could be subject to voluntary rationing in response to a 5.3-percent supply shortfall, when the 2018 amendments to the 2009 Water Supply Agreement are taken into account. This level of rationing is well within the SFPUC's regional water system supply level of service goal of limiting rationing to no more than 20 percent on a system-wide basis (i.e., an average throughout the regional water system).

Scenario 2 – Bay-Delta Plan Voluntary Agreement

Under Scenario 2, a voluntary agreement would be implemented as an alternative to the adopted Bay-Delta Plan Amendment. The March 1, 2019, proposed voluntary agreement submitted to the state water board has yet to be accepted, and the shortages that would occur with its implementation are not known. Negotiations are ongoing under the California Natural Resources Agency. The voluntary agreement proposal contains a combination of flow and non-flow measures that are designed to benefit fisheries at a lower water cost, particularly during multiple dry years, than would occur under the Bay-Delta Plan Amendment. The resulting regional water system supply shortfalls during dry years would be less than those under the Bay-Delta Plan Amendment and would require rationing of a lesser degree and closer in alignment to the SFPUC's adopted level of service goal for the regional water system of rationing of no more than 20 percent system-wide during dry years.

Scenario 3 – Bay-Delta Plan Amendment

Under Scenario 3, the 2018 Bay-Delta Plan Amendment would be implemented as it was adopted by the state water board without modification. Under this scenario, which is assumed to be implemented after 2022, water supplies would be available to meet projected demands through 2045 in wet and normal years with no shortfalls. However, under Scenario 3 the entire regional water system—including both the wholesale and retail service areas—would experience significant shortfalls in single dry and multiple dry years, which occur on average just over once every 10 years. Significant dry-year shortfalls would occur in San Francisco, regardless of whether the proposed project or variant is constructed. Except for the currently anticipated shortfall of about 4.0 mgd (5.3 percent) that is expected to occur under Scenario 1 in years four and five during multiple dry years based on 2045 demand levels, these shortfalls would exclusively result from supply reductions resulting from implementation of the Bay-Delta Plan Amendment. The supply shortfalls under Scenario 3 would not be attributed to the incremental demand associated with the proposed project or variant because the demand is incorporated already in the growth and water demand/supply projections contained in the 2020 plan.

Under the Bay-Delta Plan Amendment, existing and planned dry-year supplies would be insufficient for the SFPUC to satisfy its regional water system supply level of service goal of no more than 20 percent rationing system-wide. As shown in Table 5 of the water supply assessment, total shortfalls under Scenario 3 would range from 11.2 mgd (15.9 percent) in a single dry year to 19.2 mgd (27.2 percent) in years two through five of a multiple year drought based on 2025 demand levels and from 20.5 mgd (25.4 percent) in a single dry year to 28.5 mgd (35.4 percent) in years four and five of a multiple year drought based on 2045 demand.

Water Supply Impact Analysis

As described above, the supply capacity of the Hetch Hetchy regional water system that provides the majority of the city's drinking water far exceeds the potential demand of any single development project in San Francisco. No single development project alone in San Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years. Therefore, a separate project-only analysis is not provided for this topic. The following analysis considers whether the proposed project in combination with both existing development and projected growth through 2045 would require new or expanded water supply facilities, the construction or relocation of which could have significant impacts on the environment.

It also considers whether a high level of rationing would be required that could have significant cumulative impacts. It is only under this cumulative context that development in San Francisco could have the potential to require new or expanded water supply facilities or require the SFPUC to take other actions, which in turn could result in significant physical environmental impacts related to water supply. If significant cumulative impacts could result, then the analysis considers whether the proposed project or variant would make a considerable contribution to the cumulative impact.

Impacts Related to New or Expanded Water Supply Facilities

The SFPUC's adopted water supply level of service goal for the regional water system is to meet customer water needs in non-drought and drought periods. The system performance objective for drought periods is to meet dry-year delivery needs while limiting rationing to a maximum of 20 percent system-wide reduction in regional water service during extended droughts. As the SFPUC has designed its system to meet this goal, it is reasonable to assume that to the extent the SFPUC can achieve its service goals, sufficient supplies

would be available to serve existing development and planned growth accounted for in the 2020 plan (which includes the proposed project) and that new or expanded water supply facilities are not needed to meet system-wide demand. While the focus of this analysis is on water demand in San Francisco and not the regional water system as a whole, this cumulative analysis considers the SFPUC's regional water supply level of service goal of rationing of not more than 20 percent in evaluating whether new or expanded water supply facilities would be required to meet the demands of existing development and projected growth in San Francisco through 2045. If a shortfall would require rationing more than 20 percent to meet system-wide dry-year demand, the analysis evaluates whether as a result, the SFPUC would develop new or expanded water supply facilities that result in significant physical environmental impacts. It also considers whether such a shortfall would result in a level of rationing that could cause significant physical environmental impacts. If the analysis determines that there would be a significant cumulative impact, then per CEQA Guidelines section 15130, the analysis considers whether the project's incremental contribution to any such effect is "cumulatively considerable."

As discussed above, existing and planned dry-year supplies would meet projected demands for San Francisco water customers through 2045 under Scenario 1 within the SFPUC's regional water system adopted water supply reliability level of service goal. Therefore, the SFPUC could meet the water supply needs for the proposed project in combination with existing development and projected growth in San Francisco through 2045 from the SFPUC's existing system. The SFPUC would not be expected to develop new or expanded water supply facilities for San Francisco customers under Scenario 1 and there would be no significant cumulative environmental impact.

The effect of Scenario 2 cannot be quantified at this time but as explained previously, if it can be designed to achieve the SFPUC's level of service goals and is adopted, it would be expected to have effects similar to Scenario 1. Given the SFPUC's stated goal of maintaining its level of service goals under Scenario 2, it is expected that Scenario 2 effects would be more similar to Scenario 1 than to Scenario 3. In any event, any shortfall effects under Scenario 2 that exceed the SFPUC's service goals would be expected to be less than those under Scenario 3. Therefore, the analysis of Scenario 3 would encompass any effects that would occur under Scenario 2 if it were to trigger the need for increased water supply or rationing in excess of the SFPUC's regional water system level of service goals.

Under Scenario 3, the SFPUC's existing and anticipated water supplies would be sufficient to meet the demands of existing development and projected growth in San Francisco, including the proposed project or variant, through 2045 in wet and normal years, which have historically occurred in approximately nine out of 10 years on average. During dry and multiple dry years, supply shortfalls of 15.9 to 35.4 percent could occur.

The SFPUC has indicated in its water supply assessment that as a result of the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations on supply to the regional water system during dry years, the SFPUC is increasing and accelerating its efforts to develop additional water supplies and explore other projects that would increase overall water supply resilience. It lists possible projects that it will study. While the SFPUC has taken action to fund several water supply options, the projects are still in the early feasibility or conceptual planning stages. The SFPUC has determined that the identified potential projects would take anywhere from 10 to 30 years or more to implement.

There is also a substantial degree of uncertainty associated with the implementation of the Bay-Delta Plan Amendment and its ultimate outcome, and therefore, there is substantial uncertainty in the amount of additional water supply that may be needed, if any. Moreover, there is uncertainty and lack of knowledge as

to the feasibility and parameters of the possible water supply projects the SFPUC is beginning to explore. Consequently, the physical environmental impacts that could result from future supply projects is speculative at this time and would not be expected to be reasonably determined for a period of time ranging from 10 to 30 years. Although it is not possible at this time to identify the specific environmental impacts that could result, this analysis assumes that if new or expanded water supply facilities, such as those listed above under "Additional Water Supplies," were developed, the construction and/or operation of such facilities could result in significant adverse environmental impacts.

As discussed above, the variant would represent 0.31 percent of total demand and 0.19 percent of potable water demand in San Francisco in 2045, whereas implementation of the Bay Delta Plan Amendment would result in a retail supply shortfall of up to 35.4 percent. Thus, new or expanded dry-year water supplies would be needed under Scenario 3 regardless of whether the proposed project or variant is constructed. As such, any physical environmental impacts related to the construction and/or operation of new or expanded water supplies would occur with or without the proposed project or variant. Therefore, the proposed project or variant would not have a considerable contribution to any significant cumulative impacts that could result from the construction or operation of new or expanded water supply facilities developed in response to the Bay-Delta Plan Amendment.

Impacts Related to Rationing

Given the long lead times associated with developing additional water supplies, in the event the Bay-Delta Plan Amendment were to take effect sometime after 2022 and result in a dry-year shortfall, the expected action of the SFPUC for the next 10 to 30 years (or more) would be limited to requiring increased rationing. The remaining analysis therefore focuses on whether rationing at the levels that might be required under the Bay-Delta Plan Amendment could result in any cumulative impacts, and if so, whether the proposed project or variant would make a considerable contribution to these impacts.

The SFPUC has established a process through its 2020 Water Shortage Contingency Plan for actions it would take under circumstances requiring rationing. Rationing at the level that might be required under the Bay-Delta Plan Amendment would require restrictions on irrigation and other outdoor water uses (e.g., car washing), changes to water use behaviors (e.g., shorter and/or less-frequent showers), and changes to how businesses operate, all of which could lead to undesirable socioeconomic effects. Any such effects would not constitute physical environmental impacts under CEQA.

High levels of rationing could however lead to adverse physical environmental effects, such as the loss of vegetation cover resulting from prolonged restrictions on irrigation. Prolonged high levels of rationing within the city could also make San Francisco a less desirable location for residential and commercial development compared to other areas of the state not subject to such substantial levels of rationing, which, depending on location, could lead in turn to increased urban sprawl. Sprawl development is associated with numerous environmental impacts, including, for example, increased greenhouse gas emissions and air pollution from longer commutes and lower density development, higher energy use, loss of farmland, and increased water use from less water-efficient suburban development.[312] In contrast, as discussed in the transportation section, the proposed project or variant is located in an area where VMT per capita is well below the regional average; projects in San Francisco are required to comply with numerous regulations that would reduce greenhouse gas emissions, as discussed in the greenhouse gas section of this initial study, and San Francisco's per capita water use is among the lowest in the state. Thus, the higher levels of rationing on a

[312] Pursuant to the SFPUC 2020 Urban Water Management Plan, San Francisco's per capita water use is among the lowest in the state.

citywide basis that could be required under the Bay-Delta Plan Amendment could lead directly or indirectly to significant cumulative impacts. The question, then, is whether the proposed project or variant would make a considerable contribution to impacts that may be expected to occur in the event of high levels of rationing.

While the levels of rationing described above apply to the retail service area as a whole (i.e., 5.3 percent under Scenario 1, 15.9 to 35.4 percent under Scenario 3), the SFPUC may allocate different levels of rationing to individual customers based on customer type (e.g., dedicated irrigation, single-family residential, multi-family residential, commercial, etc.) to achieve the required level of citywide rationing. Allocation methods and processes that have been considered in the past and may be used in future droughts are described in Section 4 of the SFPUC's current Water Shortage Contingency Plan.[313]

In accordance with the Retail Water Shortage Allocation Plan, the level of rationing that would be imposed on the proposed project or variant would be determined at the time of a drought or other water shortage and cannot be established with certainty prior to the shortage event. However, newly constructed buildings, such as the proposed project or variant, have water-efficient fixtures and non-potable water systems that comply with the latest regulations. Thus, if these buildings can demonstrate below-average water use, they would likely be subject to a lower level of rationing than other retail customers that meet or exceed the average water use for the same customer class.

While any substantial reduction in water use in a new, water efficient building likely would require behavioral changes by building occupants that are inconvenient, temporary rationing during a drought is expected to be achievable through actions that would not cause or contribute to significant environmental effects. The effect of such temporary rationing would likely cause occupants to change behaviors but would not cause the substantial loss of vegetation because vegetation on this urban infill site would be limited to ornamental landscaping, and non-potable water supplies would remain available for landscape irrigation in dry years. The proposed project or variant would not include uses that would be forced to relocate because of temporary water restrictions, such as a business that relies on significant volumes of water for its operations. While high levels of rationing that would occur under Scenario 3 could result in future development locating elsewhere, existing residents, employees, and businesses occupying the proposed project or variant would be expected to tolerate rationing for the temporary duration of a drought.

As discussed above, implementation of the Bay-Delta Plan Amendment would result in substantial system-wide water supply shortfalls in dry years. These shortfalls would occur with or without the proposed project or variant, and the variant's incremental increase in potable water demand (0.31 percent of total demand for retail water customers) would have a negligible effect on the levels of rationing that would be required throughout San Francisco under Scenario 3 in dry years.

As such, temporary rationing that could be imposed on the proposed project or variant would not cause or contribute to significant environmental effects associated with the high levels of rationing that may be required on a city-wide basis under Scenario 3. Thus, the proposed project or variant would not make a considerable contribution to any significant cumulative impacts that may result from increased rationing that may be required with implementation of the Bay-Delta Plan Amendment, were it to occur.

[313] San Francisco Public Utilities Commission, *2020 Urban Water Management Plan for the City and County of San Francisco*, Appendix K, Water Shortage Contingency Plan, adopted June 11, 2021, https://www.sfpuc.org/about-us/policies-plans/urban-water-management-plan.

Conclusion

As stated above, there is considerable uncertainty as to whether the Bay-Delta Plan Amendment will be implemented. If the Bay-Delta Plan Amendment is implemented, the SFPUC will need to impose higher levels of rationing than its regional water system level of service goal of no more than 20 percent rationing during drought years by 2025 and for the next several decades. Implementation of the Bay-Delta Plan Amendment would result in a shortfall ranging from 15.9 percent in a single dry year and year one of multiple dry years to up to 27.2 percent in years two through five of a multiple year drought in 2025, and dry year shortfalls by 2045 ranging from 25.4 percent in a single dry year and years one through three of a multiple year drought to up to 35.4 percent in years four and five of a multiple year drought. While the SFPUC may seek new or expanded water supply facilities, it has not made any definitive decision to pursue particular actions and there is too much uncertainty associated with this potential future decision to identify environmental effects that would result. Such effects are therefore speculative at this time. In any case, the need to develop new or expanded water supplies in response to the Bay Delta Plan Amendment and any related environmental impacts would occur irrespective of the water demand associated with the proposed project or variant. Given the long lead times associated with developing additional supplies, the SFPUC's expected response to implementation of the Bay-Delta Plan Amendment would be to ration in accordance with procedures in its Water Shortage Contingency Plan.

Both direct and indirect environmental impacts could result from high levels of rationing. However, the proposed project or variant is a mixed-use urban development that would be expected to tolerate the level of rationing imposed on it for the duration of the drought, and thus would not contribute to sprawl development caused by rationing under the Bay-Delta Plan Amendment. The proposed project or variant itself would not be expected to contribute to a loss of vegetation because project-generated non-potable supplies would remain available for irrigation in dry years. Nor would the small increase in potable water demand attributable to the project compared to citywide demand substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Thus, the proposed project or variant would not make a considerable contribution to a cumulative environmental impact caused by implementation of the Bay-Delta Plan Amendment. Therefore, for the reasons described above, under all three scenarios, this impact would be ***less than significant***.

Non-Potable Water

Consistent with the non-potable water ordinance (Article 12C of the San Francisco Health Code), the proposed project or variant includes onsite greywater and blackwater treatment systems. The proposed project or variant would either include a central treatment plant or decentralized treatment facilities, as shown on Figure 2-16 and Figure 2-17, pp. 2-37 and 2-38. Treated greywater, blackwater, and rainwater would be used for toilet and urinal flushing, cooling towers, and irrigation for landscaped areas. Consistent with the Commercial and Residential Water Conservation ordinances, the proposed project or variant would be required to install "low-flow" showerheads, faucets, and toilets. Landscape areas would be designed consistent with San Francisco Administrative Code chapter 63, Water Efficient Irrigation Ordinance, which requires efficient use of water through practices such as use of low water plants and regular maintenance of irrigation systems. In addition, while recycled water is not yet available for the site, the proposed project or variant would install distribution facilities for recycled water to ensure that such water, when available, could be used for non-potable applications such as irrigation and toilet or urinal flushing. Compliance with local regulatory requirements would reduce the project demand for potable water and would not result in direct or indirect environmental impacts discussed above. Therefore, this impact would be ***less than significant***.

Impact UT-3: The proposed project or variant would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the projected demand in addition to the provider's existing commitments and would not require construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. ***(Less than Significant)***

CONSTRUCTION

During the eight years of project construction, new sources of wastewater discharges to the City's combined sewer system would include wastewater resulting from sanitary needs of construction workers. As described in Appendix B, Section E.2, Population and Housing, the maximum number of construction workers would range from 349 to 610 workers per day. Assuming that each worker would generate 2.81 gallons per day of wastewater,[314] the total increase in wastewater volumes would be about 0.002 mgd. This volume represents a *de minimis* increase in the 12 mgd of wastewater treated at the Oceanside Treatment Plant and would be well within the 43 mgd dry weather capacity of the existing wastewater system. Excavation at the project site would be for below-grade parking and preparation of building foundations.

As described in Chapter 2, Project Description, the proposed project or variant would require approximately 205,000 cubic yards of excavation during construction and approximately 65,000 cubic yards of fill. The groundwater level at the project site ranges from 33 to 62 feet below ground surface (bgs).[315] Given that the depth of excavation would range between 0 and 30 feet bgs, groundwater dewatering could be required during construction to maintain a dry working area within these excavations. Groundwater would be discharged to the combined sewer system, adding to the total amount of wastewater requiring treatment at Oceanside Treatment Plant. Discharge of groundwater produced during construction-related dewatering would be subject to a batch wastewater discharge permit issued in accordance with article 4.1 of the public works code, as supplemented by Order No. 158170, which regulates the quantity and quality of discharges to the combined sewer system. With discharge to the combined sewer system in accordance with regulatory requirements, dewatering discharge would be within the available capacity of the combined sewer system.

Based on the above analysis, discharges of both wastewater from the sanitary needs of construction workers and dewatering would be well within the remaining dry weather treatment capacity of the Oceanside Treatment Plant and associated conveyance infrastructure. Therefore, construction of the proposed project or variant would not require the construction or expansion of wastewater treatment facilities and would not result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the proposed project or variant's projected demand in addition to the provider's existing commitments. As a result, this impact would be ***less than significant***.

OPERATION

The proposed project or variant would comply with San Francisco's Non-potable Water Ordinance and would include the diversion, treatment, and reuse of graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, and irrigation for landscaped areas. The proposed project or variant

[314] This calculation is based on compliance with the 2013 California Green Building Code water use baseline values provided in Table 5.3003.2.2 of the code. Construction workers are assumed to flush twice per day and the water use includes 1.28 gallons per flush and use of 0.125 gallons per flush for handwashing. The total per construction worker water use for sanitary purposes is 2.81 gallons per day.
[315] ENGEO, *Geotechnical Exploration, Stonestown Galleria Development, San Francisco, California,* prepared for Brookfield Properties, January 2021.

would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or decentralized treatment facilities located within certain buildings as shown in Figure 2-16 and Figure 2-17, pp. 2-37 and 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the buildings on the project site.

Wastewater demand is estimated at approximately 230,720 gallons per day (approximately 0.2 mgd) for an average day dry weather flow. Wastewater generated from the project site would include residential toilet flushes and drainage from sinks and would be conveyed through the combined sewer system to the Oceanside Treatment Plant, which operates under a National Pollutant Discharge Elimination System (NPDES) permit from the regional board (Order No. R2-2019-0028, December 10, 2019). The Oceanside Treatment Plant is permitted to treat an average dry weather influent flow of up to 43 mgd and in 2020 the average dry weather flow to the treatment plant was 12 mgd. Because the plant has sufficient available capacity for anticipated wastewater flows from the project site, the proposed project or variant would not require construction of new or expansion of existing wastewater treatment facilities.

The SFPUC's infrastructure capacity plans account for projected population and employment growth in relation to the capacity of its collection, storage, and treatment system.[316] Wastewater from the project site would continue discharge to the existing combined sewer system facility through Lowell High School and wastewater south of Winston Drive would be conveyed through existing combined sewer system facilities within Buckingham Way. The existing combined sewer system is sized to accommodate both daily wastewater flows and stormwater runoff from a 5-year storm; at the project site the design storm generates approximately 1.45 million gallons of runoff during a 3-hour period (i.e., 1.45 mgd).[317] The estimated wastewater demand of 0.2 mgd is therefore a fraction of the capacity of the existing combined sewer system facilities. The proposed project or variant would also include green infrastructure for stormwater treatment in compliance with the Stormwater Management Ordinance to reduce peak flows from the site before discharging into the combined sewer system. Therefore, the existing combined sewer system would have sufficient capacity to accommodate the new wastewater flows. Operation of the proposed project or variant would not result in a determination that the combined sewer system or the Oceanside Treatment Plant has inadequate capacity to serve the project's anticipated wastewater demand. As a result, this impact would be ***less than significant***.

---

[316] San Francisco Public Utilities Commission, *San Francisco Sewer System Master Plan, 2010*. The Sewer System Master Plan evolved into the Sewer System Improvement Program and then the 2015 San Francisco Sewer System Management Plan.
[317] This design storm generates 1.3 inches of rain over a 3-hour period. At the 41-acre project site this would amount to 1.45 million gallons during a design storm. San Francisco Public Utilities Commission, *SFPUC Sewer System Management Plan*, September 2021.

Impact UT-4: The proposed project or variant would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. ***(Less than Significant)***

CONSTRUCTION

Construction of the proposed project or variant would take place over approximately eight years and would likely occur in six overlapping phases. The greatest number of truck loads per day associated with demolition would occur during the Phase 4 variant, during which 1,590 loads of demolition debris would be off hauled over 73 days. Assuming each truck load contains 16 cubic yards of demolition debris, up to 348 cubic yards per day of demolition debris would be generated.[318] Construction and demolition debris would be transported by a registered transporter to a registered facility that can process mixed construction and demolition debris pursuant to the construction and demolition ordinance. The ordinance requires that at least 65 percent of construction and demolition debris from a site go to a registered construction and demolition recycling facility. Section 1402 of the San Francisco Environment Code further requires that a project that includes demolition of existing buildings must prepare a plan that provides for a minimum of 75 percent recovery away from landfill of construction and demolition debris. The plan must be submitted along with a demolition permit application.

Table 3.G-1 lists the remaining capacity of class II (designated waste) and class III (nonhazardous) landfills located within the greater San Francisco Bay Area. Note that some of the landfills are also permitted to accept certain types of designated waste that could be generated during demolition and renovation activities, including asbestos-containing materials and treated wood waste. Treatment and removal of hazardous materials is addressed in Appendix B Section E.17, Hazards and Hazardous Materials. Construction debris with lead-based paint or asbestos-containing materials can be disposed of as demolition/construction debris at any of the landfills identified below. The local landfills listed in Table 3.G-1 are all operating in compliance with the requirements of federal, state, and local solid waste regulations.

With the City's existing recycling programs and the available daily capacity at regional landfills of a combined 38,046 ton maximum throughout per day, non-recyclable construction waste from the proposed project or variant would not exceed permitted landfill capacity or impair attainment of solid waste reduction goals. Thus, the impact from construction of the proposed project or variant with respect to compliance with solid waste statutes and regulations would be ***less than significant***.

[318] Ramboll, *Stonestown Redevelopment Project Air Quality and Health Risk Assessment Results, Table 5, Construction Trips Stonestown Redevelopment*, San Francisco, California. November 15, 2022.

Table 3.G-1 Local Class II and III Landfills

Landfill	County	Asbestos-Containing Materials	Treated Wood Waste	Estimated Closure Date	Daily Acceptance (tons per day)	Remaining Capacity (cubic yards)
Recology Hay Road	Solano	Yes	—	2065	3,200	24,900,000 as of 2018
Corinda Los Trancos Landfill (Ox Mountain)	San Mateo	Yes	Yes	2034	3,598	22,180,000 as of 2015
Altamont	Alameda	Yes	—	2025	11,150	65,400,000 as of 2014
Guadalupe	Santa Clara	Yes	Yes	2048	1,300	11,055,000 as of 2011
Kirby Canyon	Santa Clara	Yes	Yes	2022	2,600	16,191,600 as of 2015
Newby Island	Santa Clara	Yes	Yes	2041	4,000	21,200,000 as of 2014
Zanker Road	Santa Clara	—	—	2025	350	640,000 as of 2012
Vasco Road	Alameda	Yes	Yes	2022	2,518	7,379,000 as of 2016
Keller Canyon	Contra Costa	—	Yes	2030	3,500	63,408,410 as of 2004
Potrero Hills	Solano	—	Yes	2048	4,330	13,872,000 as of 2006
Redwood	Sonoma	Yes	Yes	2024	2,300	26,000,000 as of 2008

SOURCE: California Department of Resources Recycling and Recovery 2022

NOTE: A rough conversion factor for demolition/construction debris is about 1.2 to 2.4 tons per cubic yard, depending on the level of compaction.

OPERATION

At buildout, up to 20 tons of waste per day could be generated at the project site,[319] which is within the allowable total tons per day of many nearby landfills, including Recology Hay Road, and represents far less than 1 percent of Recology Hay Road landfill capacity. The total operational solid waste generated under the project that would require disposal in a landfill would also represent less than 1 percent of the landfills' combined 38,046 ton maximum throughout per day. Furthermore, the nearby landfills have a remaining capacity of more than 100 million cubic yards, and therefore can accommodate the solid waste disposal needs of the project through the duration of the proposed project or variant. Given the estimated volume of annual solid waste, the landfills in the greater San Francisco Bay Area would have sufficient capacity to accept the solid waste generated by the proposed project or variant during operations.

In addition, residents, employees, and visitors to the proposed project or variant would be required to separate waste materials consistent with the San Francisco Mandatory Recycling and Composting Ordinance, California's Mandatory Commercial Recycling Law, and California Public Resources Code Section 42649.8; the proposed project or variant would not include features that would impede compliance with these requirements. As noted above, solid waste would be landfilled at facilities that operate in compliance with requirements of federal, state, and local solid waste regulations. Therefore, the impact of operation of the

[319] The variant would result in a greater number of residents and employees at the project site. There would be 7,269 residents and 1,258 employees under the variant. Assuming the 2019 solid waste production rates of 4.5 pounds per person per day for residents and 5.3 pounds per person per day for employees, residents and employees combined are estimated to generate approximately 39,378 pounds per day or approximately 19.7 tons per day of solid waste. CalRecycle, Disposal Rate Calculator for San Francisco, Years 2019 and 2020, https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DisposalRateCalculator, accessed September 27, 2022

proposed project or variant on the capacity of local infrastructure, attainment of solid waste reduction goals, and solid waste regulations would be ***less than significant***.

CUMULATIVE IMPACTS

Projects listed in Table 3-1, p. 3-7, in combination with the proposed project or variant could result in cumulative impacts related to utilities and service systems. Construction of the proposed project or variant is expected to begin in 2024 and end in 2032, which is within the same time frame and vicinity as other cumulative projects. These projects may result in increased demand for in utilities and service systems in the project vicinity.

Based on the schedule information for the cumulative projects presented in Table 3-1, there are four cumulative projects that could potentially overlap with proposed project or variant construction and operations. The geographic scope for potential cumulative utilities and service systems impacts consists of the project area, its immediate vicinity, and the service areas of regional service/utility providers. Wastewater system facilities in the project vicinity include San Francisco's combined sewer system and the Oceanside Treatment Plant. Multiple landfills are located within 100 miles, and these landfills could be used by the cumulative projects listed in Table 3-1.

Impact UT-2, above, discusses the variant's water demand in combination with both existing development and projected growth in San Francisco through 2045, and evaluates potential impacts of that cumulative water demand. For this reason, no separate cumulative water supply analysis is warranted, and none is provided below.

Impact C-UT-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to the wastewater and stormwater collection and treatment system. ***(Less than Significant)***

The cumulative projects listed in Table 3-1, p. 3-7, would be subject to the same set of regulations as the proposed project or variant. Similar to the proposed project or variant, cumulative projects under construction at the same time within the vicinity would utilize the same wastewater systems, which would increase the demand on such facilities. While excavations for the cumulative projects could require groundwater dewatering, the amount of water generated would not exceed the capacity of the wastewater system because dewatered water could be stored if needed to comply with the requirements of discharge permits to which all cumulative projects would be subject. Once operational, the proposed project or variant along with some of the cumulative projects (all except the Lake Merced Boulevard Quick-Build Pedestrian Safety Improvements project) would generate wastewater. Similar to the proposed project or variant, the cumulative projects would be constructed in areas that are generally already impervious and drain to the combined sewer system and all projects would be subject to the same requirements regarding capacity of new combined sewer system pipelines and the City's Stormwater Management Design Guidelines. Consistent with these requirements, cumulative projects would reduce or maintain, but not increase, stormwater runoff flow rates and volumes, and would design and install new combined sewer system infrastructure with sufficient capacity to accommodate stormwater runoff.

Additionally, Future State 2035 proposes an on-campus non-potable water system to reclaim wastewater and use it for toilet flushing and irrigation. Future State 2035 also considers "sewer mining" to extract wastewater from existing combined sewer system infrastructure that passes through the campus and treating the combined sewer system water in the on-campus non-potable water system. The proposed on-campus non-potable water system would meet non-potable water demands of approximately 69 million gallons per year at buildout. Reuse of wastewater would minimize the increased demand on the combined sewer system associated with Future State 2035 buildout. Future State 2035 also proposes to meet or exceed the City's Stormwater Management Requirements and Design Guidelines; new developments would be required to meet stormwater discharge reductions using green infrastructure methods, such as bioretention and permeable pavements.[320] Furthermore, Future State 2035 would include a centralized bioretention facility to maximize treatment and infiltration of stormwater from adjacent watersheds, potentially exceeding the stormwater discharge reductions of the City's Stormwater Management Requirements.

Future State 2035's reduction in stormwater flows, along with the other cumulative project's reductions in stormwater flows, would result in an overall reduction in combined flows during peak wet weather flow events. As a result, the cumulative impact of the proposed project or variant combined with cumulative projects on the wastewater and stormwater collection system would be ***less than significant***.

Impact C-UT-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to solid waste facilities and regulations. ***(Less than Significant)***

Most of the cumulative projects listed in Table 3-1, p. 3-7, regardless of construction date, would dispose of construction debris at available landfills, which would contribute to reductions in available landfill capacity. However, similar to the proposed project or variant, some of the cumulative projects would be required to divert at least 75 percent of solid waste generated as discussed under Impact UT-4. Although SFSU is not subject to local regulations, Future State 2035 proposes to reduce construction and demolition waste by selecting sustainable materials and promoting on-site reuse.

The cumulative projects that could generate solid waste during operation are the 460 West Portal Avenue Project, the SFSU Future State 2035 project, and the Parkmerced project. Similar to the proposed project or variant, the 460 West Portal Avenue and Parkmerced projects are in San Francisco and would be subject to the Mandatory Recycling and Composting Ordinance, California's Mandatory Commercial Recycling Law, and California Public Resources Code section 42649.8. While SFSU is not required to comply with the City's regulations, the Future State 2035 project would be required to comply with state and federal solid waste regulations, such as California Public Resources Code section 42649.8. In addition, Future State 2035 proposes to increase diversion by banning non-compostable food containers, replacing two-bin systems with three-bin (including compost) systems, and providing regular education campaigns on campus.[321] Activities that increase availability of and education about compost bins would be consistent with the City's Mandatory Recycling and Composting Ordinance. Given that cumulative projects and the proposed project or variant would be required to comply with the local and state requirements, and that Future State 2035

[320] San Francisco State University, *Future State 2035 San Francisco State University Campus Vision Plan*, September 14, 2018.
[321] Ibid.

proposes strategies that would increase waste diversion, the cumulative impact on landfill capacity or attainment of solid waste reduction goals would be ***less than significant***.

CHAPTER 4
OTHER CEQA CONSIDERATIONS

This chapter discusses the following topics in relation to the proposed project or variant: growth-inducing impacts, significant unavoidable impacts, significant irreversible impacts, and areas of known controversy and issues to be resolved.

4.A Growth Inducement

The California Environmental Quality Act (CEQA) Guidelines require that an environmental impact report (EIR) evaluate the growth-inducing impacts of a proposed action (section 15126.2(e)). A growth-inducing impact is defined in CEQA Guidelines section 15126.2(e) as:

> *[T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth … It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involved construction of new housing that would result in new residents moving to the area. A project can have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial, governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service (e.g., a wastewater treatment facility). Increases in population could strain existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The CEQA Guidelines also require analysis of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The project site is located within the 19th Avenue Priority Development Area, which includes Merced Manor and Parkmerced, and is bounded by Eucalyptus Drive and Sloat Boulevard to the north, 19th Avenue to the east, Wilshire Avenue to the south, and Lake Merced Boulevard to the west. Priority Development Areas as identified in Plan Bay Area 2050, call for an increasing percentage of Bay Area growth to occur as infill development in areas located near transit and where services necessary to daily living are provided in proximity to housing and jobs. With its abundant transit service and mixed-use neighborhoods, San Francisco is expected to accommodate an increasing share of future regional growth.

As discussed under Section E.2, Population and Housing, Impact PH-1 in Appendix B, the addition of up to 2,930 new market-rate and affordable residential units under the proposed project and 3,080 units under the variant would increase the residential population on the site by approximately 6,915 and 7,269 persons, respectively. ABAG's housing unit projection for the 19th Avenue Priority Development Area is 11,170 in 2040,

compared to a 2010 housing unit number of 5,220.[322] The variant represents the maximum increase of 3,080 new housing units at the project site and would represent 59 percent of the housing unit growth within the 19th Avenue Priority Development Area during that period. The growth projections in the 19th Avenue PDA represent planned growth in the city, as Priority Development Areas are locally designated areas within existing communities that have been identified and approved by local cities or counties for future growth. Furthermore, the new residents on the project site would not be substantial for the city as a whole, as it would represent approximately 1.2 percent of the projected increase in citywide population growth of 591,359. Therefore, the population increase associated with the proposed project or variant is within the planned growth for San Francisco. As also described under the Impact PH-1, the proposed retail sales and non-retail sales and services, hotel, and institutional uses would generate an estimated 1,242 employees under the proposed project or 1,258 under the variant. Therefore, the proposed project would increase new housing demand from employment; however, as discussed under Impact PH-1, this demand would be offset by the proposed housing units. Furthermore, as addressed under their respective topics in the draft EIR, this project- or variant-related growth would be served by existing utilities, infrastructure, and public services. In summary, the increase in the residential and employment population on the project site would not result in a substantial or unplanned increase in the population of the project vicinity or the city.

The proposed project or variant also would not indirectly induce substantial population growth in the project area because it would be located on a developed site in an urbanized area and would not involve any extensions of roads or other infrastructure beyond the project site that could enable additional development in currently undeveloped areas. Instead, the proposed project or variant would implement a portion of the planned residential growth within the 19th Avenue Priority Development Area. Thus, the proposed project or variant would not induce growth by removing a barrier to growth and would serve to concentrate growth in the project area instead of elsewhere in San Francisco. Based on this analysis, the proposed project or variant would not have a significant growth-inducing impact, and no mitigation is required.

4.B Significant Unavoidable Environmental Effects of the Proposed Project or Variant

CEQA Guidelines sections 15126(b) and 15126.2(c) requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. Development of the proposed project or variant would result in the significant and unavoidable impacts discussed below and further discussed in Sections 3.A, Historic Architectural Resources; 3.B, Transportation and Circulation; 3.C, Noise; 3.D, Air Quality; and 3.E, Wind.

4.B.1 Historic Architectural Resources

- The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code. (Impact CR-1)

[322] ABAG and MTC, *Draft Plan Bay Area Draft Forecast of Jobs, Population, and Housing,* March 2013, https://www.planbayarea.org/sites/default/files/pdf/Draft_Plan_Bay_Area/Draft_PBA_Forecast_of_Jobs_Population_and_Housing.pdf, accessed June 16, 2022. While *Plan Bay Area 2050* is the most current regional planning document, it does not contain forecasts at the Priority Development Area level; therefore, this analysis considers data that was available as part of *Plan Bay Area 2040* to estimate planned growth in the 19th Avenue Priority Development Area.

4.B.2 Transportation and Circulation

- Operation of the variant would substantially delay public transit. (Impact TR-4)
- The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably. (Impact C-TR-4)

4.B.3 Noise

- Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Impact NO-1)
- Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Impact C-NO-1)

4.B.4 Air Quality

- During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-1)
- During operation, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the region is in nonattainment under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-2)

4.B.5 Wind

- During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact WI-1)
- At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact WI-2)
- The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact C-WI-1)

4.C Significant Irreversible Changes

In accordance with CEQA section 21100(b)(2)(B) and CEQA Guidelines section 15126.2(c), an EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. This may include current or future uses of non-renewable resources, secondary or growth-inducing impacts that commit future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. According to the CEQA Guidelines, irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

In general, irreversible commitments include energy consumed and materials used during construction of a proposed project as well as the energy and natural resources (notably, water) required to sustain the project and its inhabitants or occupants over the usable life of the project.

The consumption of nonrenewable resources includes conversion of agricultural lands and lost access to mining reserves. As discussed in the initial study (see Appendix B), the project site does not contain any prime farmland, unique farmland, farmland of statewide importance. Therefore, no existing agricultural lands would be converted to non-agricultural uses. In addition, the project site does not contain known mineral resources and does not serve as a mining reserve; therefore, the proposed project or variant would not result in the loss of access to mining reserves.

No significant environmental damage, such as accidental spills or explosions of hazardous materials, is anticipated with implementation of the proposed project or variant. Compliance with federal, state, and local regulations would ensure that this potential impact would be reduced to a less-than-significant level.

Construction of the proposed project or variant would require the use of energy, including energy produced from non-renewable resources, and energy would be consumed during the operational period of the proposed project or variant. Construction would also require the commitment of construction materials, such as steel, aluminum, and other metals, concrete, masonry, lumber, sand and gravel, and other such materials, as well as water. However, new buildings in California are required to conform to energy conservation standards specified in California Code of Regulations Title 24, which are among the most stringent in the United States. The standards establish energy budgets for different types of residential and nonresidential buildings with which all new buildings must comply. In addition, to ensure that all buildings are healthy, sustainable places to live, work, and learn, the San Francisco Green Building Code requirements are designed to reduce energy and water use, divert waste from landfills, encourage alternate modes of transportation, and support the health and comfort of building occupants in San Francisco. New construction in San Francisco must meet all applicable California and local building codes, provide onsite facilities for recycling and composting, and meet the City's green building requirements tied to the Leadership in Energy and Environmental Design (LEED) and GreenPoint Rated green building rating systems, all of which would ensure that natural resources are conserved or recycled to the maximum extent feasible and that greenhouse gas emissions resulting from the proposed project or variant would be minimized. Even with implementation of conservation measures, the consumption of natural resources, including electricity and natural gas, would generally increase with implementation of the proposed project or variant. However, the proposed project or variant would not involve the wasteful, inefficient, or unnecessary consumption of energy resources, as discussed in the initial study (see Section E.19, Energy in Appendix B). Overall, the proposed project or variant would be expected to use less energy and water over the lifetime of the proposed buildings than comparable structures not built to these same standards.

As further described in Section 3.G, Utilities and Service Systems and Impact UT-2 in Appendix B, while the proposed project or variant would incrementally increase the demand for water in San Francisco, the estimated increase in demand would be accommodated within available water supplies and current water supply planning. While potable water use would increase, the proposed project or variant would be designed to incorporate water-conserving measures, such as low-flush toilets and urinals, as required by the San Francisco Green Building Ordinance and the City's Non-potable Water Ordinance. During construction activities, water may be used for soil compaction and dust control activities. However, as discussed under Section 3.D, Air Quality, San Francisco Public Works Code article 21 restricts the use of potable water for soil

compaction and dust control activities undertaken in conjunction, unless permission is obtained from the San Francisco Public Utilities Commission. Therefore, while the consumption of water would increase as the result of construction and operation of the proposed project or variant, it would not involve the wasteful, inefficient, or unnecessary use of water resources, as discussed in Section 3.G, Utilities and Service Systems.

Development of the proposed project or variant, an infill project within a developed urban area, would not substantially alter the pattern of land use or transportation in the project vicinity and, therefore, would not commit future generations of the project site and vicinity to any particular land use or transportation pattern, nor would it mean that the project site could not be feasibly redeveloped again at some unknown date in the future.

4.D Areas of Known Controversy and Issues to Be Resolved

The public and agencies have expressed some concerns about the proposed project or variant that are related to the environmental topics reviewed in this draft EIR and initial study. The public comments are in response to the notice of preparation (NOP) for the proposed project or variant that the planning department published on April 27, 2022. Notices were mailed to other City departments, neighborhood groups, public agencies, and interested parties to announce a meeting where the public could comment on the scope of the draft EIR's environmental analysis. A scoping meeting was held on May 9, 2022, to explain the environmental review process for the proposed project or variant and to provide opportunity to receive public comment and concerns related to the proposed project or variant's environmental issues. Written comments on the NOP were accepted during a 30-day period from April 28, 2022, until May 30, 2022. The NOP and comments received on the NOP are included in Appendix A.

To the extent the comments received on the NOP relate to environmental issues, they are addressed in the draft EIR and initial study. Any comments related to the proposed project or variant's merits that cannot be addressed through the CEQA process will be provided to decision-makers as part of the entitlement process. Potential areas of controversy and unresolved issues for the proposed project or variant, as expressed by agencies and community members, include the following:

- Vehicle Miles Traveled (VMT) and transportation conflicts with pedestrians, bicycles, travelers with disabilities, and transit performance
- Potential impacts to Caltrans right-of-way
- Project and cumulative impacts on traffic congestion and parking
- Impacts on scenic vistas and views
- Growth-inducing and cumulative impacts
- Shadow impacts on nearby schools, churches, streets, sidewalks, open spaces, and residences
- Construction and operational noise impacts on surrounding neighborhoods
- Air quality, wind, and reflective glare impacts
- Impacts on public services
- Impacts related to the geology of the project site and liquefaction
- Impacts related to hazardous materials

- Impacts related to greenhouse gas emissions
- Impacts related to population and housing
- Impacts related to utilities and water supply
- Impacts related to archeological and tribal cultural resources

CHAPTER 5
ALTERNATIVES

5.A Introduction

This chapter presents the alternatives analysis as required by CEQA for the proposed project or variant. The discussion includes the methodology used to select alternatives to the proposed project or variant for detailed CEQA analysis. The intent of this process is to develop potentially feasible alternatives that could avoid or substantially lessen the significant impacts identified while still meeting most of the project's basic objectives as outlined in Section 5.A.1 below. This chapter identifies a reasonable range of alternatives that meet these criteria and evaluates them for their comparative merits with respect to minimizing adverse environmental effects.

This chapter is divided into five main sections:

- Section 5.A, Introduction, p. 1, is this introductory section that describes the CEQA requirements for an alternatives analysis, identifies the project objectives, and summarizes the project's significant impacts.
- Section 5.B, Alternatives Screening and Selection, p. 5-4, describes the basis for selecting the alternatives analyzed in this EIR; it reviews the project objectives, summarizes the significant impacts of the project that were identified in Chapter 3 of this EIR, and describes the alternatives screening and selection process.
- Section 5.C, Alternatives Analysis, p. 5-13, presents a detailed analysis and evaluation of the environmental impacts of each of the alternatives.
- Section 5.D, Comparison of Alternatives and Environmentally Superior Alternative, p. 5-64, presents a comparison of alternatives' impacts and identifies the environmentally superior alternative, based on the described analysis.
- Section 5.E, Alternatives Considered but Rejected, p. 5-81, discusses alternative concepts that were considered but rejected from further study.

5.A.1 CEQA Requirements for Alternatives Analysis

CEQA Guidelines section 15126.6(a) states that an environmental impact report (EIR) must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives but avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a project or alternatives that are considered infeasible. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. Specifically, the CEQA Guidelines set forth the following criteria for selecting and evaluating alternatives:

- "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible." (CEQA Guidelines section 15126.6(a))
- "[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." (CEQA Guidelines section 15126.6(b))
- "The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines section 15126.6(c))
- "The specific alternative of 'no project' shall also be evaluated along with its impact." (CEQA Guidelines section 15126.6(e)(1))
- "The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making." (CEQA Guidelines section 15126.6(f))

5.A.2 Project Objectives

As presented in Chapter 2, Project Description, the project sponsor seeks to achieve the following objectives by undertaking the proposed project or variant, which are presented below for use in the identification, selection, and evaluation of alternatives. The project objectives are numbered for convenience only and do not represent a prioritization of the objectives.

1. Redevelop the underutilized portions of the project site, including surface parking lots, structured parking, and vacant structures surrounding Stonestown Galleria, to create a new neighborhood that reflects excellence in urban design principles; that provides a mix of residential, retail, commercial, hotel, public gathering spaces, and community uses to support a vibrant town center; and that benefits the existing surrounding neighborhoods, Stonestown Galleria, and the future new residents.
2. Contribute to meeting the San Francisco General Plan Housing Element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for San Francisco by maximizing the number of dwelling units throughout the Project site and providing housing in proximity to local and regional public transportation.
3. Build a mixed-income residential community that provides housing at a range of affordability levels, with a wide range of building styles, heights, dwelling unit types, tenure, and supporting on-site

amenities; that attracts a diversity of household compositions, including children, adults, and seniors; and that increases business and employment opportunities.

4. Prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to open space and to the existing surrounding residential neighborhood of Merced Manor.
5. Add new residents, open space amenities, and complementary retail to bring more shoppers to the site while supporting the continued operations of the existing Stonestown Galleria, and create synergies among uses on the site.
6. Link the retail-centric heart of the project, located around the existing Stonestown Galleria and the new 20th Avenue corridor, to the existing and proposed adjacent residential areas through a network of pedestrian pathways, plazas, and parks.
7. Focus the customer journey by concentrating a variety of retail, restaurant, commercial uses, and supportive parking within the retail-centric heart of the site located around the existing shopping center and the new 20th Avenue corridor in order to optimize foot traffic for retail tenants and maximize cross-shopping opportunities by shoppers and visitors to the project.
8. Provide space to accommodate other commercial uses, including hotel, small office, medical office, and other neighborhood-serving uses complementary to a town center and to serve project residents as well as visitors of the site.
9. Provide active public gathering spaces adjacent to Stonestown Galleria to promote and improve opportunities for mingling and connection for people of all ages and abilities.
10. Build adequate parking and loading access to serve the needs of project residents, workers, retailers, visitors, and the existing Stonestown Galleria and concentrate parking near the retail centric core of the project site.
11. Create a circulation and transportation system that emphasizes transit-oriented development, maximizes foot traffic to the shopping center, and provides pedestrian and bicycle connections to and from the Project site to adjacent neighborhoods and recreational areas such as Ocean Beach, Rolph Nicol Jr. Playground, Lake Merced, and Stern Grove.
12. Improve the infrastructure at the project site, including new streets and sidewalks, bicycle and pedestrian amenities, multiuse paths, water, sewer, gas/electric utilities, and new fire hydrant infrastructure.
13. Build a neighborhood resilient to sea level rise and earthquakes and demonstrate leadership in sustainable development by constructing improvements intended to reduce the neighborhood's per capita consumption of electricity, natural gas, and potable water, and generation of wastewater.
14. Create a development that is financially feasible and that can fund the project's capital costs and ongoing operation and maintenance costs relating to the redevelopment and long-term operation of the property.

5.A.3 Summary of Significant Impacts

The draft EIR identifies significant and unavoidable impacts after implementation of mitigation measures associated with historic architectural resources, transportation and circulation, noise and vibration, air quality, and wind (see Chapter 3, Environmental Setting, Impacts, and Mitigation Measures).

HISTORIC ARCHITECTURAL RESOURCES

- The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code. (Impact CR-1)

TRANSPORTATION AND CIRCULATION

- Operation of the of the variant would substantially delay public transit. (Impact TR-4)
- The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably. (Impact C-TR-3)

NOISE

- Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Impact NO-1)
- Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards. (Impact C-NO-1)

AIR QUALITY

- During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-1)
- During operation, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the project region is in nonattainment under an applicable federal, state, or regional ambient air quality standard. (Impact AQ-2)

WIND

- During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact WI-1)
- At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact WI-2)
- The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use. (Impact C-WI-1)

5.B Alternatives Screening and Selection

In accordance with CEQA Guidelines section 15126.6(a), this draft EIR examines a reasonable range of alternatives to the proposed project or variant.[323] An alternative selected for analysis must meet the following three criteria: (1) the alternative would attain most of the project's basic objectives, (2) the alternative would avoid or substantially lessen the significant environmental impacts of the project, and (3) the alternative would be potentially feasible. An EIR need not consider an alternative whose impact cannot be reasonably ascertained and whose implementation is remote and speculative. Furthermore, an EIR need not consider every conceivable alternative but must consider a reasonable range of alternatives to foster informed decision-making and public participation.

The planning department based the alternatives selection process on identifying alternative concepts that would avoid or lessen the significant and unavoidable impacts identified above. Strategies to avoid or lessen significant environmental impacts primarily involved reducing the extent of development that could occur with implementation of the proposed project or variant, thereby reducing significant impacts. The planning department then screened the potential alternatives for their feasibility and ability to meet most of the project objectives. This process resulted in the selection of four alternatives to be carried forward for detailed evaluation, not including the No Project Alternative. The planning department determined that these alternatives, along with the No Project Alternative, represent a reasonable range of alternatives described and analyzed in this draft EIR.

5.B.1 Strategies to Avoid or Lessen Significant Impacts

The significant and unavoidable impacts identified for the proposed project or variant that the alternatives were tailored to avoid include the following topics:

- Historic architectural resources
- Transit delay
- Noise and air quality effects of construction activities
- Air quality effects of operational activities
- Operational wind hazards

These strategies were then used to formulate alternatives for analysis in this chapter.

ALTERNATIVE DEVELOPMENT TO ADDRESS IMPACTS TO HISTORIC ARCHITECTURAL RESOURCES

As described in Section 3.A, Historic Architectural Resources, six buildings and structures within the project site are considered potential historic architectural resources pursuant to CEQA, as they are at least 45 years old. Each structure was evaluated in the 2022 historic resource evaluation prepared for the project (see Appendix C.1, Historic Resource Evaluation). Of the six buildings and structures that were evaluated, the

[323] The impacts of the proposed project or variant are generally the same in most instances. Therefore, the alternatives address both the proposed project and the variant. When the variant impact conclusion is different than that of the proposed project, the alternatives are directly compared to the variant in addition to the proposed project.

planning department determined that only the former UA Stonestown Twin Theater at 501 Buckingham Way is considered a historic resource under CEQA as an example of the New Formalism style within San Francisco.

The proposed project or variant would demolish the former UA Stonestown Twin Theater as part of the proposed redevelopment of approximately 27 acres surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use community. Demolition of the UA Stonestown Twin Theater would therefore materially impair the significance of a historic architectural resource. Mitigation Measures M-CR-1a through M-CR-1c included in Section 3.A, Historic Architectural Resources, of this draft EIR would partially compensate for impacts associated with the proposed project or variant through comprehensive documentation, salvage, and memorialization of the historic architectural resource. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. Consequently, the impact of the proposed project or variant on the historic architectural resource would remain significant and unavoidable with mitigation.

Impacts on the historic architectural resource would be avoided or substantially lessened by retaining all or some of the theater building proposed for demolition and rehabilitating it consistent with the Secretary of the Interior's Standards for Rehabilitation. Various approaches to retain the character-defining features of the theater building were considered[324], and a full preservation alternative that would retain the theater building with minor changes and a partial preservation alternative that would retain portions the theater building were developed. The two preservation alternatives plus the no project alternative were included in a preservation alternatives analysis report[325] prepared with guidance and direction from the planning department pursuant to San Francisco Historic Preservation Commission (HPC) resolution no. 0746[326] and presented to the HPC on September 7, 2022.

The HPC's comments and suggested refinements to the preservation alternative are summarized as follows:[327]

- The HPC found the preservation alternatives to be well developed and adequate.
- Some members of the HPC found the partial preservation alternative to be successful and expressed a desire to retain the lobby of the historic resource. Additionally, some members of the HPC agreed that the rear auditorium massing does not need to be retained for the partial preservation alternative.
- The HPC explored the following potential alterations to the alternatives:
  - A taller transitional volume to the rear for the partial preservation alternative;
  - Possibility of constructing a cantilevered mass to recapture the lost unit count in the partial preservation alternative.
  - Examine whether the lost units could be recaptured elsewhere on the project site and examine the possibility of incorporating other uses within the theater building.

[324] Additional information on alternatives considered and rejected is provided below in Section 5.E.2. Alternatives Considered and Rejected.
[325] Page & Turnbull, *Final United Artists Stonestown Twin Theater Preservation Alternatives Analysis Report*, prepared for the City of San Francisco Planning Department, August 26, 2022.
[326] Resolution No. 0746 (approved March 15, 2015) clarifies expectations for the evaluation of significant impacts to historic resources and the preparation of preservation alternatives in a draft EIR.
[327] This summary includes comments from the HPC provided at the hearing on September 7, 2022, as well as follow up comments by Commissioner Nageswaran on the Full Preservation Alternative.

- Possibility of utilizing the open space between St. Stephen Catholic Church and the theater for more housing and explore compatible non-residential uses within the theater building.
- Explore an additional full preservation alternative that would preserve the theater and retain a public gathering use.
- Overall, the HPC encouraged the project sponsor to explore modifications to the preservation alternatives so as to recapture units in comparison with the proposed project.

The full preservation and partial preservation alternatives presented to the HPC were refined in response to the HCP's input and formed the basis for Alternatives B and C analyzed in this chapter. Prior to the HPC hearing, the full preservation alternative would retain the existing theater building and convert it into a residential building with ten units, which would result in 160 fewer dwelling units than the proposed project. In response to the HPC's comments, the full preservation alternative was modified to include a new 100-unit building (Block W5) between Blocks W1 and W3, and a 5-unit building on Block NW4 between the theater building and Block NW1. Therefore, the Full Preservation Alternative (Alternative B) analyzed in this chapter would result in 60 less dwelling units than the proposed project.

The partial preservation alternative presented to the HPC would retain the front lobby, stucco-clad hyphen, and sunken entry plaza sections of the existing theater building but would remove the rear auditorium volume to install an addition (Block NW2). Prior to the HPC hearing, this alternative was designed with the rear addition that would consist of a 30-foot section, before rising to eight-stories. This version of the partial preservation alternative would result in 70 fewer dwelling units than the proposed project. To address the HPC comments, the partial preservation alternative was modified to extend the eight-story Block NW2 to the back of the theater building to accommodate additional units, which would eliminate the 30-foot section and stucco-clad hyphen. Therefore, the Partial Preservation and Relocated Parking Alternative (Alternative C) analyzed in this chapter would have 40 fewer dwelling units than the proposed project. Based on the information in the preservation alternatives analysis report, this chapter analyzes a full preservation alternative and a partial preservation alternative with the modifications described above.

Alterations to the alternatives that were suggested by the HPC and explored by the project team and planning department but ultimately not included in the two preservation alternatives are discussed in the considered and rejected alternatives section below.

ALTERNATIVE DEVELOPMENT TO ADDRESS TRANSIT DELAY

In the existing plus project condition, the addition of vehicle trips generated by the proposed project would not increase transit delay to significant levels. The addition of vehicle trips generated by the variant (approximately 2 percent higher than the trips associated with the proposed project) would increase transit delay along the 57 Parkmerced inbound and would exceed the significance threshold. Two mitigation measures were identified but cannot be guaranteed to reduce the impact to less than significant, so the variant's impact is significant and unavoidable with mitigation.

In cumulative conditions, the project or variant in combination with anticipated future development (including the adjacent Parkmerced project) would increase transit delay and would exceed the significance threshold for three of the transit lines analyzed (57 Parkmerced, 58 Lake Merced, and SamTrans Route 122)

and for the aggregated 28/28R lines in the outbound (i.e., southbound) direction.[328] As a result, the proposed project or variant, in combination with cumulative projects, could result in a significant cumulative public transit delay impact. The proposed project's or variant's contribution would be cumulatively considerable.

Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips, requires the project sponsor to develop a transportation demand management (TDM) program that reduces the estimated number of project vehicle trips by 10 percent on a daily basis and within the weekday p.m. peak hour. The reduction of project vehicle trips associated with Mitigation Measure M-TR-4a would reduce the project contribution to additional transit delay and, for the cumulative scenario, reduce the proposed project's or variant's contributions to cumulative impacts. Mitigation Measure M-TR-4b, Signal Coordination and Transit Signal Priority along 20th Avenue at New Traffic Signals, would reduce northbound bus delay along the 20th Avenue corridor by reducing the expected number of stops for buses (and other vehicles) between Winston Drive and Eucalyptus Drive. The measure would require the proposed traffic signals at 20th Avenue/Street A, 20th Avenue/Street B, 20th Avenue/Buckingham Way, and 20th Avenue/Eucalyptus Drive to provide transit signal priority, which would increase the likelihood that an approaching bus would receive a green signal indication. As discussed under Impact TR-4, p. 3.B-65, the TDM program would include a performance standard to reduce up to 10 percent of vehicle trips, but that additional reduction would not reduce the proposed project or variant's contribution to transit delay to less-than-considerable levels. Furthermore, signal coordination and inclusion of transit signal priority along 20th Avenue would provide modest reduction in delay for the 57 Parkmerced which travels along 20th Avenue, but not substantial enough to reduce the project or variant contribution to less than cumulatively considerable (and for only one of the four lines identified as impacted). This mitigation measure would require SFMTA approval and thus cannot be guaranteed by the project sponsor.

An additional strategy that could reduce the cumulative public transit delay impact include relocating off-street parking facilities within the project site. The proposed project or variant's contribution to transit delay is a function of the vehicle trip paths to and through the project site—specifically, to what degree they overlap with transit lines and add to intersection turning movements already experiencing substantial delay. Therefore, relocating retail parking within the project site could redistribute some project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue) and that are used by multiple transit routes. Reducing project-generated vehicle trips along the transit routes would reduce, to some extent, the proposed project or variant's cumulatively considerable contribution to increases in transit delay. Alternative C, Partial Preservation and Relocated Parking Alternative, also addresses relocating retail parking within the project site.

Additionally, reducing the density of the proposed project or variant is a strategy to reduce the number of project-generated vehicle trips, which would in turn could reduce the potential for the proposed project or variant to result in a cumulatively considerable contribution to increases in transit delay. Alternative D, Code Compliant Alternative, and Alternative E, Reduced Density Alternative, incorporate this strategy.

ALTERNATIVE DEVELOPMENT TO ADDRESS NOISE AND AIR QUALITY EFFECTS

As discussed in Section 3.C, Noise and Vibration, construction of the proposed project or variant would result in an increase in ambient noise levels at sensitive receptors in excess of applicable standards. Mitigation Measure M-NO-1 includes construction noise control measures to reduce significant construction-related

[328] The threshold is 4 minutes of additional delay for the three individual lines listed and is 2.2 minutes for the combined 28/28R cumulative analysis. The thresholds are described in more detail in Section 3.B.4, p. 3.B-20, and in Appendix D.2, Transit Analysis Memorandum.

noise impacts. However, this impact would remain significant and unavoidable even with implementation of the mitigation measure. Due to the proximity of identified sensitive receptors, there are no feasible alternatives that could be designed to avoid this impact. While Alternative D, Code Compliant Alternative, and Alternative E, Reduced Density Alternative, would reduce these impacts, they would remain significant and unavoidable.

Section 3.D, Air Quality, identifies mitigation measures for construction and combined construction and operational criteria pollutant emissions and toxic air contaminants (TACs) that would be significant and unavoidable. Such measures include construction emissions minimization and an emission offsets program for reactive organic gases (ROG). These measures represent feasible strategies to lessen air quality impacts of the proposed project or variant, although not to a less-than-significant level.

The significant-and-unavoidable operational air quality impact relates to the size and location of the proposed development. Full buildout of the proposed project or variant would generate criteria air pollutant emissions that would exceed thresholds for ozone precursors—specifically ROG—even with mitigation. As described in Section 3.D, Air Quality, after implementation of mitigation measures, consumer product use would generate the majority of the proposed project or variant's operational ROG emissions (69 percent), followed by mobile sources (28 percent), architectural coatings (2 percent), and generators (1 percent).

The construction and operational air quality impacts are associated with the scale and duration of the development and the proximity to sensitive receptors. One strategy to reduce these construction and operational air quality impacts is to reduce the size of development that would reduce the gross square footage of development and the number of new residents and employees. This would also result in a reduction of the site and duration of construction and operational activities. However, this strategy would not meet some of the proposed project or variant's objectives. Alternative D, Code Compliant Alternative, and Alternative E, Reduced Density Alternative, represent reduced development alternatives compared to the proposed project or variant. Both alternatives avoid the proposed project or variant's significant and unavoidable air quality impacts, but not the significant and unavoidable noise impacts.

ALTERNATIVE DEVELOPMENT TO ADDRESS OPERATIONAL WIND HAZARDS

As described in Section 3.E, Wind, the proposed project or variant would result in wind conditions that exceed wind hazards thresholds under partial buildout and full buildout conditions. Therefore, hazardous wind conditions would worsen on the project site compared to existing conditions. Mitigation Measure M-WI-1a, Wind Safety Plan, requires the project sponsor to implement a wind safety plan approved by the planning department as a condition of approval for any building and site permit subject to this mitigation measure. Mitigation Measure M-WI-1b, Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet, requires reduction in wind hazard exceedances at ground level. If the project sponsor cannot demonstrate that all exceedances of the wind hazard criterion, as compared to then existing conditions could not be eliminated after implementation of Mitigation Measure M-WI-1b, then a qualified wind consultant shall demonstrate to the planning department that the proposed project or variant would not exceed the total number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR. Finally, if wind hazard exceedances cannot be eliminated through implementation of physical design measures, and landscaping or wind baffling measures on or off the project site are required. A maintenance plan for such features would be required by Mitigation Measures M-WI-1c and M-WI-1d.

However, as described in Section 3.E, the specific design of individual future buildings is currently unknown. As such, it cannot be stated with certainty that future buildings developed under the proposed project or variant could be feasibly designed in a way that would reduce hazardous wind speeds as compared to the then-existing conditions, even with mitigation incorporated. Therefore, the impact would remain significant and unavoidable with mitigation. The majority of the wind hazard exceedances are on the west side of the project site, driven by large building masses along Buckingham Way. One strategy to reduce the wind hazard impacts is to reduce the massing and heights of the buildings. Alternative D, Code Compliant Alternative, and Alternative E, Reduced Density Alternative, described and evaluated in this chapter were developed to address this impact.

5.B.2 Alternatives Selected

Based on the screening process described above, the following alternatives were selected for detailed analysis in this draft EIR:

- Alternative A: No Project Alternative
- Alternative B: Full Preservation Alternative
- Alternative C: Partial Preservation and Relocated Parking Alternative
- Alternative D: Code Compliant Alternative
- Alternative E: Reduced Density Alternative

These five alternatives were determined to adequately represent the range of feasible alternatives required under CEQA. These alternatives would lessen and, in some cases, avoid significant and unavoidable adverse impacts related to historic architectural resources, transportation and circulation, noise and vibration, air quality, and wind that were identified for the proposed project or variant.

Table 5-1 summarizes and compares the characteristics of the proposed project and variant with those of Alternatives A through E. Detailed descriptions of each alternative are presented in Section 5.C, Alternatives Analysis, p. 5-13, including the assumptions used in analyzing their environmental impacts. For each alternative, the descriptions include land uses and features that differ from the proposed project or variant, and construction assumptions.

The proposed project and the variant differ in the following ways: the variant includes the addition of 150 dwelling units, 10,000 square feet of institutional uses, and 200 parking spaces on Block E3. Consequently, the impacts of the proposed project or variant when compared to the alternatives is generally the same in most instances. When the variant impact conclusion is different than that of the proposed project, the alternatives are directly compared to the variant in addition to the proposed project.

Table 5-1 Characteristics of the Proposed Project, Variant, and Alternatives

Project Characteristics	Proposed Project	Variant	Alternatives				
			Alternative A: No Project	Alternative B: Full Preservation	Alternative C: Partial Preservation and Relocated Parking Location	Alternative D: Code Compliant	Alternative E: Reduced Density
PROPOSED LAND USE PROGRAM	**AREA (APPROXIMATE SQUARE FEET)**						
Residential Use	Up to 3,100,000	Up to 3,200,000	0	3,040,000	3,060,000	1,876,300	1,860,000
Retail Sales and Services Use	Up to 160,000 (81,700 net new)	Up to 160,000 (81,700 net new)	818,300	Up to 156,000 (77,700 net new)	Up to 156,000 (77,700 net new)	Up to 53,100 (39,800 net new)	Up to 75,000 (-3,300 net reduction)
Non-Retail Sales and Service Use	Up to 200,000 net new	Up to 200,000 net new	0	Up to 200,000 net new	Up to 200,000 net new	0	Up to 200,000 net new
Hotel	Up to 100,000 (up to 200 rooms) net new	Up to 100,000 (up to 200 rooms) net new	0	Up to 100,000 (up to 200 rooms) net new	Up to 100,000 (up to 200 rooms) net new	0	Up to 100,000 (up to 200 rooms) net new
Institutional Use	Up to 53,000 net new	Up to 63,000 net new	0	Up to 50,000 net new	Up to 54,000 net new	Up to 20,135 net new	Up to 63,000 net new
Total Building Area	***3,613,000***	***3,723,000***	***818,300***	***3,546,000***	***3,570,000***	***1,949,535***	***2,298,000***
PROPOSED DWELLING UNITS	**NUMBER (APPROXIMATE)**						
Dwelling Units	2,930	3,080	0	2,870	2,890	2,011	1,758
PROPOSED PARKING	**NUMBER (APPROXIMATE)**						
Vehicle parking spaces	4,250	4,450	3,400	4,255	4,250	3,682	2,650
CAR-SHARE PARKING SPACES	**APPROXIMATE NUMBERS – BASED ON PLANNING CODE REQUIREMENTS**						
Car-share parking spaces	66	68	0	65	65	60	41
BICYCLE PARKING	**APPROXIMATE NUMBERS – BASED ON PLANNING CODE REQUIREMENTS**						
Total Bicycle Parking	1,130	1,176	100	1,112	1,118	796	787
OPEN SPACE	**AREA (ACRES)**						
Publicly accessible open space	Approximately 6 net new		1.6	Approximately 3.2 net new	Approximately 6 net new	1.6 retained (no net new)	Approximately 6 net new
Private residential open space	Approximately 36 square feet per unit if located on balcony, or approximately 48 square feet per unit if commonly accessible to residents, or as otherwise refined in the planning code.		N/A	Approximately 36 square feet per unit if located on balcony, or approximately 48 square feet per unit if commonly accessible to residents, or as otherwise refined in the planning code.			

Project Characteristics	Proposed Project	Variant	Alternatives				
			Alternative A: No Project	Alternative B: Full Preservation	Alternative C: Partial Preservation and Relocated Parking Location	Alternative D: Code Compliant	Alternative E: Reduced Density
BUILDING CHARACTERISTICS							
Stories	3 to 18 stories		1 to 3 stories	3 to 18 stories	3 to 18 stories	3 to 6 stories	3 to 7 stories
Height	30 to 190 feet		15 to 65 feet	30 to 190 feet	30 to 190 feet	40 to 65 feet (NW and 19th Ave partially 40 feet)	30 to 80 feet
Ground floor	All blocks would include ground floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street		Retail sales and service	All blocks would include ground floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street			

5.C Alternatives Analysis

This section presents a detailed analysis of the selected alternatives potential environmental impacts compared to the proposed project or variant. A description of the alternative and analysis of the alternative compared to those of the proposed project or variant are presented in this section.

5.C.1 Alternative A: No Project Alternative

As required by CEQA Guidelines section 15126.6(e), a no project alternative is evaluated in this draft EIR to allow decision-makers to compare the environmental effects of approving the proposed project or variant with the effects of not approving the project or variant. CEQA Guidelines section 15126.6(e)(2) requires that the no project alternative analysis "discuss the existing conditions … as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and policies and consistent with the available infrastructure and community services." The no project alternative would not preclude development of the site by another project in the future. Currently, there are no other development proposals pending at the project site. Therefore, pursuant to CEQA Guidelines section 15126.6(e)(3)(B), the no project alternative for purposes of this analysis is considered "no build" wherein the existing environmental setting is maintained and is "the circumstance in which the project does not proceed."

NO PROJECT ALTERNATIVE DESCRIPTION

Under Alternative A, the project site would not be developed with either the proposed project or variant as described in Chapter 2, Project Description, of this draft EIR. Under Alternative A, the 27 acres of surface parking and surrounding structures in the 41-acre project site would not be redeveloped into a master-planned, mixed-use community. The existing 3,400 vehicle parking spaces on the project site would remain. Under Alternative A, the straightening of 20th Avenue between Euclid and Winston drives, new infrastructure, and streetscape and new open space would not be constructed.

The existing development controls on the project site would continue to govern site development and would not be changed. There would be no amendments to the general plan, planning code, or zoning map. The project site would remain under the existing C-2 (Community Business), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) Use Districts and the 40-X and 65-D Height and Bulk Districts. Any specific detail about the characteristics of future development under the No Project Alternative would be speculative because there are no other development proposals proposed or pending at the project site.

NO PROJECT ALTERNATIVE IMPACTS

This environmental analysis assumes that the existing uses on the project site would not change and that the existing physical conditions described in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in draft EIR Appendix B, Initial Study, Section E, Evaluation of Environmental Effects, would remain the same. If Alternative A were to proceed, no changes would be implemented, and none of the impacts associated with the proposed project or variant would occur. However, incremental changes would be expected to occur in the vicinity of the project site as nearby reasonably foreseeable cumulative projects (see Table 3-1, p. 3-7) are approved, constructed, and occupied. With no change to existing site conditions

under Alternative A, land use activity on the project site would not contribute to significant cumulative impacts beyond existing levels.

HISTORIC ARCHITECTURAL RESOURCES

Under Alternative A, the existing uses on the project site would not change. Under this alternative, the existing former UA Stonestown Twin Theater building would remain intact, vacant, and unaltered. Therefore, the significant historic architectural resource impact (Impact CR-1) attributable to the proposed project or variant would not occur and Mitigation Measures M-CR-1a through M-CR-1c identified in Section 3.A, Historic Architectural Resources, of this draft EIR would not be applicable. Compared to the proposed project or variant, Alternative A would not have any project-level or cumulative impacts related to historic architectural resources.

TRANSPORTATION AND CIRCULATION

Under Alternative A, the existing uses on the project site would not change. The existing plus variant significant public transit delay impact (Impact TR-4) and the cumulatively considerable contribution (project and variant) to the significant cumulative public transit delay impact (Impact C-TR-3) attributable to the proposed project or variant would not occur, and as such mitigation measures developed for the proposed project or variant would not be required as no construction would occur. Compared to the proposed project or variant, Alternative A would not have any project-level transportation and circulation impacts and would not contribute to any cumulative impacts related to transportation and circulation.

NOISE AND VIBRATION

Under Alternative A, the existing uses on the project site would not change. The significant project-level (Impact NO-1) and cumulative (Impact C-NO-1) construction-related noise increases attributable to the proposed project or variant would not occur, and mitigation measures developed for the proposed project or variant would not be required, as no construction would occur. Compared to the proposed project or variant, Alternative A would not have any project-level noise and vibration impacts and would not contribute to any cumulative impacts related to noise and vibration.

AIR QUALITY

Under Alternative A, the existing uses on the project site would not change. The significant construction and overlapping construction and operational criteria pollutant impact (Impact AQ-1) and operational criteria pollutant impact at project build out (Impact AQ-2) attributable to the proposed project or variant would not occur. The significant health risk impact (Impact AQ-3) attributable to the proposed project or variant would also not occur. As such, mitigation measures developed for the proposed project or variant would not be required as no construction or operation would occur. Compared to the proposed project or variant, Alternative A would not have any project-level or cumulative impacts related to air quality.

WIND

Under Alternative A, the existing uses on the project site would not change. The significant project-level (Impacts WI-1 and WI-2) and cumulative (Impact C-WI-1) impacts related to wind hazards attributable to the proposed project or variant would not occur, and mitigation measures developed for the proposed project or variant would not be required, as no construction would occur. Compared to the proposed project or variant, Alternative A would not result in any project-level or cumulative impacts related to wind.

SHADOW

Under Alternative A, the existing uses on the project site would not change and no new buildings would be constructed. As such, there would be no net new shadow on Rolph Nicol Jr. Playground and Junipero Serra Playground and the less-than-significant impacts of the project related to shadow would be avoided. Compared to the proposed project or variant, Alternative A would not result in any project-level or cumulative impacts related to shadow.

UTILITIES AND SERVICE SYSTEMS

Under Alternative A, the existing uses on the project site would not change, and there would be no increase in demand for water, wastewater, stormwater, solid waste, emergency, fire, and police services. Under Alternative A, the less-than-significant impacts of the project or variant related to utilities and service systems would not occur.

ISSUES ANALYZED IN THE INITIAL STUDY

The initial study (Appendix B) of this draft EIR concluded that the proposed project or variant would have no impacts, less-than-significant impacts, or less-than-significant-with-mitigation impacts related to the following environmental resource areas: land use and land use planning, population and housing, cultural resources (archeological resources and human remains), tribal cultural resources, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources, agriculture and forestry resources, and wildfire.

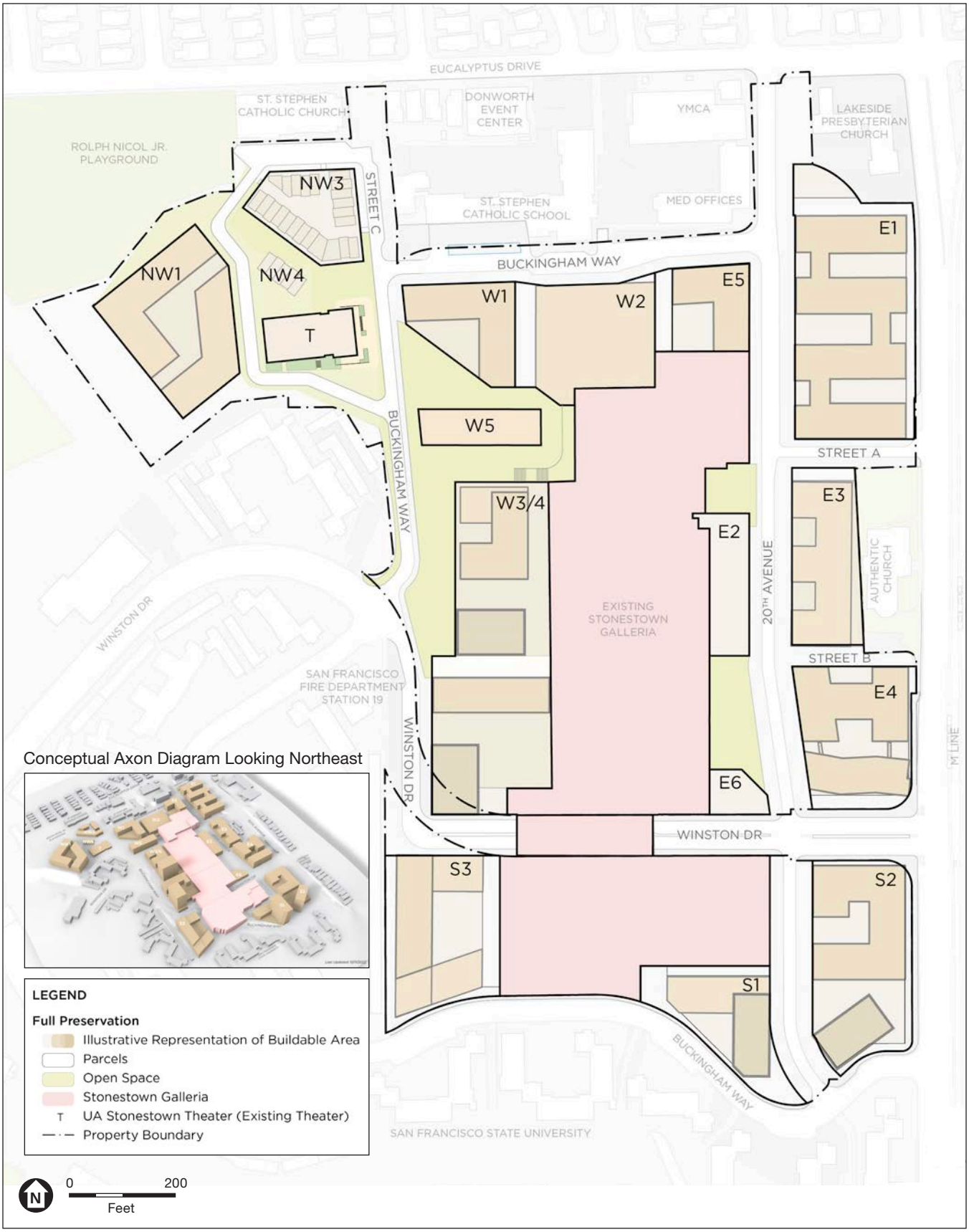
Alternative A would result in no impacts related to any of these environmental topics because this alternative would result in no changes to existing site conditions. Because there would be no ground disturbance or new construction at the site under Alternative A, mitigation measures presented in the initial study would not be required under Alternative A, and all of the-less-than-significant impacts identified in the initial study would be avoided.

5.C.2 Alternative B: Full Preservation Alternative

Alternative B is the Full Preservation Alternative, shown in **Figure 5-1**. The purpose of this alternative is to avoid or substantially reduce the significant and unavoidable impact on a historic resource that would occur under the proposed project or variant.

FULL PRESERVATION ALTERNATIVE DESCRIPTION

Alternative B would retain and rehabilitate the existing former UA Stonestown Twin Theater building in accordance with the Secretary of Interior's Standards and convert the building into a multifamily residential use with 10 units.



SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-1
ALTERNATIVE B: FULL PRESERVATION AND RELOCATED PARKING ALTERNATIVE

As shown in Figure 5-1, the site plan for Alternative B would be similar to that of the proposed project or variant with several exceptions. Alternative B would include the following changes as compared to the proposed project: (1) retention of the former UA Stonestown Twin Theater building; (2) a new 5-unit residential building at Block NW4 between the retained theater building and Block NW3, (3) a new 100-unit residential building at Block W5 between Blocks W1 and W3; (4) reduction in open space to 3.2 acres due to the new buildings at Blocks NW4 and W5; and (4) the proposed roadway that loops around the buildings in the northwest portion of the project site would remain but would be slightly altered to accommodate changes to Blocks NW2 and NW1. The Alternative B development program is shown in Table 5-1,p. 5-11.

Overall, the total building area would be approximately 3,546,000 square feet, which is a slight reduction in the development program compared to the proposed project (67,000 square feet less than the proposed project). The buildings' heights would generally be the same as those identified for the proposed project or variant, ranging from 30 to 190 feet with the tower parcels on Blocks W3, W4, S1, S2, and S3. The new buildings on Block NW3 and W5 would be approximately 40 and 70 feet tall, respectively.

Construction of Alternative B would have the same eight-year construction duration conservatively anticipated for the proposed project and is anticipated to occur in six overlapping phases. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements. Construction of Alternative B would be similar to the proposed project or variant both in magnitude and duration. Construction activities associated with rehabilitation of the theater building would be incorporated into the construction plan.

HISTORIC ARCHITECTURAL RESOURCE FEATURES

Under Alternative B, the character-defining features of the theater building would be retained to a high degree. The theater lobby would be converted to a residential lobby with minor alterations to the space. The primary façade with its groin vaulted colonnade and glazed walls and the sunken entry plaza at the primary façade would be retained. Alterations to the building would include the punching of window and door openings along the north and south sides of the rear auditorium volume and the insertion of windows along the west wall of the auditorium volume. These openings would be limited to approximately 30 to 40 percent of the wall surfaces of the rear volume. The rear volume of the building would be converted into a two-story space and skylights would be added to the flat roof to provide additional light to the residential units. One or both of the existing hallways between the lobby and the rear theater volume would be retained and reused to provide interior access to the units.

FULL PRESERVATION ALTERNATIVE IMPACTS

HISTORIC ARCHITECTURAL RESOURCES

Under Alternative B, the character-defining features of the theater building would be retained to a high degree. With the exception of the smooth, unadorned exterior wall surfaces of the theater building, all other character-defining features would be entirely retained.[329] The exterior wall surfaces of the theater building would be substantially retained, and new wall openings would be created in a discreet portion of the building.

Alternative B would not introduce conjectural features or architectural elements from other buildings to the historic resource in a way that would create a false sense of historical development. The former theater

[329] Page & Turnbull, p. 29.

would be converted to a multifamily residential use, and no changes would be made to the building's existing footprint. The new required openings on the north, west, and south walls of the rear auditorium volume would be clearly differentiated from the historic theater design through a contemporary design aesthetic and low-profile, unobtrusive materials and details. The alterations proposed under Alternative B could be removed and the new wall openings could be patched and repaired, and the essential form and integrity of the former theater and its environment would be unimpaired upon such reversal. Alternative B would preserve most character-defining features and not create a false sense of historical development and therefore would meet the Secretary of the Interior's Standards for Rehabilitation. Alternative B would comply with the rehabilitation standards and would not adversely affect the historic architectural resource. As such, the historic architectural resource would retain its ability to convey its historic and architectural significance.

Alternative B would not cause material impairment to a historic resource. Therefore, unlike the proposed project or variant, historic architectural resource impacts would be ***less than significant***, and Mitigation Measures M-CR-1a through M-CR-1c would not be applicable under this alternative.

TRANSPORTATION AND CIRCULATION

TRANSIT DELAY AND TRANSPORTATION NETWORK CHANGES

The transportation and circulation changes under Alternative B would be similar to those under the proposed project or variant, including reducing travel lanes, signalizing intersections, and providing bicycle facilities. The circulation network for Alternative B would include one change compared to the proposed project or variant; a modified alignment to the loop road in the northwest corner of the project site providing access to Blocks NW1, NW2, and NW3. This change would have no effect on analysis and conclusions below, and no transit routes would operate on this roadway.

Under Alternative B, fewer residential dwelling units are proposed as well as less overall square footage of retail sales and services and institutional use. **Table 5-2** compares the estimated project-generated vehicle trips of the proposed project and Alternative B. The vehicle trips represent a comparative estimate based on the percentage change of proposed land use quantities to show a reasonable order-of-magnitude difference and do not account for trip internalization. (See Appendix D.1, Travel Demand Memorandum, for more detail regarding vehicle trip estimates and internalization.)

Travel demand is directly associated with the land use program. Given reductions in square footage, vehicle trips generated by residential, retail sales and service, and institutional land use would be expected to decrease compared to the proposed project or variant. Therefore, Alternative B would result in less project-level transit delay compared to the proposed project or variant. As shown in Table 5-2, the vehicle trips generated by each proposed land use are expected to be reduced by a similar amount, resulting in a 2.3 percent overall trip reduction compared with the proposed project.

Table 5-2 Land Use Characteristics and Estimated Vehicle Trips, Alternative B: Full Preservation Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative B Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	399	(8)
Retail Sales and Services Use	492	480	(12)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	108	(9)
Childcare	32	32	0
Total	***1,249***	***1,220***	***(29)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(2.3)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

As discussed under Impact TR-4, p. 3.B-65, the proposed project would not result in a significant impact with respect to transit delay under existing plus project conditions. The variant would cause additional delay to the 57 Parkmerced inbound route above the 4-minute significance threshold and result in significant and unavoidable impacts with implementation of Mitigation Measures M-TR-4a and M-TR-4b.[330] Because the project-generated vehicle trips under Alternative B would be 2.3 percent less than the proposed project, transit delay associated with Alternative B would not significantly delay the route. Therefore, Alternative B would have a ***less than significant*** impact related to public transit delay and Mitigation Measures M-TR-4a and M-TR-4b would not be applicable under this alternative.

LOADING IMPACT

Similar to the proposed project or variant, it is conservatively assumed that a loading deficit could occur with secondary effects on people walking, biking, or riding public transit. Mitigation Measure M-TR-6 would be required under Alternative B to reduce or eliminate any secondary effects related to freight and commercial and passenger loading. Loading impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

[330] Four minutes of additional transit delay to an analyzed line or corridor represents a significant impact; above 4 minutes, the likelihood of transit riders switching to other travel modes (i.e., single-occupancy vehicles or for-hire vehicles) increases. This threshold is discussed in more detail in Appendix D.2, Transit Delay Analysis Memorandum.

CONSTRUCTION IMPACT

Similar to the proposed project or variant, Alternative B would require coordination and review with public works and SFMTA in accordance with city blue book and public works requirements in order to avoid transportation-related construction impacts. However, the portions of Alternative B that are located on private right-of-way would not be subject to the blue book or other city requirements and, therefore, could result in sufficient disruption to result in significant impacts. Implementation of Mitigation Measure M-TR-1, Construction Coordination, would be required to reduce construction related impacts to reduce any transportation-related construction impacts. Construction impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

OTHER IMPACTS

As a result of the reduced scale of land use program and associated reduction in construction activity and person and vehicle trips generated, Alternative B would result in reduced construction and operational impacts compared to those described for the proposed project or variant and therefore would also have ***less-than-significant*** impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access.

CUMULATIVE IMPACTS

For the same reasons as described for the proposed project or variant, cumulative impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access would be less than significant. Therefore, similar to the proposed project or variant, Alternative B would result in ***less than significant*** cumulative impacts related to potentially hazardous conditions, accessibility of people walking and bicycling, parking, and emergency access. As with the proposed project or variant, Alternative B would contribute considerably to significant cumulative impacts related to loading and to construction; but the identified mitigation measures would reduce the cumulative impacts to ***less than significant with mitigation***.

Because of the reduced land use program and project-generated vehicle trips, Alternative B would have a lower contribution to cumulative transit delay compared to the proposed project or variant.

As presented in Table 5-2, p. 5-18, Alternative B would generate 1,220 peak hour vehicle trips. The modest reduction in vehicle trips during the weekday p.m. peak hour (a 2.3 percent reduction) would not eliminate the cumulatively considerable contribution to a significant cumulative impact. As a result, Alternative B would have a considerable contribution to significant cumulative delays to the Muni 57 Parkmerced in both directions, the 28 19th Avenue and 28R 19th Avenue Rapid combined in the outbound (southbound) direction, and SamTrans Route 122 in the northbound direction. Similar to the proposed project or variant, Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 would also be applicable to Alternative B but would not reduce the cumulative transit delay impacts to less-than-significant levels.

For these reasons, Alternative B would contribute considerably to a substantial delay to both Muni and regional transit lines and cumulative transit delay would remain ***significant and unavoidable with mitigation***.

NOISE AND VIBRATION

CONSTRUCTION NOISE

Under Alternative B, construction activities would be the same as the proposed project or variant, with the same six overlapping phases over an eight-year period. The number of truck trips to remove demolition debris and excavated materials would be similar and, like the proposed project or variant, would not result in a significant noise impact. However, the types of construction equipment and use characteristics would not change because demolition, excavation, and construction activities, even though marginally more limited, would still occur. Therefore, the combined operation of construction equipment under Alternative B would have the same potential to exceed 10 dBA above the ambient noise level at the nearest offsite and future onsite sensitive receptors as the proposed project or variant, which would result in a significant impact. The construction noise reduction strategies identified under Mitigation Measure M-NO-1 would reduce the construction noise impacts at offsite and onsite sensitive receptors; however, similar to the proposed project or variant, this impact would remain ***significant and unavoidable with mitigation***.

CONSTRUCTION VIBRATION

Under Alternative B, construction activities that generate groundborne vibration would be the same as the proposed project or variant. However, Alternative B would retain an on-site historic structure – the former UA Stonestown Twin Theater at 501 Buckingham Way. As stated above, with respect to historic architectural resources, Alternative B would not cause material impairment to a historic resource. The proposed construction equipment with the greatest potential to generate vibration would be a vibratory roller. The proposed building on Block NW4 would be more than 25 feet from the retained theater façade. Use of a vibratory roller associated with roadway work, including sealing up of under-roadway utilities, would be unlikely to occur in proximity to the retained theater façade. As the building façade would be approximately 45 feet from the edge of Buckingham Way, vibration levels from replacement utility work would be 0.09 PPV. Therefore, as with the proposed project or variant, the distances of construction areas from buildings would be the same under Alternative B, and vibration levels would be below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures. Therefore, similar to the proposed project or variant, vibration impacts would be ***less than significant*** for Alternative B.

OPERATIONAL NOISE

Fixed Mechanical Equipment

Alternative B would require the same fixed mechanical noise equipment such as heating, ventilating, and air conditioning (HVAC) units and exhaust fans, and emergency diesel generators as the proposed project or variant. As with the proposed project or variant, Mitigation Measure M-NO-4, Noise Analysis and Attenuation, would be required for Alternative B to ensure that proper enclosures, noise attenuation, or other sound muffling measures would be implemented to meet the noise ordinance standards. Therefore, similar to the proposed project or variant, this impact would be ***less than significant with mitigation***.

Amplified Sound

Open space uses under Alternative B would be the same as the proposed project or variant. These uses could include outdoor events with live performances and amplified sound that could potentially exceed the standards in the noise ordinance. As under the proposed project or variant, Mitigation Measure M-NO-5, Noise Limits for Outdoor Amplified Sound, would be required for Alternative B to ensure that periodic and

temporary noise increases from amplified sound associated with the events would not exceed standards in the noise ordinance. Therefore, the potential noise increases from amplified sound would be ***less than significant with mitigation***, similar to the proposed project or variant.

Traffic and Loading Noise

The mix of uses in Alternative B would be similar to the proposed project or variant and, as described above under Transportation and Circulation, Alternative B would result in slightly fewer daily vehicle trips compared to the proposed project or variant; however, this reduction would not result in a noticeable difference in traffic noise. As such, the traffic noise increase would be similar to the traffic noise increases attributable to the proposed project or variant. In addition, noise from loading activity would still be localized and would be noticeable only in areas adjacent to a building; thus, like the proposed project and variant, the potential operation of loading zones would not cause a substantial increase in ambient noise levels. Therefore, the potential noise increases from traffic and loading noise would be ***less than significant***, similar to the proposed project or variant.

CUMULATIVE IMPACTS

Construction-related cumulative noise and vibration impacts under Alternative B would be similar to the proposed project or variant. Therefore, similar to the proposed project or variant, concurrent construction activities of the alternative and cumulative projects would exceed 10 dBA above the ambient noise level at sensitive receptors. Even with implementation of Mitigation Measure M-NO-1, cumulative construction noise impacts for Alternative B would be ***significant and unavoidable with mitigation***, similar to the proposed project or variant.

Cumulative operational noise conditions would be similar to the proposed project or variant and would include operation of mechanical equipment from both the project site and replaced residential buildings under the San Francisco State University (SFSU) Future State 2035 project. Similar to the proposed project or variant, fixed mechanical equipment noise levels from the project site would be less than significant with implementation of Mitigation Measure M-NO-4. Most impacts related to stationary equipment are localized and usually within 150 feet of equipment.[331] Most of the existing residential structures are located 150 feet or more from the project site and have existing, older HVAC equipment on the rooftops. As under the proposed project or variant, due to the distance of the SFSU sites, the potential for combined noise effects from operation of stationary equipment would be extremely limited, particularly given that the existing SFSU housing units that would be replaced already have HVAC equipment. Alternative B would therefore result in similar cumulative noise impacts from stationery equipment as the proposed project or variant. Therefore, cumulative operational noise impacts under Alternative B would be ***less than significant***.

Alternative B would generate slightly fewer daily vehicle trips than the proposed project or variant; however, this reduction would not result in a noticeable difference in traffic noise. Therefore, similar to the proposed project or variant, the traffic noise increases under cumulative conditions would not result in noise level increases by more than 3 dBA or 5 dBA, depending on whether the existing noise levels exceed the normally acceptable land use compatibility standard for the land uses along the roadway segments. As such, similar to the proposed project or variant, cumulative traffic noise impacts would be ***less than significant*** for Alternative B.

[331] At a distance greater than 150 feet, a rooftop HVAC unit with a common specification of 75 dBA at 50 feet would not exceed the nighttime noise limit of section 2909(d) from the nearest residential building.

AIR QUALITY

CONSTRUCTION IMPACTS: FUGITIVE DUST EMISSIONS

As with the proposed project or variant, construction activities under Alternative B would be required to comply with the City's Construction Dust Control Ordinance and to implement specified dust control measures. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that, like the proposed project or variant, potential dust-related criteria air pollutant impacts for Alternative B would be ***less than significant***.

CONSTRUCTION AND COMBINED CONSTRUCTION AND OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative B would require similar construction activity to the proposed project or variant because Alternative B includes similar dwelling units, similar retail sales and service uses, and similar institutional uses. The total building square footage for Alternative B would be approximately 2 percent less than the proposed project; therefore, construction and operational emissions would be similar to the proposed project.

Consequently, the similar construction activity and combined operational activity for Alternative B could still result in ROG emissions in excess of the thresholds of significance from 2028 through 2032. As discussed under Impact AQ-1 and shown in Table 3.D-8, p. 3.D-39, proposed project or variant construction-related emissions of ROG would exceed the significance threshold in year 2028, which would be a significant impact. In addition, as discussed under Impact AQ-1, overlapping construction and operational emissions for the proposed project or variant would exceed significance thresholds for ROG from 2028 through 2032, which would be a significant impact. Thus, Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a identified for the proposed project or variant would be applicable to Alternative B to reduce construction and operational ROG emissions. Similar to the proposed project or variant, even with the implementation of these mitigation measures, combined construction plus operational emissions would still exceed the ROG significance threshold and criteria air pollutant impacts for Alternative B would be ***significant and unavoidable with mitigation***.

OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative B would marginally reduce operational emissions because the overall development program for Alternative B is 2 percent less than the proposed project. However, this reduction is minor and would not substantially change operational emissions. Therefore, like the proposed project or variant, operational ROG emissions of Alternative B at full buildout are expected to exceed the daily and annual significance thresholds starting in 2032. This impact would be significant. As discussed under Impact AQ-2 and shown in Tables 3.D-10 and 3.D-11, pp. 3.D-53 and 3.D-54, for the proposed project or variant, operational emissions of ROG would exceed the significance threshold at full buildout in year 2032, which would be a significant impact. Thus, all mitigation measures identified for the proposed project or variant (Mitigation Measure M-AQ-1d through M-AQ-1j and M-TR-4a) would apply to Alternative B. Similar to the proposed project or variant, even with the implementation of these mitigation measures, operational emissions would still exceed the ROG significance thresholds and operational criteria air pollutant impacts for Alternative B would be ***significant and unavoidable with mitigation***.

TOXIC AIR CONTAMINANTS, CONSTRUCTION AND OPERATION

Construction and operation of the proposed project or variant would generate TAC emissions, including diesel particulate matter (DPM) and particulate matter of 2.5 microns in diameter or less ($PM_{2.5}$), that could expose both offsite and onsite sensitive receptors to localized health risks. As discussed above, Alternative B would have slightly less square footage than the proposed project or variant. Therefore, it is anticipated that Alternative B would generate a similar level of TAC emissions as the proposed project or variant.

Given the relative magnitude of development under Alternative B, which is 2 percent less than the proposed project, it is likely that, similar to the proposed project, increased cancer risk would be significant in the absence of mitigation. As discussed under Impact AQ-3, the proposed project or variant would result in lifetime excess cancer risks that exceed significance thresholds for the residential and preschool student offsite receptors and for the residential and daycare onsite receptors, which would be a significant impact. Therefore, for Alternative B, Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would be required to reduce lifetime excess cancer risk. Mitigation Measures M-AQ-1a and M-AQ-1c would apply during all construction phases. Mitigation Measures M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i and M-TR-4a would apply to interim and full buildout operations.

Similar to the proposed project or variant, with implementation of these mitigation measures, the lifetime excess cancer risk to both offsite and onsite receptors associated with Alternative B would be reduced below the significance thresholds, and the impact would be ***less than significant with mitigation***.

ODORS

Similar to the proposed project or variant, Alternative B would not create objectionable odors that would affect a substantial number of people. As with the proposed project or variant, construction odors associated with diesel-powered vehicles and equipment for Alternative B would be temporary and not likely to extend beyond the project site. During operations, small-scale localized odor issues could occur (e.g., sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation); as such, Alternative B would be required to implement odor controls as required by applicable air district regulations. Therefore, similar to the proposed project or variant, odor impacts for Alternative B would be ***less than significant***. No mitigation measures would be required.

CONSISTENCY WITH THE CLEAN AIR PLAN

Similar to the proposed project or variant, Alternative B includes many of the control measures from the 2017 Clean Air Plan, as shown in Table 3.D-19, p. 3.D-75, and involves infill development that is close to transit and commercial uses. Alternative B would also not add parking beyond the maximum allowed or preclude the extension of a transit line or a bike path or any other transit improvement. Similar to the proposed project or variant, Alternative B would require Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a to ensure consistency with the Clean Air Plan. With implementation of these mitigation measures and compliance with applicable regulations, Alternative B would include applicable control measures from the 2017 Clean Air Plan, thereby supporting the primary goals of the 2017 Clean Air Plan, and Alternative B would not interfere with, disrupt, or hinder implementation of the 2017 Clean Air Plan. The impact of Alternative B would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: TOXIC AIR CONTAMINANTS

Alternative B would result in similar construction and operational activity and would therefore result in the same cumulative impacts for health risk from TACs as the proposed project or variant, which would be less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. Therefore, cumulative health risk impacts would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: ODORS

Similar to the proposed project or variant, Alternative B would not create objectionable odors that would affect a substantial number of people. Therefore, the minor, generally non-offensive odors associated with Alternative B would not combine with cumulative odor sources to contribute to a cumulative odor impact. Therefore, this impact would be ***less than significant***.

WIND

Under Alternative B, the former UA Stonestown Twin Theater at 501 Buckingham Way would be retained and rehabilitated, and Block NW1 would be reduced from 90 feet under the proposed project or variant to 70 feet and its southeast corner would be pulled back from the theater building. A new 40-foot-tall building also would be constructed on Block NW4 at the northwest corner of the site, and a new 70-foot-tall, 100-unit residential building would be constructed on Block W5 between Blocks W1 and W3. Due to the reduction in size of buildings in the northwest corner of the project site under Alternative B, there likely would be fewer test points that would exceed the wind hazard criterion, and for fewer total hours compared to the proposed project or variant.[332] Blocks NW4 and W5 would be considerably lower in height and massing than surrounding buildings under Alternative B, and no additional wind hazard exceedances would occur around these buildings.[333] However, Alternative B would still result in wind hazard exceedances due to the tall buildings across the project site that would catch prevailing winds and redirect them to ground level, but there would likely be fewer wind hazard exceedances than under the proposed project or variant. Nonetheless, Mitigation Measures M-WI-1a through M-WI-1d identified in Section 3.E, Wind, would apply to this alternative. Project-level and contribution to cumulative wind impacts would be reduced compared to the proposed project or variant but would remain ***significant and unavoidable with mitigation***.

SHADOW

Under Alternative B, the theater building would be retained and rehabilitated, and Block NW1 would be reduced from 90 feet under the proposed project or variant to 70 feet and its southeast corner would be pulled back from the theater building. A new 40-foot-tall building also would be constructed on Block NW4 at the northwest corner of the site, and a new 70-foot-tall, 100-unit residential building would be constructed on Block W5 between Blocks W1 and W3.Compared to the proposed project, this alternative would reduce net new shadow on the Rolph Nicol Jr. Playground from 9.87 percent to 5.38 percent of theoretical annual available sunlight at the playground.[334] In addition, this alternative would also reduce net new shadow on the Junipero Serra Playground from 0.10 percent under the proposed project to 0.08 percent under this

[332] RWDI, *Stonestown Galleria – San Francisco, CA, Pedestrian Wind Study – Full Preservation Alternative – Letter of Opinion*, RWDI Project Number: 2004669, October 14, 2022.
[333] Ibid.
[334] Fastcast, *Alternatives Shadow Results Table,* October 5, 2022.

alternative.[335] Therefore, under Alternative B, project-level and cumulative shadow impacts on parks and open spaces would be reduced compared to the proposed project or variant and would be ***less than significant***.

UTILITIES AND SERVICE SYSTEMS

The development program under Alternative B would be approximately 98 percent of the proposed project and would consist of the same utilities infrastructure modifications to serve the new buildings. Therefore, as is the case for the proposed project or variant, Alternative B would not require or result in the relocation or construction of additional new or expanded water, stormwater, wastewater, electric power, or telecommunications facilities, and project-level and cumulative impacts would be less than significant. In addition, as is the case for the proposed project or variant, the increased long-term water demand of Alternative B is accounted for within San Francisco's overall retail water demand, and existing water supplies would be sufficient to meet the demand. Similar to the proposed project or variant, project-level and cumulative impacts related to water supply under Alternative B would be ***less than significant***. Similarly, estimated wastewater demand for Alternative B would be less than that of the proposed project or variant, and therefore, as is the case for the proposed project or variant, impacts related to wastewater treatment requirements would be ***less than significant***. Finally, because the magnitude of development under Alternative B would be similar or less than the proposed project or variant, like the proposed project or variant, project-level and cumulative impacts related to solid waste under Alternative B would be ***less than significant***.

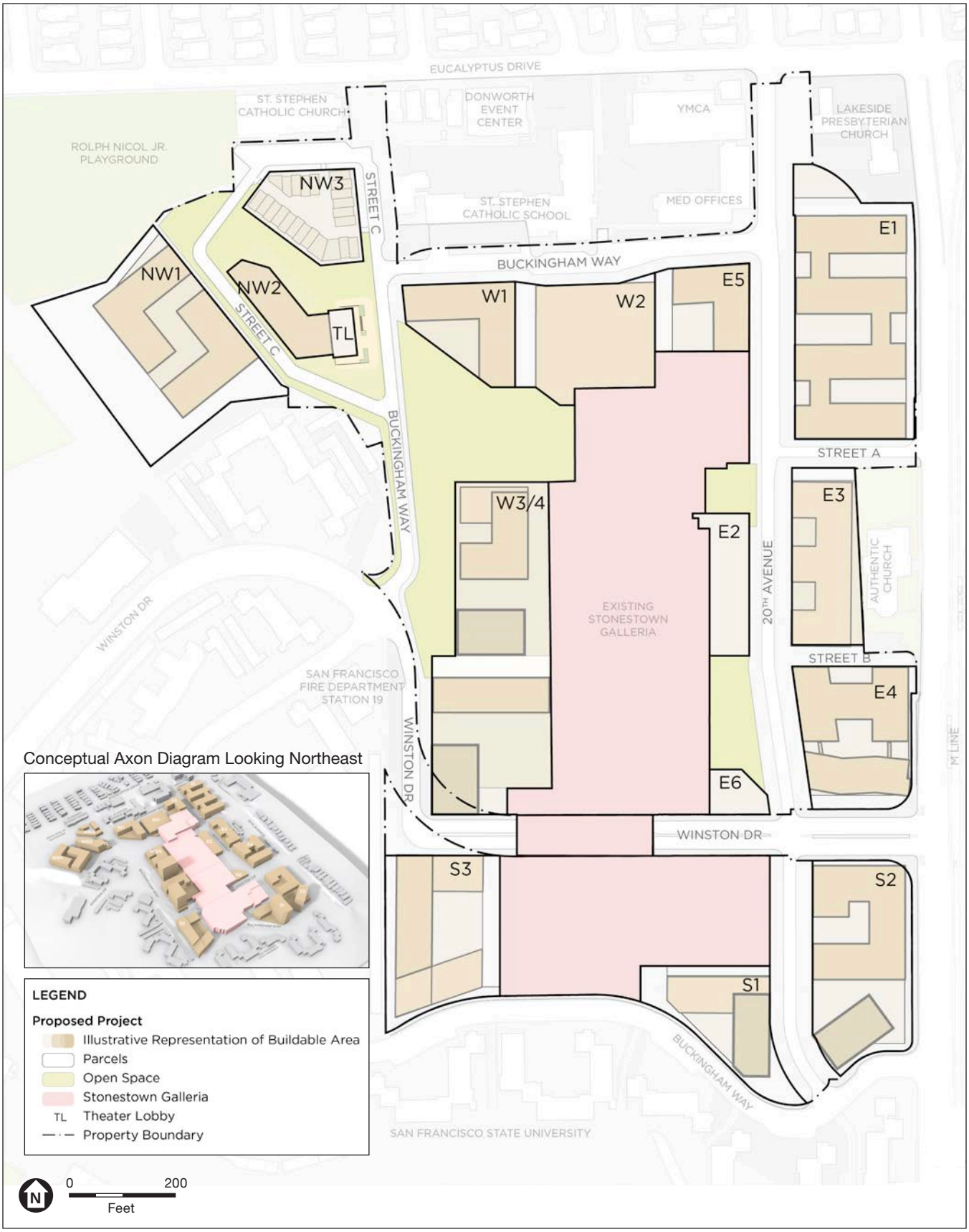
ISSUES ANALYZED IN THE INITIAL STUDY

Alternative B would have 60 fewer residential units and slightly less square footage of retail sales and service uses and institutional uses than the proposed project or variant. The number of onsite residents and employees would be fewer than the proposed project or variant. This alternative would have similar amounts of excavation and ground disturbance compared to the proposed project or variant. Impacts of Alternative B would result in similar no impact, less-than-significant, or less-than-significant-with-mitigation impacts identified for the proposed project or variant related to the following environmental resource areas: land use and land use planning, population and housing, cultural resources (archeological resources and human remains), tribal cultural resources, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources, agriculture and forestry resources, and wildfire. The mitigation measures presented in the initial study would be required under Alternative B.

5.C.3 Alternative C: Partial Preservation and Relocated Parking Alternative

Alternative C is the Partial Preservation and Relocated Parking Alternative, shown in **Figure 5-2**. The purpose of this alternative is to reduce the significant and unavoidable impact on a historic architectural resource that would occur under the proposed project or variant and significant and unavoidable transit delay impacts.

[335] Ibid.



SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-2

ALTERNATIVE C: PARTIAL PRESERVATION ALTERNATIVE

PARTIAL PRESERVATION AND RELOCATED PARKING ALTERNATIVE DESCRIPTION

As shown in Figure 5-2, the site plan for Alternative C would be similar to the proposed project or variant with several exceptions. Alternative C would include the following changes as compared to the proposed project: (1) partial retention of the former UA Stonestown Twin Theater at 501 Buckingham Way and some of its character-defining features; and (2) relocation of 200 retail parking spaces from Block E1 to Block S3 to redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue) and that are used by multiple transit routes under the proposed project or variant. The Alternative C development program is shown in Table 5-1,p. 5-11.

Overall, the total building area would be 3,570,000 square feet, which is a slight reduction in the development program compared to the proposed project (43,000 square feet less than the proposed project). The buildings heights would generally be the same as those identified for the proposed project, ranging from 30 to 190 feet with the tower parcels on Blocks W3, W4, S1, S2, and S3.

Construction of Alternative C would have the same eight-year construction duration conservatively anticipated for the proposed project and is anticipated to occur in six overlapping phases. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements. Construction of Alternative C would be similar to the proposed project or variant both in magnitude and duration. Construction activities associated with retention of some of the character-defining features of the theater building would be incorporated into the construction plan.

HISTORIC ARCHITECTURAL RESOURCE FEATURES

Alternative C would retain 4,000 square feet of the theater building, which would include the front lobby and sunken entry plaza sections, while removing the rear auditorium volume and stucco-clad hyphen, before rising to eight stories and extending on a diagonal to the northwest (Block NW2). The eight-story volume of Block NW2 would contain 130 residential dwelling units.

Under Alternative C, the theater lobby would be converted to a residential lobby with minor alterations to the space. Either one or both of the hallways that currently connect the lobby to the auditoriums would be retained to provide circulation to the residential amenities and residential units in the addition. The primary façade with its groin vaulted colonnade and glazed walls, and the sunken entry plaza at the primary façade would be retained. The character-defining features at the front of the building would be retained to a high degree under Alternative C. However, this alternative would include the removal of the stucco-clad hyphen, the rear volume and massing of the auditoriums, and the smooth unadorned exterior wall surfaces of the rear section of the historic building, which are character-defining features of the resource.

PARTIAL PRESERVATION AND RELOCATED PARKING ALTERNATIVE IMPACTS

HISTORIC ARCHITECTURAL RESOURCES

Under Alternative C, the character-defining features at the front of the theater building would be retained to a high degree, including those features associated with the front lobby and the sunken entry plaza. However, due to the removal of the rear auditorium volume and stucco-clad hyphen along with the addition of the eight-story residential building direct adjacent to the theater lobby, the retained character-defining features of the theater building would primarily function as the entrance to and as part of the 100-unit multifamily residential building on Block NW2, as shown in Figure 5-2.

While Alternative C would preserve some of the building's character-defining features, it would materially alter the building's overall massing and the expression of the rear volume as an auditorium space without openings. Due to these alterations along with the addition of the eight-story residential building on Block NW2, the historic theater building would no longer express its historic character and significance as an example of a New Formalist style theater building in San Francisco. Therefore, while Alternative C would retain some character-defining features of the historic resource and would reduce the historic resource impact, this alternative would result in a significant and unavoidable impact related to the demolition of a historic resource, similar to the proposed project or variant. Implementation of Mitigation Measures M-CR-1a through M-CR-1c would be required to reduce impacts. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. As such, while this alternative reduces impacts on the historic theater building in comparison with the proposed project, the impact on historic architectural resources would remain ***significant and unavoidable with mitigation***.

TRANSPORTATION AND CIRCULATION

TRANSIT DELAY AND TRANSPORTATION NETWORK CHANGES

Alternative C proposed transportation and circulation system would be similar to those under the proposed project or variant, including reducing travel lanes, signalizing intersections, and providing bicycle facilities. Alternative C would be identical to the proposed project with respect to the proposed land uses and street configurations. However, under Alternative C, fewer residential dwelling units are proposed as well as a less overall square footage of retail sales and services. The institutional use square footage would decrease under Alternative C. **Table 5-3** compares the land use programs and estimated project-generated external vehicle trips of the proposed project and Alternative C. The vehicle trips represent a comparative estimate based on the percentage change of proposed land use quantities to show a reasonable order-of-magnitude difference and do not account for internalization. (See Appendix D.1, Travel Demand Memorandum, regarding vehicle trip estimates and internalization.)

Travel demand is directly associated with the land use program. Given reductions in square footage, vehicle trips generated would be expected to decrease compared to the proposed project or variant. Therefore, Alternative C would result in less project-level transit delay compared to the proposed project or variant by virtue of reduced vehicle trips. As shown in Table 5-3, the vehicle trips generated would result in approximately 2.2 percent overall trip reduction.

Alternative C also includes a relocation of 200 retail parking spaces from Block E1 to Block S3. The parking relocation is intended to address the significant and unavoidable transit delay impact to the 57 Parkmerced inbound line that would occur with the variant. The location of vehicle parking governs the onsite origin and destination of vehicle trips and the associated routes drivers take to and from the project site. As presented under Section 3.B.4 and in Appendix D.2, Transit Delay Analysis Memorandum, project vehicle trips traveling along the east side of the project site and accessing Eucalyptus Drive and 19th Avenue increase the traffic demand at already-congested intersections. Relocating parking and thus encouraging travel routes that could avoid these intersections and roadways could help reduce additional demand and redistribute vehicle trip routes away from locations where they would contribute most to the transit delay identified. As a result, Alternative C would cause less additional delay on public transit routes on the east side of the project site compared to the proposed project or variant.

Table 5-3 Land Use Characteristics and Estimated Vehicle Trips, Alternative C: Partial Preservation and Relocated Parking Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative C Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	401	(6)
Retail Sales and Services Use	492	480	(12)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	108	(9)
Childcare	32	32	0
Total	***1,249***	***1,222***	***(275)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(2.2%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

As discussed under Impact TR-4, p. 3.B-65, the proposed project would not result in a significant impact with respect to transit delay under existing plus project conditions. The variant would cause additional delay to the 57 Parkmerced inbound route above the 4-minute significance threshold and result in significant and unavoidable impacts with implementation of Mitigation Measures M-TR-4a and M-TR-4b.[336] The vehicle trips generated under Alternative C would take different routes to and from the project site, resulting in a reduced delay of 2.3 minutes to the 57 Parkmerced inbound line compared to the project due to fewer added trips to the congested intersections on the east side of the project site. This level of delay to the 57 Parkmerced represents a reduction of 1.6 minutes compared to the existing plus project condition. Because the project was shown in Impact TR-4, p. 3.B-65, not to result in a significant impact, and this alternative would reduce the level of impact compared to the project, this alternative would also result in less-than-significant impacts. Relative changes in delay to other transit lines would overall be negligible. Therefore, Alternative C would have a ***less than significant*** project-level impact related to public transit delay and Mitigation Measures M-TR-4a and M-TR-4b would not be applicable under this alternative.

LOADING IMPACT

Similar to the proposed project or variant, it is conservatively assumed that a loading deficit could occur with secondary effects on people walking, biking, or riding transit. Mitigation Measure M-TR-6 would be required under Alternative C to reduce or eliminate any secondary effects due to freight and commercial and

[336] Four minutes of additional transit delay to an analyzed line or corridor represents a significance threshold; above 4 minutes, the likelihood of transit riders switching to other travel modes (i.e., single-occupancy vehicles or for-hire vehicles) increases. This threshold is discussed in more detail in Appendix D.2, Transit Delay Analysis Memorandum.

passenger loading. Loading impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

CONSTRUCTION IMPACT

Similar to the proposed project or variant, Alternative C would require coordination and review with public works and SFMTA in accordance with city blue book and public works requirements in order to avoid transportation-related construction impacts. However, the portions of Alternative C that are located on private right-of-way would not be subject to the blue book or other city requirements and, therefore, could result in sufficient disruption to result in significant impacts. Implementation of Mitigation Measure M-TR-1, Construction Coordination, would be required to reduce construction related impacts to reduce any transportation-related construction impacts. Construction impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

EMERGENCY ACCESS IMPACTS

Similar to the proposed project or variant, Alternative C would signalize the Winston Drive/Buckingham Way intersection. Alternative C also proposes to relocate 200 retail parking spaces from Block E1 to Block S3, which is expected to redistribute vehicle trip routes to southwest of the project site and result in longer queues at the intersection compared to the proposed project or variant. San Francisco Fire Department Station 19 is located at the southwest corner of the Winston Drive/Buckingham Way intersection.

Signalization of the intersection will change the nature and length of vehicle queues. Under Alternative C, the average and 95th percentile weekday p.m. peak hour vehicle queues would not be expected to exceed the length of similar queues in existing plus project or existing plus variant scenarios (about one vehicle—see **Table 5-4**). Consequently, the vehicle queues would not typically extend to the fire station and Alternative C would have a ***less than significant*** impact on emergency vehicle access.

Table 5-4 Queue Lengths at Winston Drive/Buckingham Way Intersection

Analysis Scenario	Northbound Buckingham Way Queue Length (feet)	
	Median	95th Percentile
Existing Weekday P.M.	n/a[a]	0.2
Existing plus Alternative C	0.4	0.6

NOTE:

[a] Intersection is all-way stop controlled in existing condition and signalized in alternative C scenario. Median queue lengths are not computed for all-way stop control intersections per the *Highway Capacity Manual* methodologies.

OTHER IMPACTS

As a result of the reduced scale of the land use program and associated reduction in construction activity, Alternative C would result in reduced construction and operational impacts compared to those described for the proposed project or variant and therefore would also have ***less than significant*** impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access.

CUMULATIVE IMPACTS

For the same reasons as described for the proposed project or variant, cumulative impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access would be less than significant. Therefore, similar to the proposed project or variant, Alternative C would result in ***less than significant*** cumulative impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access. As with the proposed project or variant, Alternative C would contribute considerably to significant cumulative impacts related to loading and to construction; but the identified mitigation measures would reduce the cumulative impacts to ***less than significant with mitigation***.

As discussed above, the relocation of 200 retail parking spaces would redistribute vehicle trips away from the congested intersections on Eucalyptus Drive and 19th Avenue, which would reduce transit delay under Alternative C compared to the proposed project or variant. **Table 5-5** provides a comparison of the transit routes identified to experience significant cumulative transit delay impacts under Impact C-TR-3, p. 3.B-78, for the proposed project or variant and Alternative C.

Table 5-5 Local Project-Level Transit Delay Analysis Results by Line and Direction for Alternative C: Partial Preservation and Alternative Parking Location Alternative

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)[a]	
					Existing plus Project	Alternative C
28 19th Avenue	IB	10	5	4.0	0.5	0.6
	OB	10	5	4.0	2.1	2.1
28R 19th Avenue Rapid	IB	10	5	4.0	0.5	0.5
	OB	10	5	4.0	1.2	1.2
57 Parkmerced	IB	20	10	4.0	3.9	2.3
	OB	20	10	4.0	2.5	0.3
58 Lake Merced	IB	30	15	4.0	1.1	1.3
	OB	30	15	4.0	0.4	0.5
28 + 28R Combined	NB	5	2.5	2.5	0.5	0.6
	SB	5	2.5	2.5	2.1	2.1
SamTrans Route 122	NB	20	10	4	1.3	1.4
	SB	20	10	4	0.8	0.8

ABBREVIATIONS:

IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound

NOTE:

[a] The delay for some transit lines and directions increases by a matter of seconds as a result of the vehicle redistribution from parking changes and a 2.2 percent reduction in overall trips (i.e., some transit lines see a slight increase of vehicle trips and therefore delay)

Among the analyzed routes, the additional delay experienced by the 57 Parkmerced in both inbound and outbound directions would be reduced by 1.6 minutes and 2.2 minutes, respectively, under Alternative C, compared to the project. Therefore, the cumulative impact would also be reduced compared to the proposed project or variant. Based on the proposed project and variant cumulative analysis (see Impact C-TR-3, p. 3.B-78), the identified cumulative delay for the 57 Parkmerced inbound would be 10 additional minutes. Although Alternative C would reduce the cumulative contribution to this delay, it is unlikely the 57 Parkmerced cumulative delay would be reduced to below the 4-minute significance threshold. As shown in Table 5-5, relocating parking spaces would have a negligible effect on 28 19th Avenue and 28 19th Avenue Rapid combined and SamTrans Route 122. Under Alternative C, these routes would remain significantly delayed under cumulative conditions.

As presented in Table 5-5, Alternative C would generate 1,231 peak hour vehicle trips. As a result, although reduced as compared to the proposed project or variant, Alternative C would still contribute considerably to significant cumulative transit delays to Muni 57 Parkmerced inbound, 28 19th Avenue and 28R 19th Avenue Rapid combined in the outbound (southbound) direction, and SamTrans Route 122 in the northbound direction, similar to the proposed project or variant. However, the changes to parking and vehicle routing are estimated to reduce the 57 Parkmerced inbound delay from 2.5 minutes to 0.3 minutes for project-level conditions. With this reduction, the proposed project or variant would have a less-than-considerable contribution to the remaining cumulative transit delay impact. Mitigation Measure M-TR-4a, M-TR-4b, and M-C-TR-3 would also be applicable to Alternative C but would not reduce the cumulative transit delay impacts to less-than-significant levels. The TDM program would include a performance standard to reduce up to 10 percent of vehicle trips, but that additional reduction would not reduce Alternative C's contribution to cumulative transit delay to less-than-considerable levels. Signal coordination and inclusion of transit signal priority along 20th Avenue would require SFMTA approval and thus cannot be guaranteed by the project sponsor. In addition, the project sponsor's fair-share contribution towards the installation of the CCTVs would allow SFMTA staff to make design changes to reduce delay on 19th Avenue, but this in and of itself would not guarantee delay reduction. Cumulative transit delay would therefore remain ***significant and unavoidable with mitigation***, similar to the proposed project and variant.

NOISE AND VIBRATION

CONSTRUCTION NOISE

Under Alternative C, construction activities would be largely similar to the proposed project or variant, with the same six overlapping phases anticipated over an eight-year period. The number of truck trips to remove demolition debris and excavated materials would be similar and, like the proposed project or variant, would not result in a significant noise impact. However, the types of construction equipment and use characteristics would not change because demolition, excavation, and construction activities, even though marginally more limited, would still occur. Therefore, the combined operation of construction equipment under Alternative C would have the same potential to exceed 10 dBA above the ambient noise level at the nearest offsite and future onsite sensitive receptors as the proposed project or variant, which would result in a significant impact. The construction noise reduction strategies identified under Mitigation Measure M-NO-1 would reduce the construction noise impacts at offsite and onsite sensitive receptors; however, similar to the proposed project or variant, this impact would remain ***significant and unavoidable with mitigation***.

CONSTRUCTION VIBRATION

Under Alternative C, site boundaries and construction activities that generate groundborne vibration would be the same as the proposed project or variant. However, Alternative C would retain portions of an on-site historic structure – the former UA Stonestown Twin Theater. As stated above with respect to historic architectural resources, Alternative C would reduce the impact to a historic resource. The proposed construction equipment with the greatest potential to generate vibration would be a vibratory roller. Use of a vibratory roller would usually be associated with roadway work including sealing up of under-roadway utilities which would be unlikely to occur in proximity to the retained theater façade. As the building façade would be approximately 45 feet from the edge of Buckingham Way, vibration levels from replacement utility work would be 0.09 PPV. Therefore, as with the proposed project or variant, the distances of construction areas from buildings would be the same under Alternative C and vibration levels would be below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures. Therefore, similar to the proposed project or variant, vibration impacts would be ***less than significant*** for Alternative C.

OPERATIONAL NOISE

Fixed Mechanical Equipment

Alternative C would require the same fixed mechanical equipment such as heating, ventilating, and air conditioning (HVAC) units and exhaust fans, and emergency diesel generators as discussed for the proposed project or variant, respectively. As with the proposed project or variant, Mitigation Measure M-NO-4 would be required for Alternative C to ensure that proper enclosures, noise attenuation, or other sound muffling measures would be implemented to meet the noise ordinance standards. Therefore, similar to the proposed project or variant, this impact would be ***less than significant with mitigation***.

Amplified Sound

Open space uses under Alternative C would be the same as the proposed project or variant. These uses could include outdoor events with live performances and amplified sound that could potentially exceed the standards in the noise ordinance. As under the proposed project or variant, Mitigation Measure M-NO-5 would be required for Alternative C to ensure that periodic and temporary noise increases from amplified sound associated with the events would not exceed standards in the noise ordinance. Therefore, the potential noise increases from amplified sound would be ***less than significant with mitigation***, similar to the proposed project or variant.

Traffic and Loading Noise

The mix of uses in Alternative C would be similar to the proposed project or variant and, as described above under Transportation and Circulation, Alternative C would result in fewer daily vehicle trips compared to the proposed project or variant, however this reduction would not result in a noticeable difference in traffic noise. As such, the traffic noise increase would be similar to the traffic noise increases attributable to the proposed project or variant. In addition, noise from loading activity would still be localized and would be noticeable only in areas adjacent to a building, and thus, like the proposed project and variant, the potential operation of loading zones would not cause a substantial increase in ambient noise levels. Therefore, the potential noise increases from traffic and loading noise would be ***less than significant***, similar to the proposed project or variant.

CUMULATIVE IMPACTS

Construction-related cumulative noise and vibration impacts under Alternative C would be similar to the proposed project or variant. Therefore, similar to the proposed project or variant, concurrent construction activities of the alternative and cumulative projects would exceed 10 dBA above the ambient noise level at sensitive receptors. Even with implementation of Mitigation Measure M-NO-1, cumulative construction noise impacts for Alternative C would be ***significant and unavoidable with mitigation***, similar to the proposed project or variant.

Cumulative operational noise conditions would be similar to the proposed project or variant and would include operation of mechanical equipment from both the project site and replaced residential buildings under the SFSU Future State 2035 project. Similar to the proposed project or variant, fixed mechanical equipment noise levels from the project site would be less than significant with implementation of Mitigation Measure M-NO-4. Most impacts related to stationary equipment are localized and usually within 150 feet of equipment.[337] Most of the existing residential structures are located 150 feet or more from the project site and have existing, older HVAC equipment on the rooftops. As under the proposed project or variant, due to the distance of the SFSU sites, the potential for combined noise effects from operation of stationary equipment would be extremely limited, particularly given that the existing SFSU housing units that would be replaced already have HVAC equipment. Alternative C would therefore result in similar cumulative noise impacts from stationery equipment as the proposed project or variant. Therefore, cumulative operational noise impacts under Alternative C would be ***less than significant***.

Alternative C would generate fewer daily vehicle trips than the proposed project or variant, however this reduction would not result in a noticeable difference in traffic noise. Therefore, similar to the proposed project or variant, the traffic noise increases under cumulative conditions would not result in noise level increases by more than 3 dBA or 5 dBA, depending on whether the existing noise levels exceed the normally acceptable land use compatibility standard for the land uses along the roadway segments. As such, similar to the proposed project or variant, cumulative traffic noise impacts would be ***less than significant*** for Alternative C.

AIR QUALITY

CONSTRUCTION IMPACTS: FUGITIVE DUST EMISSIONS

As with the proposed project or variant, construction activities under Alternative C would be required to comply with the City's Construction Dust Control Ordinance and to implement specified dust control measures. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that like the proposed project or variant, potential dust related criteria air pollutant impacts for Alternative C would be ***less than significant***.

CONSTRUCTION AND COMBINED CONSTRUCTION AND OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative C would require similar construction activity to the proposed project or variant because Alternative C includes fewer dwelling units, less retail sales and service uses, and fewer institutional uses,

[337] At a distance greater than 150 feet, a rooftop HVAC unit with a common specification of 75 dBA at 50 feet would not exceed the nighttime noise limit of section 2909(d) from the nearest residential building.

but more buildings and more ground disturbance. The total building square footage for Alternative B would be approximately 1 percent less than the proposed project; therefore, construction and operational emissions would be similar to the proposed project.

Consequently, the similar construction activity and combined operational activity for Alternative C could still result in ROG emissions in excess of the thresholds of significance from years 2028 through 2032. As discussed under Impact AQ-1 and shown in Table 3.D-87, p. 3.D-39, proposed project or variant construction-related emissions of ROG would exceed the significance threshold in year 2028, which would be a significant impact. In addition, as discussed under Impact AQ-1, overlapping construction and operational emissions for the proposed project or variant would exceed significance thresholds for ROG from 2028 through 2032, which would be a significant impact. Thus, Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a identified for the proposed project or variant would be applicable to Alternative C to reduce construction and operational ROG emissions. Similar to the proposed project or variant, even with the implementation of these mitigation measures, the combined construction plus operational emissions would still exceed the ROG significance threshold and criteria air pollutant impacts for Alternative C would be ***significant and unavoidable with mitigation***.

OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative C would marginally reduce operational emissions because the overall development program for Alternative B is 1 percent less than the proposed project. However, this reduction is minor and would not substantially change operational emissions. Therefore, like the proposed project or variant, operational ROG emissions of Alternative C at full buildout would be expected to exceed the daily and annual significance thresholds starting in 2032 and would be a significant impact. As discussed under Impact AQ-2 and shown in Tables 3.D-10 and 3.D-11, pp. 3.D-53 and 3.D-54, for the proposed project or variant, operational emissions of ROG would exceed the significance threshold at full buildout in year 2032, which would be a significant impact. Thus, all mitigation measures identified for the proposed project or variant (Mitigation Measure M-AQ-1d through M-AQ-1j and M-TR-4a) would apply to Alternative C. Similar to the proposed project or variant, even with the implementation of these mitigation measures, operational emissions would still exceed the ROG significance thresholds and operational criteria air pollutant impacts for Alternative C would be ***significant and unavoidable with mitigation***.

TOXIC AIR CONTAMINANTS, CONSTRUCTION AND OPERATION

Construction and operation of the proposed project or variant would generate TAC emissions, including DPM and $PM_{2.5}$, that could expose both offsite and onsite sensitive receptors to localized health risks. As discussed above, Alternative C would have slightly less square footage than the proposed project. Therefore, it is anticipated that Alternative C would generate a similar level of TAC emissions as the proposed project or variant.

Given the relative magnitude of development under Alternative C, similar to the proposed project, it is likely that increased cancer risk would be significant in the absence of mitigation. As discussed under Impact AQ-3, the proposed project or variant would result in lifetime excess cancer risks that exceed significance thresholds for the residential and preschool student offsite receptors and for the residential and daycare onsite receptors. This would be a significant impact. Therefore, for Alternative C, Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would be required to reduce lifetime excess cancer risk. Mitigation Measures M-AQ-1a and M-AQ-1c would apply during all construction phases.

Mitigation Measures M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would apply to interim and full buildout operations.

Similar to the proposed project or variant, with implementation of these mitigation measures, the lifetime excess cancer risk to both offsite and onsite receptors associated with Alternative C would be reduced below the significance thresholds, and the impact would be ***less than significant with mitigation***.

ODORS

Similar to the proposed project or variant, Alternative C would not create objectionable odors that would affect a substantial number of people. As with the proposed project or variant, construction odors associated with diesel-powered vehicles and equipment for Alternative C would be temporary and not likely to extend beyond the project site. During operations, small-scale localized odor issues could occur (e.g., sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation), Alternative C would be required to implement odor controls as required by applicable regulations. Therefore, similar to the proposed project or variant, odor impacts for Alternative C would be ***less than significant***. No mitigation measures would be required.

CONSISTENCY WITH THE CLEAN AIR PLAN

Similar to the proposed project or variant, Alternative C includes many of the control measures from the 2017 Clean Air Plan, as shown in Table 3.D-19, p. 3.D-75, and involves infill development that is close to transit and commercial uses. Alternative C would also not add parking beyond the maximum allowed or preclude the extension of a transit line or a bike path or any other transit improvement. Similar to the proposed project or variant, Alternative C would require Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a to ensure consistency with the Clean Air Plan. With implementation of these mitigation measures and compliance with applicable regulations, Alternative C would include applicable control measures from the 2017 Clean Air Plan, thereby supporting the primary goals of the 2017 Clean Air Plan, and Alternative C would not interfere with, disrupt, or hinder implementation of the 2017 Clean Air Plan. The impact of Alternative C would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: TOXIC AIR CONTAMINANTS

Alternative C result in similar construction and operational activity and would therefore result in the same cumulative impacts for health risk from TACs as the proposed project or variant, which would be less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. Therefore, cumulative health risk impacts would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: ODORS

Similar to the proposed project or variant, Alternative C would not create objectionable odors that would affect a substantial number of people. Therefore, the minor, generally non-offensive odors associated with Alternative C would not combine with cumulative odor sources to contribute to a cumulative odor impact. Therefore, this impact would be ***less than significant***.

WIND

Under Alternative C, a portion of the former UA Stonestown Twin Theater at 501 Buckingham Way would be retained in the southeast corner of Block NW2. The remaining portion of Block NW2 would be 90 feet tall,

which is the same height for Block NW2 under the proposed project or variant. All other aspects regarding building massing across the project site would be the same as the proposed project or variant under this alternative. Under the existing plus proposed project and existing plus variant scenarios, four test points exceed the wind hazard and three test points exceed the hazard criterion under the cumulative scenario in the vicinity of Block NW2. Implementation of Alternative C could result in similar wind speeds around the existing theater building because the height of Block NW2 would be the same at this location. Thus, like the proposed project or variant, Block NW2 would catch prevailing winds and redirect them toward ground level. Therefore, Mitigation Measures M-WI-1a through M-WI-1d identified in Section 3.E, Wind, would apply to this alternative. Project-level and contribution to cumulative wind impacts would be similar to the proposed project or variant and this impact would remain ***significant and unavoidable with mitigation***.

SHADOW

Under Alternative C, a portion of the theater building would be retained in the southeast corner of Block NW2. The remaining portion of Block NW2 would be 90 feet tall, which would be the same height under the proposed project or variant. All other aspects regarding building massing across the project site would be the same as the proposed project or variant under this alternative. Compared to the proposed project or variant, this alternative would result in similar net new shadow on the Rolph Nicol Jr. Playground. In addition, this alternative would reduce net new shadow on the Junipero Serra Playground from 0.10 percent under the proposed project to 0.08 percent under this alternative.[338] Therefore, under Alternative C, project-level and cumulative shadow impacts on parks and open spaces would be similar to the proposed project or variant and would be ***less than significant***.

UTILITIES AND SERVICE SYSTEMS

The development program under Alternative C would be approximately 99 percent of the proposed project and would consist of the same utilities infrastructure modifications to serve the new buildings. Therefore, like the proposed project or variant, Alternative C would not require or result in the relocation or construction of additional new or expanded water, stormwater, wastewater, electric power, or telecommunications facilities, and project-level and cumulative impacts would be ***less than significant***. In addition, like the proposed project or variant, the increased long-term water demand of Alternative C is accounted for within San Francisco's overall retail water demand, and existing water supplies would be sufficient to meet the demand. Similar to the proposed project or variant, project-level and cumulative impacts related to water supply under Alternative C would be ***less than significant***. Similarly, estimated wastewater demand for Alternative C would be less than that of the proposed project or variant, and therefore, like the proposed project or variant, impacts related to wastewater treatment requirements would be ***less than significant***. Finally, because the magnitude of development under Alternative C would be similar or less than the proposed project or variant, like the proposed project or variant, project-level and cumulative impacts related to solid waste under Alternative C would be ***less than significant***.

ISSUES ANALYZED IN THE INITIAL STUDY

Alternative C would have 40 fewer residential units and 1,000 more square feet of institutional uses than the proposed project. The number of onsite residents and employees would be similar, but slightly fewer than the proposed project or variant. This alternative would have similar amounts of excavation and ground disturbance compared to the proposed project or variant. Impacts of Alternative C would result in similar no

[338] Fastcast, *Alternatives Shadow Results Table,* October 5, 2022.

impact, less-than-significant, or less-than-significant-with-mitigation impacts identified for the proposed project or variant related to the following environmental resource areas: land use and land use planning, population and housing, cultural resources (archeological resources and human remains), tribal cultural resources, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources, agriculture and forestry resources, and wildfire. The mitigation measures presented in the initial study would be required under Alternative C.

5.C.4 Alternative D: Code Compliant Alternative

Alternative D presents a Code Compliant Alternative, shown in **Figure 5-3**. This alternative assumes that the project sponsor would develop the project site in compliance with the existing planning code and land use designations. The purpose of this alternative is to avoid or substantially reduce significant and unavoidable impacts related to transportation and circulation, noise and vibration, air quality, and wind that would occur under the proposed project or variant and to better inform decision makers of the potential impacts of certain aspects of the proposed project and variant.

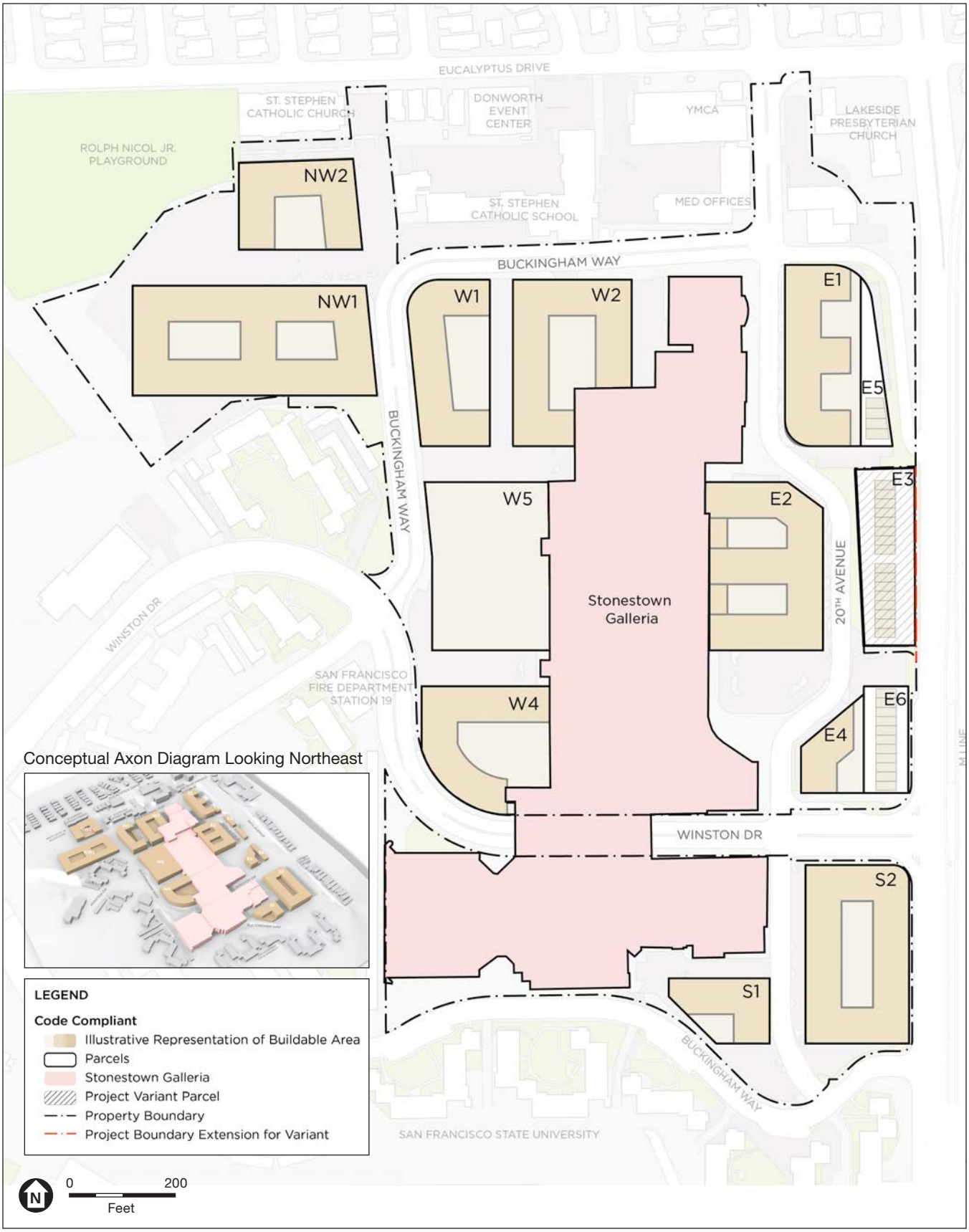
CODE COMPLIANT ALTERNATIVE DESCRIPTION

Alternative D assumes that the project sponsor would develop the project site in compliance with the existing planning code and land use designations without the use of density bonuses otherwise permitted under the law. Currently, the project site is zoned C-2 (Community Business), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) Use Districts and located in the 40-X and 65-D Height and Bulk Districts.

Similar to the proposed project or variant, Alternative D would redevelop the 27 acres of surface parking into a master-planned, mixed-use community, and would retain the existing Stonestown Galleria shopping mall However, the existing 700-space parking garage in the southwest corner of the site, the CitySports building, and the two-story commercial building in the northeast corner of the project site would remain. The former UA Stonestown Twin Theater at 501 Buckingham Way would be demolished to enable code-compliant land uses in the northwest corner of the site. The parcel containing the Authentic Church would be developed with townhomes under this alternative. The Alternative D development program is shown in Table 5-1,p. 5-11.

Overall, Alternative D would have an approximately 1,663,465-square-foot reduction in development compared to the proposed project (about 46 percent less than the proposed project's total building area). Under Alternative D, building heights would be substantially reduced in height from a maximum height of 190 feet under the proposed project or variant to a maximum height of 65 feet, consistent with the existing height limit.

Under Alternative D, the interior street network would remain largely the same as existing conditions. The existing streets would be improved according to the principles of the Better Streets Plan. Construction of Alternative D would be similar to the proposed project or variant, although slightly reduced in both magnitude and duration. Construction activity in the site preparation and grading, excavation, and paving phases would largely remain the same. Building construction would be slightly reduced due to the reduction in building area compared to the proposed project or variant. In general, the same types of construction



SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-3

ALTERNATIVE D: CODE COMPLIANT ALTERNATIVE

activities and equipment would be required. Construction is still anticipated to occur in six overlapping phases, but due to the reduced size of the buildings, construction was conservatively assumed to take seven years compared to the eight-year duration for the proposed project. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements.

CODE COMPLIANT ALTERNATIVE IMPACTS

HISTORIC ARCHITECTURAL RESOURCES

Under Alternative D, like the proposed project or variant, the former UA Stonestown Twin Theater at 501 Buckingham Way would be demolished. Demolition of the building would materially impair the historic architectural resource and it would no longer retain the ability to convey its significance as a New Formalist-style theater, resulting in a significant and unavoidable impact on a historic resource. Implementation of Mitigation Measures M-CR-1a through M-CR-1c would be required to reduce impacts. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. As such, the impact on historic architectural resources would remain ***significant and unavoidable with mitigation***.

TRANSPORTATION AND CIRCULATION

TRANSIT DELAY AND TRANSPORTATION NETWORK CHANGES

The proposed transportation and circulation changes under Alternative D would be similar to those under the proposed project or variant, including reducing travel lanes, signalizing intersections, and providing bicycle facilities, with the following exceptions:

- 20th Avenue would not be straightened
- The existing one-way Buckingham Way connection to 19th Avenue would be retained
- Street A and Street B between 19th Avenue and 20th Avenue would not be constructed

Under Alternative D, there would be fewer residential dwelling units and less square footage of all remaining proposed land use types compared to the proposed project or variant. **Table 5-6** compares the land use programs of the proposed project and Alternative D. The vehicle trips represent a comparative estimate based on the percentage change of land use to show a reasonable order-of-magnitude difference and does not account for internalization. (See Appendix D.1, Travel Demand Memorandum, regarding details on vehicle trip estimates and internalization.)

Travel demand is directly associated with the land use program. Therefore, given the land use reduction, vehicle trips would be expected to decrease compared to the proposed project or variant. Alternative D would result in less project-level transit delay compared to the proposed project or variant. As shown in Table 5-6, the vehicle trips generated by each land use are expected to be reduced by a similar amount, which would result in a 60.8 percent overall trip reduction.

Table 5-6 Land Use Characteristics and Estimated Vehicle Trips, Alternative D: Code Compliant Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative D Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	279	(128)
Retail Sales and Services Use	492	163	(329)
Non-Retail Sales and Service Use	172	0	(172)
Hotel	29	0	(29)
Institutional Use	117	16	(101)
Childcare	32	32	0
Total	***1,249***	***490***	***(759)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(60.8%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

As discussed under Impact TR-4, p. 3.B-65, the proposed project would not result in a significant impact with respect to transit delay under existing plus project conditions. However, the variant would cause additional delay to the 57 Parkmerced inbound route above the 4-minute significance threshold and result in significant and unavoidable impacts with implementation of Mitigation Measures M-TR-4a and M-TR-4b.[339] With a 60.8 percent reduction compared to project-generated traffic volume, Alternative D would result in a ***less than significant*** project-level impact related to public transit delay and Mitigation Measures M-TR-4a and M-TR-4b would not be applicable under this alternative.

LOADING IMPACT

Similar to the proposed project or variant, it is conservatively assumed that a loading deficit could occur resulting in secondary effects on people walking, biking, or riding transit. Mitigation Measure M-TR-6 would be required under Alternative D to reduce or eliminate any secondary effects due to freight and commercial and passenger loading. Loading impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

OTHER IMPACTS

As a result of the reduced scale of the land use program and associated reduction in construction activity and vehicle trips generated, Alternative D would result in reduced construction and operational impacts

[339] Four minutes of additional transit delay to an analyzed line or corridor represents a significance threshold; above 4 minutes, the likelihood of transit riders switching to other travel modes (i.e., single-occupancy vehicles or for-hire vehicles) increases. This threshold is discussed in more detail in Appendix D.2, Transit Delay Analysis Memorandum.

compared to those for the proposed project or variant, and therefore would also have ***less than significant*** impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access.

CONSTRUCTION IMPACT

Similar to the proposed project or variant, Alternative D would require coordination and review with public works and SFMTA in accordance with city blue book and public works requirements in order to avoid transportation-related construction impacts. However, the portions of Alternative D that are located on private right-of-way would not be subject to the blue book or other city requirements and, therefore, could result in sufficient disruption to result in significant impacts. Implementation of Mitigation Measure M-TR-1 would be required to reduce construction related impacts to reduce any transportation-related construction impacts. Construction impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

CUMULATIVE IMPACTS

Similar to the proposed project or variant, impacts related to, vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access, would be less than significant. Therefore, similar to the proposed project or variant, Alternative D would result in ***less than significant*** cumulative impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access. As with the proposed project or variant, Alternative D would contribute considerably to significant cumulative impacts related to loading and to construction; but the identified mitigation measures would reduce the cumulative impacts to ***less than significant with mitigation***.

With the 60.8 percent trip reduction, Alternative D would result in less cumulative transit delay compared to the proposed project or variant. Cumulative transit delay is associated with traffic volume growth from all anticipated future development, including neighboring developments like Parkmerced. However, the cumulative impacts to transit delay identified for the proposed project or variant for the Muni 57 Parkmerced in both directions, the 28 19th Avenue and 28R 19th Avenue Rapid combined in the outbound (southbound) direction, and SamTrans Route 122 in the northbound direction, would not be eliminated with Alternative D.

As discussed under Impact C-TR-3, the proposed project's contribution to the significant delays of Muni 57, 28, 28R, and SamTrans Route 122 would range from 11 to 28 percent. A reduction of project-associated vehicle trips by up to 60.8 percent would still result in contributions of vehicle trips, adding vehicle trips to intersections and traffic movements that would experience substantial cumulative delay, and contributions to cumulative impacts. Alternative D's reduction of 60.8 percent of project-related vehicles as compared to the proposed project would make the alternative's contribution to the cumulative impact less than considerable. It should be noted that travel delay increases exponentially with increases in traffic volumes, and therefore, the reduction of 60.8 percent of project trips would likely translate into an even higher percentage reduction in transit delay to the affected transit lines.

The TDM program would still include a performance standard to reduce up to 10 percent of vehicle trips as a way to reduce Alternative D's operational air quality impacts, discussed below. However, unlike the proposed project or variant, Alternative D would not contribute considerably to a cumulative transit delay impact and

Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 would not be applicable. Therefore, Alternative D would result in ***less than significant*** cumulative impacts related to transit delay.

NOISE AND VIBRATION

CONSTRUCTION NOISE

Alternative D construction would be similar to the proposed project or variant, although slightly reduced in both magnitude and duration. Construction activity in the site preparation and grading, excavation, and paving phases would largely remain the same. The number of truck trips to remove demolition debris and excavated materials would be similar and, like the proposed project and variant would not result in a significant noise impact from construction trucks. Building construction would be slightly reduced due to the reduction in building square footage. In general, the same types of construction activities and equipment would be required, and the building foundations would require auger-cast or micro pile installation similar to the proposed project or variant. Construction would still occur in six overlapping phases, but with the reduced development program, construction would take seven years compared to the eight-year duration for the proposed project or variant. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements.

The types of construction equipment and use characteristics would not change because demolition, excavation, and construction activities, even though slightly more limited, would still occur and the building footprints would generally be the same, as only the building heights would be reduced. Therefore, the combined operation of construction equipment under Alternative D would have the same potential to exceed 10 dBA above the ambient noise level at the nearest offsite and future onsite sensitive receptors, which would be a significant impact. The construction noise reduction strategies identified under Mitigation Measure M-NO-1 would reduce the construction noise impacts at offsite and onsite sensitive receptors; however, similar to the proposed project or variant, this impact would remain ***significant and unavoidable with mitigation***.

CONSTRUCTION VIBRATION

Under Alternative D, construction activities that generate groundborne vibration would be the same as the proposed project or variant because they would occur in the same locations and would have similar foundations. The proposed construction equipment with the greatest potential to generate vibration would be a vibratory roller. As with the proposed project or variant, the distances of construction areas from buildings would be the same and vibration levels would be well below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures. Therefore, similar to the proposed project or variant, vibration impacts would be ***less than significant*** for Alternative D.

OPERATIONAL NOISE

Fixed Mechanical Equipment

Alternative D would require the same stationary noise equipment such as HVAC units and exhaust fans for the buildings. However, unlike the proposed project or variant, Alternative D would not require emergency generators since the maximum building heights would be 65 feet. Emergency generators are required by the San Francisco Building Code for buildings with occupied floor levels greater than 75 feet in height. Although Alternative D would have fewer generators compared to the proposed project or variant, HVAC equipment

would be required and if located on rooftops could be closer to receptors. Similar to the proposed project or variant, the HVAC equipment noise levels could exceed the noise ordinance standards; therefore, Mitigation Measure M-NO-4 would be required for Alternative D to ensure that proper enclosures, noise attenuation, or other sound muffling measures would be implemented to meet the noise ordinance standards. As such, like the proposed project or variant, this impact would be ***less than significant with mitigation***.

Amplified Sound

Under Alternative D, there would be no new open space; however, the existing 1.6 acres of open space at the project site would remain. Outdoor events with live performances and amplified sound that could potentially exceed the standards in the noise ordinance could still occur in this space, similar to the proposed project or variant. As under the proposed project or variant, Mitigation Measure M-NO-5 would be required for Alternative D to ensure that periodic and temporary noise increases from amplified sound associated with the events would not exceed standards in the noise ordinance. Therefore, the potential noise increases from amplified sound would be similar to the proposed project or variant and would be ***less than significant with mitigation***.

Traffic and Loading Noise

The mix of uses in Alternative D would be the reduced compared to the proposed project or variant and, as described above under Transportation and Circulation, Alternative D would result in fewer daily vehicle trips compared to the proposed project or variant. As such, the traffic noise increase would be less than the traffic noise increases attributable to the proposed project or variant. In addition, noise from loading activity would still be localized and would be noticeable only in areas adjacent to a building; thus, like the proposed project and variant, the potential operation of loading zones would not cause a substantial increase in ambient noise levels. Therefore, the traffic noise increase would be the reduced from the proposed project or variant but would be ***less than significant***, similar to the proposed project or variant.

CUMULATIVE IMPACTS

Construction-related cumulative noise and vibration impacts under Alternative D would be similar to the proposed project or variant. Therefore, similar to the proposed project or variant, concurrent construction activities of the alternative and cumulative projects would exceed 10 dBA above the ambient noise level at sensitive receptors. Even with implementation of Mitigation Measure M-NO-1, cumulative construction noise impacts for Alternative D would be ***significant and unavoidable with mitigation***, similar to the proposed project or variant.

Cumulative operational noise conditions would be similar to the proposed project or variant and would include operation of mechanical equipment from both the project site and replaced residential buildings under the SFSU Future State 2035 project. Stationary equipment noise levels from the project site would be less than significant with implementation of Mitigation Measure M-NO-4. As under the proposed project or variant, due to the distance of the SFSU sites, the potential for combined noise effects from operation of fixed mechanical equipment would be extremely limited, particularly given that the existing SFSU housing units that would be replaced already have HVAC equipment. Alternative D would therefore result in similar cumulative noise impacts from stationery equipment as the proposed project or variant. Therefore, cumulative operational noise impacts under Alternative D would be ***less than significant***.

Alternative D would generate fewer daily vehicle trips than the proposed project or variant. Under the proposed project or variant, the traffic noise increases under cumulative conditions would not result in noise level increases by more than 3 dBA or 5 dBA, depending on whether the existing noise levels exceed the normally acceptable land use compatibility standard for the land uses along the roadway segments. Therefore, Alternative B would further reduce the less-than-significant cumulative traffic noise impacts along the roadway segments. As such, cumulative traffic noise impacts under Alternative D would be ***less than significant.***

AIR QUALITY

CONSTRUCTION IMPACTS: FUGITIVE DUST EMISSIONS

As with the proposed project, construction activities under Alternative D would be required to comply with the City's Construction Dust Control Ordinance and to implement specified dust control measures. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that like the proposed project or variant, potential dust related criteria air pollutant impacts for Alternative D would be ***less than significant***.

CONSTRUCTION AND COMBINED CONSTRUCTION AND OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative D would require roughly the same total construction activity as the proposed project or variant. Alternative D includes fewer dwelling units, less retail sales and service uses, no non-retail sales and service uses, no hotel, and fewer institutional uses, which means aboveground construction activities associated with the structures would be less than the proposed project or variant. However, Alternative D would involve similar site preparation and grading, excavation, and paving phases and therefore would require similar ground disturbing construction activities as the proposed project or variant. The total building square footage for Alternative D would be approximately 46 percent less than the proposed project. Construction emissions associated with Alternative D are conservatively assumed to be the same as those from the proposed project or variant. However, operational emissions for Alternative D would be substantially less than the proposed project or variant given the much lower building square footage for this alternative. Nevertheless, construction activity and combined operational activity for Alternative D could still result in ROG emissions in excess of the thresholds of significance from 2028 through 2032. As discussed under Impact AQ-1 and shown in Table 3.D-8, p. 3.D-39, construction-related emissions of ROG would exceed the significance threshold in year 2028, which would be a significant impact. In addition, as discussed under Impact AQ-1, overlapping construction and operational emissions for the proposed project or variant would exceed significance thresholds for ROG from 2028 through 2032, which would be a significant impact. Thus, Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a identified for the proposed project or variant would be applicable to Alternative D to reduce construction and operational ROG emissions.

Table 5-7 presents mitigated construction and operational emissions by year from 2024 through 2032 for Alternative D.

Table 5-7 Mitigated Construction and Net New Interim Operational Emissions by Year for Alternative D

Year	Combined Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds per day) [a,b,c]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
ALTERNATIVE D: CODE COMPLIANT ALTERNATIVE				
2024 (construction only)	0.4	1.5	0.9	0.2
2025 (construction only)	1.4	2.6	2.5	0.5
2026 (construction only)	5	5.5	5.7	1.0
2027 (construction only)	9	7.7	8.7	1.6
2028 (construction and operations)	16	10	13	2.3
2029 (construction and operations)	26	13	18	3.1
2030 (construction and operations)	31	15	20	3.5
2031 (construction and operations)	37	16	21	3.8
2032 (construction and operations)	42	14	23	4.1
Significance Thresholds	54	54	82	54
Exceeds Threshold?	No	No	No	No

SOURCE: Ramboll, *Air Quality Analysis of Alternatives for Stonestown Redevelopment Project*, November 2022

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; PM = particulate matter; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NOx = nitrogen oxides

NOTES:

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[c] Net operational emissions were calculated by subtracting the emissions from the existing conditions from the alternative's emissions.

As shown in the table above, unlike the proposed project or variant, which would result in a significant and unavoidable impact with mitigation, combined construction plus operational ROG emissions for Alternative D would be reduced below the ROG threshold of significance (54 pounds per day) in all years with implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a given that operational emissions for Alternative D would be substantially less than the proposed project or variant due to the much lower building square footage. Mitigation Measure M-AQ-1j would not be needed. Therefore, construction and combined construction and operational criteria air pollutant impacts for Alternative D would be ***less than significant with mitigation***.

OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative D would reduce operational emissions because the overall development (i.e., total building square footage) of Alternative D is 46 percent less than the proposed project. However, like the proposed project or variant, operational ROG emissions of Alternative D at full buildout are expected to exceed the daily and annual significance thresholds starting in 2032. As discussed under Impact AQ-2 and shown in Tables 3.D-10 and 3.D-11, pp. 3.D-53 and 3.D-54, for the proposed project or variant, operational emissions of ROG would exceed the significance threshold at full buildout in year 2032, which would be a significant impact. Thus, with the exception of Mitigation Measure M-AQ-1j, all mitigation measures identified for the proposed project or variant to reduce operational ROG emissions (Mitigation Measures M-AQ-1d through M-AQ-1i and M-TR-4a) would apply to Alternative D.

Table 5-8 presents net new operational emissions with mitigation incorporated for Alternative D during full buildout in 2032 after construction would be completed.

As shown in Table 5-8, unlike the proposed project or variant, which would result in a significant and unavoidable impact with mitigation, operational ROG emissions for Alternative D would be reduced below the significance thresholds with implementation of Mitigation Measures M-AQ-1d through M-AQ-1i and M-TR-4a given that operational emissions for Alternative D would be substantially less than the proposed project or variant due to the much lower building square footage. Therefore, operational criteria pollutant impacts from Alternative D would be ***less than significant with mitigation***.

TOXIC AIR CONTAMINANTS, CONSTRUCTION AND OPERATION

Construction and operation of the proposed project or variant would generate TAC emissions, including DPM and $PM_{2.5}$, that could expose both offsite and onsite sensitive receptors to localized health risks. As discussed above, Alternative D would have 46 percent less square footage of development than the proposed project. Therefore, it is anticipated that Alternative D would generate less TAC emissions than the proposed project or variant.

Although Alternative D involves substantially less development than the proposed project, similar to the proposed project, it is likely that increased cancer risk would still be significant in the absence of mitigation. As discussed under Impact AQ-3, the proposed project or variant would result in lifetime excess cancer risks that exceed significance thresholds for the residential and preschool student offsite receptors and for the residential and daycare onsite receptors. This would be a significant impact. Therefore, for Alternative D, Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would be required to reduce lifetime excess cancer risk. Mitigation Measures M-AQ-1a and M-AQ-1c would apply during all construction phases. Mitigation Measures M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would apply to interim and full buildout operations.

Similar to the proposed project or variant, with implementation of these mitigation measures, the lifetime excess cancer risk to both offsite and onsite receptors associated with Alternative D would be reduced below the significance thresholds, and the impact would be ***less than significant with mitigation***.

Table 5-8 Net New Mitigated Operational Emissions for Alternative D at Buildout

Emissions Source or Year	Criteria Air Pollutant Emissions[a] (tons/year) ROG	NO_X	PM_{10}	$PM_{2.5}$	(pounds/day)[b] ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS[c]								
Architectural Coating	<0.1	—	—	—	0.4	—	—	—
Consumer Products	0.3	—	—	—	1.8	—	—	—
Landscaping	<0.1	—	—	—	0.2	—	—	—
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Subtotal	*0.45*	*<0.1*	*<0.1*	*<0.1*	*2.4*	*0.1*	*<0.1*	*<0.1*
MITIGATED FULL BUILDOUT ALTERNATIVE D EMISSIONS (2032)								
Architectural Coating	0.15	—	—	—	0.82	—	—	—
Consumer Products	5.7	—	—	—	31	—	—	—
Landscaping	—	—	—	—	—	—	—	—
Mobile	2.0	2.2	4.1	0.72	11.1	12.3	23	4.0
Emergency Generators	<0.1	<0.1	<0.1	<0.1	0.21	0.51	<0.1	<0.1
Subtotal	7.9	2.3	4.1	0.73	43	12.8	23	4.0
MITIGATED NET NEW ALTERNATIVE D EMISSIONS[d]								
Total, All Sources	***7.4***	***2.3***	***4.1***	***0.72***	***41***	***13***	***23***	***4.0***
Significance Threshold	10	10	15	10	54	54	82	54
Exceeds Threshold?	No	No	No	No	No	No	No	No

SOURCES: Ramboll, *Air Quality Analysis of Alternatives for Stonestown Redevelopment Project*, November 2022

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NO_X = nitrogen oxides

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[c] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use type and energy use rates provided by the project sponsor.
[d] Net new emissions were calculated as the difference between full buildout emissions and existing condition emissions.

ODORS

Similar to the proposed project or variant, Alternative D would not create objectionable odors that would affect a substantial number of people. As with the proposed project or variant, construction odors associated with diesel-powered vehicles and equipment for Alternative D would be temporary and not likely to extend beyond the project site. During operations, small-scale localized odor issues could occur (e.g., sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation). Alternative D would be required to implement odor controls as required by applicable regulations. Therefore, similar to

the proposed project or variant, odor impacts for Alternative D would be ***less than significant***. No mitigation measures would be required.

CONSISTENCY WITH THE CLEAN AIR PLAN

Similar to the proposed project or variant, Alternative D includes many of the control measures from the 2017 Clean Air Plan, as shown in Table 3.D-19, p. 3.D-75, and involves infill development that is close to transit and commercial uses. Alternative D would also not add parking beyond the maximum allowed or preclude the extension of a transit line or a bike path or any other transit improvement. Similar to the proposed project or variant, Alternative D would require Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a to ensure consistency with the Clean Air Plan. With implementation of these mitigation measures and compliance with applicable regulations, Alternative D would include applicable control measures from the 2017 Clean Air Plan, thereby supporting the primary goals of the 2017 Clean Air Plan, and Alternative D would not interfere with, disrupt, or hinder implementation of the 2017 Clean Air Plan. The impact of Alternative D would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: TOXIC AIR CONTAMINANTS

Alternative D would reduce construction and operational TAC emissions due to the reduction in development but would still result in significant cumulative health risk impacts from TACs, like the proposed project or variant. Like the proposed project and variant, cumulative health risks from this alternative would be reduced to less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. Therefore, cumulative health risk impacts from Alternative D would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: ODORS

Similar to the proposed project or variant, Alternative D would not create objectionable odors that would affect a substantial number of people. Therefore, the minor, generally non-offensive odors associated with Alternative D would not combine with cumulative odor sources to contribute to a cumulative odor impact. Therefore, this impact would be ***less than significant***.

WIND

Under Alternative D, building heights would be substantially reduced in height from a maximum height of 190 feet under the proposed project or variant to a maximum height of 65 feet. Under this alternative, buildings would be similar in height to surrounding buildings in the area, and thus would be substantially less than 85 feet tall, which is generally the height at which buildings may have a substantial effect on ground-level wind speeds. Under Alternative D, wind speeds would not be expected to exceed the hazard criterion at any test point locations because buildings that are similar in height to surrounding buildings typically cause little or no additional ground-level wind acceleration and turbulence.[340] Mitigation Measures M-WI-1a through M-WI-1d identified in Section 3.E, Wind, would not apply to this alternative. Therefore, under Alternative D, wind impacts would be substantially less than under the proposed project or variant. Unlike the proposed project or variant, project-level and cumulative wind impacts would be ***less than significant***.

[340] RWDI, *Stonestown Galleria – San Francisco, CA, Pedestrian Wind Study – Letter of Opinion*, RWDI Project Number: 2004669, October 7, 2022.

SHADOW

Under Alternative D, buildings would be substantially reduced in height from a maximum height of 190 feet under the proposed project or variant to a maximum height of 65 feet under this alternative. Blocks NW1, NW2, and W1, which would cast shadow on Rolph Nicol Jr. Playground under the proposed project or variant, would be reduced in height from 90 feet to 40 feet for Blocks NW1 and NW2, and 65 feet for Block W1. Compared to the proposed project or variant, this alternative would reduce net new shadow on the Rolph Nicol Jr. Playground from 9.87 percent to 2.31 percent of theoretical annual available sunlight at the playground.[341] In addition, this alternative would eliminate net new shadow on the Junipero Serra Playground.[342] Therefore, under Alternative D, project-level and cumulative shadow impacts on parks and open spaces would be reduced compared to the proposed project or variant and would be ***less than significant***.

UTILITIES AND SERVICE SYSTEMS

The development program under Alternative D would be approximately 46 percent less than the proposed project and would consist of the same utilities infrastructure modifications to serve the new buildings. Therefore, as is the case for the proposed project or variant, Alternative D would not require or result in the relocation or construction of additional new or expanded water, stormwater, wastewater, electric power, or telecommunications facilities, and project-level and cumulative impacts would be ***less than significant***. In addition, as is the case for the proposed project or variant, the increased long-term water demand of Alternative D is accounted for within San Francisco's overall retail water demand, and existing water supplies would be sufficient to meet the demand. Similar to the proposed project or variant, project-level and cumulative impacts related to water supply under Alternative D would be ***less than significant***. Similarly, estimated wastewater demand for Alternative D would be less than that of the proposed project or variant, and therefore, as is the case for the proposed project or variant, impacts related to wastewater treatment requirements would be ***less than significant***. Finally, because the magnitude of development under Alternative D would be similar or less than the proposed project or variant, like the proposed project or variant, project-level and cumulative impacts related to solid waste under Alternative D would be ***less than significant***.

ISSUES ANALYZED IN THE INITIAL STUDY

Alternative D would have 919 fewer residential units and overall, approximately 1,663,465 less square feet of development than the proposed project. The number of onsite residents and employees would therefore be fewer than the proposed project or variant. This alternative would have similar amounts of excavation and ground disturbance compared to the proposed project or variant for site preparation and installation of utilities to serve the new buildings. Construction Impacts of Alternative D would be reduced or similar to the less-than-significant or less-than-significant-with-mitigation impacts identified for the proposed project or variant related to the following environmental resource areas: land use and land use planning, population and housing, cultural resources (archeological resources and human remains), tribal cultural resources, greenhouse gas emissions, shadow, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources,

[341] Fastcast, *Alternatives Shadow Results Table,* October 5, 2022.
[342] Ibid.

agriculture and forestry resources, and wildfire. The mitigation measures presented in the initial study would be required under Alternative D.

5.C.5 Alternative E: Reduced Density Alternative

Alternative E would implement a Reduced Density Alternative, shown in **Figure 5-4**. The purpose of this alternative is to avoid or substantially reduce significant and unavoidable impacts related to transportation and circulation, noise and vibration, air quality, and wind that would occur under the proposed project or variant.

REDUCED DENSITY ALTERNATIVE DESCRIPTION

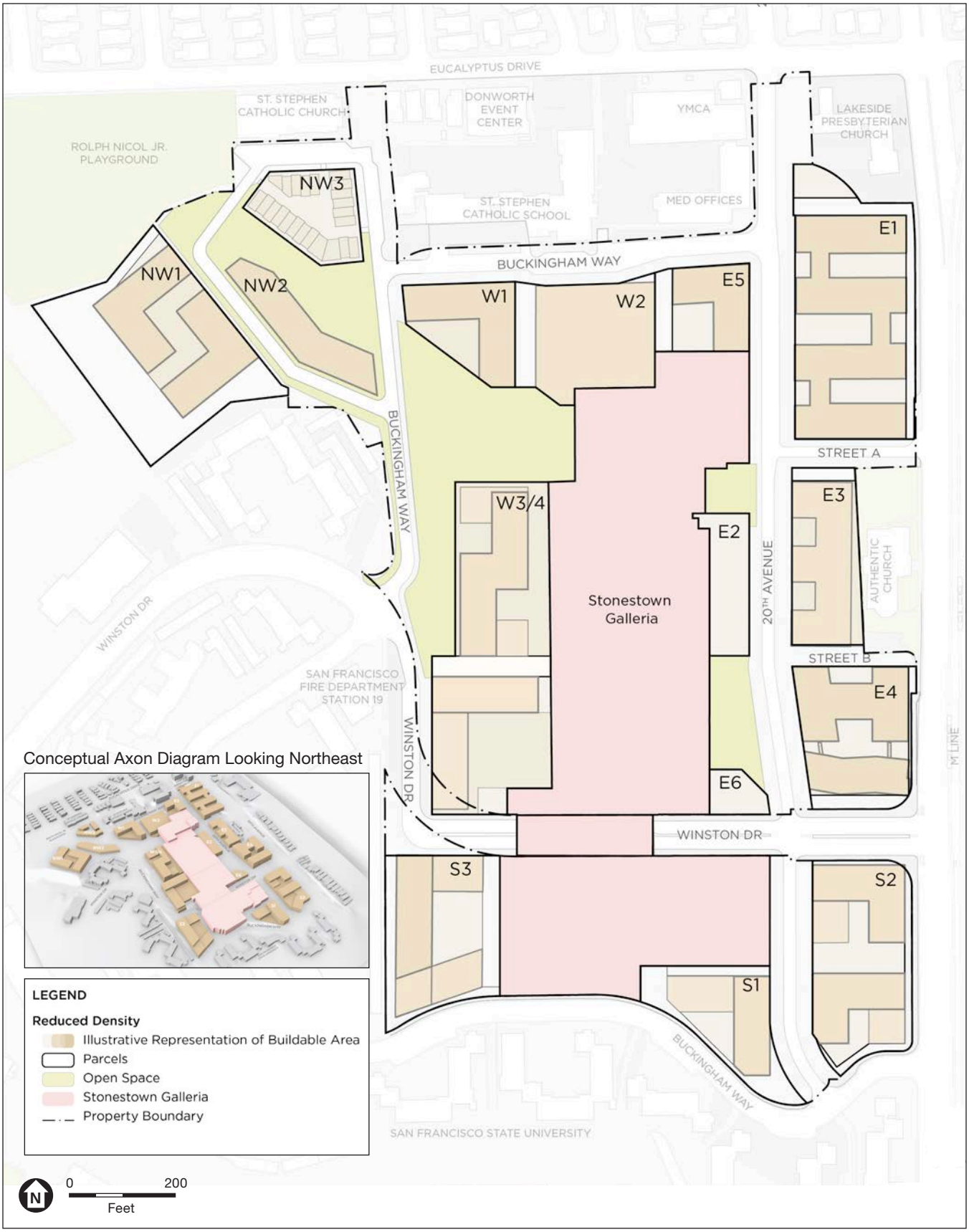
Alternative E would be similar to the proposed project or variant with respect to the types of land uses, street configurations, and site plan block configurations.

Similar to the proposed project, Alternative E would redevelop the 27 acres of surface parking into a master-planned, mixed-use community. As under the proposed project or variant, the existing 700-space parking garage in the southwest corner of the site, the former UA Stonestown Twin Theater at 501 Buckingham Way, the CitySports building, and the two-story commercial building in the northeast corner of the project site would be demolished. The 0.8-acre parcel containing the Authentic Church would not be developed under this alternative. The Alternative E development program is shown in Table 5-1,p. 5-11.

Overall, Alternative E would have an approximately 1,315,000-square-foot reduction in development compared to the proposed project (about 36 percent less building area than the proposed project). The buildings would be 30 to 80 feet in height instead of 30 to 190 feet under the proposed project or variant. No towers would be on Blocks W3, W4, S1, S2, or S3 under Alternative E.

Alternative E would have the same proposed street plan, intersection controls, transit stop relocation, and pedestrian and bicycle network would be the same as the proposed project or variant and designed according to the principles of the Better Streets Plan.

Construction of Alternative E would be similar to the proposed project or variant, although slightly reduced in both magnitude and duration. Construction activity in the site preparation and grading, excavation, and paving phases would largely remain the same. Building construction would be slightly reduced due to the reduction in building area compared to the proposed project or variant. In general, the same types of construction activities and equipment would be required. Construction is still anticipated to occur in six overlapping phases, but with the reduced size of the buildings, construction is anticipated to conservatively take seven and a half years compared to the eight-year duration for the proposed project or variant. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements.



SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-4
ALTERNATIVE E: REDUCED DENSITY ALTERNATIVE

REDUCED DENSITY ALTERNATIVE IMPACTS

HISTORIC ARCHITECTURAL RESOURCES

Under Alternative E, the former theater building would be demolished, as under the proposed project or variant. Demolition of the building would materially impair the historic architectural resource and it would no longer retain the ability to convey its significance as a New Formalist-style theater, resulting in a significant and unavoidable impact on a historic resource. Implementation of Mitigation Measures M-CR-1a through M-CR-1c would be required to reduce impacts. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. As such, the impact on historic architectural resources would remain ***significant and unavoidable with mitigation***.

TRANSPORTATION AND CIRCULATION

Under Alternative E, the proposed transportation and circulation modifications would be identical to those under the proposed project or variant. Since there would be a reduced land use program, Alternative E would result in fewer project-generated vehicle trips. Therefore, it is assumed that Alternative E would result in a lower, but still cumulatively considerable contribution to transit delay compared to the proposed project or variant.

TRANSIT DELAY AND TRANSPORTATION NETWORK CHANGES

The transportation and circulation changes under Alternative E would be identical to those under the proposed project or variant, including reducing travel lanes, signalizing intersections, and providing bicycle facilities. Alternative E would be identical to the proposed project or variant with respect to proposed land uses and street configurations with the following exceptions:

- Less residential and retail sales and services land use would be developed

Table 5-9 compares the land use programs and estimated vehicle trips of the proposed project and Alternative E. The vehicle trips represent a comparative estimate based on the percentage change of land use to show a reasonable order-of-magnitude difference and does not account for internalization. (See Appendix D.1, Travel Demand Memorandum regarding vehicle trip estimates and internalization.)

Travel demand is directly associated with the land use program. Therefore, given Alternative E's proposed land use reduction, vehicle trips would be expected to decrease compared to the proposed project by about 33.8 percent (as shown in Table 5-9). As discussed under Impact TR-4, p. 3.B-65, the proposed project would not result in a significant impact with respect to transit delay under existing plus project conditions. However, the variant would cause additional delay to the 57 Parkmerced inbound route above the 4-minute significance threshold and result in significant and unavoidable impacts with implementation of Mitigation Measures M-TR-4a and M-TR-4b.[343] With a 33.8 percent reduction in vehicle trips, Alternative E would result in less project-level transit delay compared to the proposed project or variant. Alternative E would therefore have a ***less-than-significant*** project-level impact related to public transit delay and Mitigation Measures M-TR-4a and M-TR-4b would not be applicable under this alternative.

[343] Four minutes of additional transit delay to an analyzed line or corridor represents a significance threshold; above 4 minutes, the likelihood of transit riders switching to other travel modes (i.e., single-occupancy vehicles or for-hire vehicles) increases. This threshold is discussed in more detail in Appendix D.2, Transit Delay Analysis Memorandum.

Table 5-9 Land Use Characteristics and Estimated Vehicle Trips, Alternative E: Reduced Density

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative E Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	244	(163)
Retail Sales and Services Use	492	231	(261)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	117	0
Childcare	32	32	0
Total	***1,249***	***827***	***(422)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(33.8%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

LOADING IMPACT

Similar to the proposed project or variant, it is conservatively assumed that a loading deficit could occur resulting in secondary effects to people walking, biking, or riding public transit. Mitigation Measure M-TR-6 would be required under Alternative E to reduce or eliminate any potential secondary effects that would occur due to freight and commercial and passenger loading. Loading impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

CONSTRUCTION IMPACT

Similar to the proposed project or variant, Alternative E would require coordination and review with public works and SFMTA in accordance with city blue book and public works requirements in order to avoid transportation-related construction impacts. However, the portions of Alternative E that are located on private right-of-way would not be subject to the blue book or other city requirements and, therefore, could result in sufficient disruption to result in significant impacts. Implementation of Mitigation Measure M-TR-1 would be required to reduce construction related impacts to reduce any transportation-related construction impacts. Construction impacts would be ***less than significant with mitigation***, similar to the proposed project or variant.

OTHER IMPACTS

As a result of the reduced scale of land use program and associated reduction in construction activity and person and vehicle trips generated, Alternative E would result in reduced construction and operational effects compared to those described for the proposed project or variant and therefore would also have ***less-***

than-significant impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access.

CUMULATIVE IMPACTS

Similar to the proposed project or variant, cumulative impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access, would be less than significant. Therefore, similar to the proposed project or variant, Alternative E would result in ***less-than-significant*** cumulative impacts related to vehicle miles traveled, potentially hazardous conditions, accessibility of people walking and bicycling, loading, parking, and emergency vehicle access. As with the proposed project or variant, Alternative E would contribute considerably to cumulative impacts related to loading and to construction; but the identified mitigation measures would reduce the cumulative impacts to ***less than significant with mitigation***.

With the 33.8 percent trip reduction compared to the proposed project, Alternative E would contribute lower cumulative transit delay compared to the proposed project or variant. Cumulative transit delay is largely associated with traffic volume growth from all anticipated future development, including neighboring developments like Parkmerced. However, the cumulative impacts to transit delay would not be eliminated with Alternative E.

As discussed under Impact C-TR-3, the proposed project's contribution to the significant delays of Muni 57, 28, 28R, and SamTrans Route 122 would range from 11 to 28 percent. A reduction of project-associated vehicle trips by up to 33.8 percent would still result in contributions of vehicle trips, adding vehicle trips to intersections and traffic movements that would experience substantial cumulative delay, and contributions to cumulative impacts. Alternative E's reduction of 33.8 percent of project-related vehicles as compared to the proposed project would make the alternative's contribution to the cumulative impact less than considerable. Travel delay increases exponentially with increases in traffic volumes, so the reduction of 33.8 percent of project trips would likely translate into an even higher percentage reduction in transit delay than 33.8 percent to the affected transit lines.

The TDM program would still include a performance standard to reduce up to 10 percent of vehicle trips as a way to reduce Alternative E's air quality impacts, discussed below. However, unlike the proposed project or variant, Alternative E would not contribute considerably to a significant cumulative transit delay impact and Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 would not be applicable under this alternative. Therefore, Alternative E would result in ***less-than-significant*** cumulative impacts related to transit delay.

NOISE AND VIBRATION

CONSTRUCTION NOISE

Alternative E construction would be similar to the proposed project or variant, although slightly reduced in both magnitude and duration. The number of truck trips to remove demolition debris and excavated materials would be reduced and, like the proposed project and variant would not result in a significant noise impact from construction trucks. Construction activity in the site preparation and grading, excavation, and paving phases would largely remain the same. Building construction would be slightly reduced due to the reduction in building square footages and the building foundations would require auger-cast or micro pile installation similar to the proposed project or variant. In general, the same types of construction activities and equipment would be required. Construction would still occur in six overlapping phases, but with the

reduced development program, construction would take seven and a half years compared to the eight-year duration for the proposed project or variant. Like the proposed project or variant, project construction could occur over a longer period, depending on market conditions and permitting requirements.

The types of construction equipment and use characteristics would not change because demolition, excavation, and construction activities, even though slightly more limited, would still occur and the building footprints would generally be the same, as only the building heights would be reduced. Therefore, the combined operation of construction equipment under Alternative E would have the same potential to exceed 10 dBA above the ambient noise level at the nearest offsite and future onsite sensitive receptors, which would be a significant impact. The construction noise reduction strategies identified under Mitigation Measure M-NO-1 would reduce the construction noise impacts at offsite and onsite sensitive receptors; however, similar to the proposed project or variant, this impact would remain ***significant and unavoidable with mitigation***.

CONSTRUCTION VIBRATION

Under Alternative E, construction activities that generate groundborne vibration would be the same as the proposed project or variant because they would occur in the same locations and would have similar foundations. The proposed construction equipment with the greatest potential to generate vibration would be a vibratory roller. As with the proposed project or variant, the distances of construction areas from buildings would be the same and vibration levels would be well below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures. Therefore, similar to the proposed project or variant, vibration impacts would be ***less than significant*** for Alternative E.

OPERATIONAL NOISE

Fixed Mechanical Equipment

Alternative E would require the same stationary noise equipment such as HVAC units and exhaust fans for the buildings. Alternative E would require fewer emergency generators as due to the reduction in building heights, with the maximum height at 80 feet. As described above, emergency generators are required by the San Francisco Building Code for buildings with occupied floor levels greater than 75 feet in height. Similar to the proposed project or variant, the HVAC equipment would be required and if located on rooftops could be closer to sensitive receptors. Similar to the proposed project or variant, HVAC equipment and emergency generator noise levels could exceed the noise ordinance standards; therefore, Mitigation Measure M-NO-4 would be required for Alternative E to ensure that proper enclosures, noise attenuation, or other sound muffling measures would be implemented to meet the noise ordinance standards. Therefore, like the proposed project or variant, this impact would be ***less than significant with mitigation***.

Amplified Sound

Open space uses under Alternative E would be the same as the proposed project or variant. These uses could still include outdoor events with live performances and amplified sound that could potentially exceed the standards in the noise ordinance. As under the proposed project or variant, Mitigation Measure M-NO-5 would be required for Alternative E to ensure that periodic and temporary noise increases from amplified sound associated with the events would not exceed standards in the noise ordinance. Therefore, the potential noise increases from amplified sound would be ***less than significant with mitigation***, similar to the proposed project or variant.

Traffic and Loading Noise

The mix of uses in Alternative E would be reduced compared to the proposed project or variant and, as described above under Transportation and Circulation, Alternative E would result in fewer daily vehicle trips compared to the proposed project or variant. As such, the traffic noise increase would be less than the traffic noise increases attributable to the proposed project or variant. In addition, noise from loading activity would still be localized and would be noticeable only in areas adjacent to a building, and thus, like the proposed project and variant, the potential operation of loading zones would not cause a substantial increase in ambient noise levels. Therefore, the traffic noise increase would be the reduced from the proposed project or variant and would be ***less than significant***.

CUMULATIVE IMPACTS

Construction-related cumulative noise and vibration impacts under Alternative E would be similar to those the proposed project or variant. Therefore, similar to the proposed project or variant, concurrent construction activities of the alternative and cumulative projects would exceed 10 dBA above the ambient noise level at sensitive receptors. Even with implementation of Mitigation Measure M-NO-1, cumulative construction noise impacts for Alternative E would be ***significant and unavoidable with mitigation*** similar to the proposed project or variant.

Cumulative operational noise conditions would be similar to the proposed project or variant and would include operation of mechanical equipment from both the project site and replaced residential buildings under the SFSU Future State 2035 project. Stationary equipment noise levels from the project site would be less than significant with implementation of Mitigation Measure M-NO-4. As under the proposed project or variant, due to the distance of the SFSU sites, the potential for combined noise effects from operation of fixed mechanical equipment would be limited, particularly given that the existing SFSU housing units that would be replaced already have HVAC equipment. Alternative E would therefore result in similar cumulative noise impacts from stationery equipment as the proposed project or variant. Therefore, cumulative operational noise impacts under Alternative E would be ***less than significant***.

Alternative E would generate fewer daily vehicle trips than the proposed project or variant. Under the proposed project or variant, the traffic noise increases under cumulative conditions would not result in noise level increases by more than 3 dBA or 5 dBA, depending on whether the existing noise levels exceed the normally acceptable land use compatibility standard for the land uses along the roadway segments. Therefore, Alternative E would further reduce the less-than-significant cumulative traffic noise impacts along the roadway segments. As such, cumulative traffic noise impacts under Alternative E would be ***less than significant.***

AIR QUALITY

CONSTRUCTION IMPACTS: FUGITIVE DUST EMISSIONS

As with the proposed project, construction activities under Alternative E would be required to comply with the City's Construction Dust Control Ordinance and to implement specified dust control measures. Compliance with the regulations and procedures set forth by the Construction Dust Control Ordinance would ensure that like the proposed project or variant, potential dust related criteria air pollutant impacts for Alternative E would be ***less than significant***.

CONSTRUCTION AND COMBINED CONSTRUCTION AND OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative E would require roughly the same total construction activity as the proposed project or variant. Alternative E includes fewer dwelling units, less retail sales and service uses, and fewer institutional uses, which means aboveground construction activities associated with the structures would be less than the proposed project or variant. However, Alternative E would involve similar site preparation and grading, excavation, and paving phases and therefore would have require similar ground disturbing construction activities as the proposed project or variant. The total building square footage for Alternative E would be approximately 36 percent less than the proposed project. Construction emissions associated with Alternative E are conservatively assumed to be the same as those from the proposed project or variant. However, operational emissions for Alternative E would be substantially less than the proposed project or variant given the much lower building square footage for this alternative. Nevertheless, construction activity and combined operational activity for Alternative E could still result in ROG emissions in excess of the thresholds of significance from 2028 through 2032. As discussed under Impact AQ-1 and shown in Table 3.D-8, p. 3.D-39, construction-related emissions of ROG would exceed the significance threshold in year 2028, which would be a significant impact. In addition, as discussed under Impact AQ-1, overlapping construction and operational emissions for the proposed project or variant would exceed significance thresholds for ROG from 2028 through 2032, which would be a significant impact. Thus, Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a identified for the proposed project or variant would be applicable to Alternative E to reduce construction and operational ROG emissions.

Table 5-10 presents mitigated construction and operational emissions by year from 2024 through 2032 for Alternative E.

As shown in the table above, unlike the proposed project or variant, which would result in a significant and unavoidable impact with mitigation, combined construction plus operational ROG emissions for Alternative E would be reduced below the ROG threshold of significance (54 pounds per day) in all years with implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a given that operational emissions for Alternative D would be substantially less than the proposed project or variant due to the much lower building square footage. Mitigation Measure M-AQ-1j would not be needed. Therefore, construction and combined construction and operational criteria air pollutant impacts for Alternative E would be ***less than significant with mitigation***.

OPERATIONAL IMPACTS: CRITERIA AIR POLLUTANT EMISSIONS

Alternative E would reduce operational emissions because the overall development (i.e., total building square footage) of the Alternative E is 36 percent less than the proposed project. However, like the proposed project or variant, operational ROG emissions of Alternative E at full buildout are expected to exceed the daily and annual significance thresholds starting in 2032. As discussed under Impact AQ-2 and shown in Tables 3.D-10 and 3.D-11, pp. 3.D-53 and 3.D-54, for the proposed project or variant, operational emissions of ROG would exceed the significance threshold at full buildout in year 2032, which would be a significant impact. Thus, with the exception of Mitigation Measure M-AQ-1j, all mitigation measures identified for the proposed project or variant to reduce operational ROG emissions (Mitigation Measures M-AQ-1d through M-AQ-1i and M-TR-4a) would apply to Alternative E.

Table 5-10 Mitigated Construction and Net New Interim Operational Emissions by Year for Alternative E

Year	Combined Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds per day) [a,b,c]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
ALTERNATIVE E: REDUCED DENSITY ALTERNATIVE				
2024 (construction only)	0.4	1.5	0.9	0.2
2025 (construction only)	1.4	2.6	2.5	0.5
2026 (construction only)	5	5.5	5.7	1.0
2027 (construction only)	8.9	7.7	8.7	1.6
2028 (construction and operations)	18	11	15	2.7
2029 (construction and operations)	32	17	23	4.1
2030 (construction and operations)	38	19	26	4.6
2031 (construction and operations)	46	22	29	5.2
2032 (construction and operations)	52	19	33	5.8
Significance Thresholds	54	54	82	54
Exceeds Threshold	No	No	No	No

SOURCE: Ramboll, *Air Quality Analysis of Alternatives for Stonestown Redevelopment Project*, November 2022

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; PM = particulate matter; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NOx = nitrogen oxides

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[c] Net operational emissions were calculated by subtracting the emissions from the existing conditions from the alternative's emissions.

Table 5-11 presents net new operational emissions with mitigation incorporated for Alternative E during full buildout in 2032 after construction would be completed.

As shown in Table 5-11, unlike the proposed project or variant, which would result in a significant and unavoidable impact with mitigation, operational ROG emissions for Alternative E would be reduced below the significance thresholds with implementation of Mitigation Measures M-AQ-1d through M-AQ-1i and M-TR-4a given that operational emissions for Alternative E would be substantially less than the proposed project or variant due to the much lower building square footage. Therefore, operational criteria pollutant impacts from Alternative E would be ***less than significant with mitigation***.

Table 5-11 Net New Mitigated Operational Emissions for Alternative E at Buildout

Emissions Source or Year	Criteria Air Pollutant Emissions[a] (tons/year) ROG	NO_X	PM_{10}	$PM_{2.5}$	(pounds/day)[b] ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS [c]								
Architectural Coating	<0.1	—	—	—	0.4	—	—	—
Consumer Products	0.3	—	—	—	1.8	—	—	—
Landscaping	<0.1	—	—	—	0.2	—	—	—
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Subtotal	*0.45*	*<0.1*	*<0.1*	*<0.1*	*2.4*	*0.1*	*<0.1*	*<0.1*
MITIGATED FULL BUILDOUT ALTERNATIVE E EMISSIONS (2032)								
Architectural Coating	0.18	—	—	—	1.0	—	—	—
Consumer Products	6.7	—	—	—	37	—	—	—
Landscaping	—	—	—	—	—	—	—	—
Mobile	2.9	3.3	6.0	1.0	16	18	33	5.7
Emergency Generators	<0.1	0.11	<0.1	<0.1	0.24	0.60	<0.1	<0.1
Subtotal	*10*	*3.4*	*6.0*	*1.0*	*54*	*18*	*33*	*5.8*
MITIGATED NET NEW ALTERNATIVE E EMISSIONS[d]								
Total, All Sources	*9*	*3.3*	*6.0*	*1.0*	*51*	*18*	*33*	*5.7*
Significance Threshold	10	10	15	10	54	54	82	54
Exceeds Threshold	No	No	No	No	No	No	No	No

SOURCES: Ramboll, *Air Quality Analysis of Alternatives for Stonestown Redevelopment Project*, November 2022

ABBREVIATIONS:

CalEEMod = California Emissions Estimator Model; $PM_{2.5}$ = PM less than 2.5 microns in diameter; PM_{10} = PM less than 10 microns in diameter; ROG = reactive organic gases; NO_X = nitrogen oxides

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[c] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use type and energy use rates provided by the Project Applicant.
[d] Net new emissions were calculated as the difference between full buildout emissions and existing condition emissions.

TOXIC AIR CONTAMINANTS, CONSTRUCTION AND OPERATION

Construction and operation of the proposed project or variant would generate TAC emissions, including DPM and $PM_{2.5}$, that could expose both offsite and onsite sensitive receptors to localized health risks. As discussed above, Alternative E would have 36 percent less square footage of development as the proposed project. Therefore, it is anticipated that Alternative E would generate less TAC emissions than the proposed project or variant.

Although Alternative E involves substantially less development than the proposed project, similar to the proposed project, it is likely that increased cancer risk would still be significant in the absence of mitigation. As discussed under Impact AQ-3, the proposed project or variant would result in lifetime excess cancer risks that exceed significance thresholds for the residential and preschool student offsite receptors and for the residential and daycare onsite receptors. This would be a significant impact. Therefore, for Alternative E, Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would be required to reduce lifetime excess cancer risk. Mitigation Measures M-AQ-1a and M-AQ-1c would apply during all construction phases. Mitigation Measures M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a would apply to interim and full buildout operations.

Similar to the proposed project or variant, with implementation of these mitigation measures, the lifetime excess cancer risk to both offsite and onsite receptors associated with Alternative E would be reduced below the significance thresholds, and the impact would be ***less than significant with mitigation***.

ODORS

Like the proposed project or variant, Alternative E would not create objectionable odors that would affect a substantial number of people. As with the proposed project or variant, construction odors associated with diesel-powered vehicles and equipment for Alternative E would be temporary and not likely to extend beyond the project site. During operations, small-scale localized odor issues could occur (e.g., sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation). Alternative E would be required to implement odor controls as required by applicable regulations. Therefore, similar to the proposed project or variant, odor impacts for Alternative E would be ***less than significant***. No mitigation measures would be required.

CONSISTENCY WITH THE CLEAN AIR PLAN

Similar to the proposed project or variant, Alternative E includes many of the control measures from the 2017 Clean Air Plan, as shown in Table 3.D-19, p. 3.D-75, and involves infill development that is close to transit and commercial uses. Alternative E also would also not add parking beyond the maximum allowed or preclude the extension of a transit line or a bike path or any other transit improvement. Similar to the proposed project or variant, Alternative E would require Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a to ensure consistency with the Clean Air Plan. With implementation of these mitigation measures and compliance with applicable regulations, Alternative E would include applicable control measures from the 2017 Clean Air Plan, thereby supporting the primary goals of the 2017 Clean Air Plan, and Alternative E would not interfere with, disrupt, or hinder implementation of the 2017 Clean Air Plan. The impact of Alternative E would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: TOXIC AIR CONTAMINANTS

Alternative E would reduce construction and operational TAC emissions due to the reduction in development but would still result in significant cumulative health risk impacts from TACs, like the proposed project or variant. Like the proposed project or variant, cumulative health risks from this alternative would be reduced to less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. Therefore, cumulative health risk impacts from Alternative E would be ***less than significant with mitigation***.

CUMULATIVE IMPACTS: ODORS

Similar to the proposed project or variant, Alternative E would not create objectionable odors that would affect a substantial number of people. Therefore, the minor, generally non-offensive odors associated with Alternative E would not combine with cumulative odor sources to contribute to a cumulative odor impact. Therefore, this impact would be ***less than significant***.

WIND

Under Alternative E, building heights would be substantially reduced in height from a maximum height of 190 feet under the proposed project or variant to a maximum height of 80 feet. In particular, Blocks NW1 and NW2, which would be 90 feet under the proposed project or variant and would result in wind hazard exceedances at the base of Block NW1, would be reduced to 40 and 30 feet tall under this alternative, respectively. In general, buildings under Alternative E would be similar in height to surrounding buildings in the area, and would not exceed 85 feet, which is generally the height at which buildings may have a substantial effect on ground-level wind speeds. This height reduction would reduce the potential for buildings to redirect strong prevailing winds to ground level. Therefore, this alternative would not result in exceedances of the wind hazard criterion at any test point locations.[344] Mitigation Measures M-WI-1a through M-WI-1d identified in Section 3.E, Wind, would not apply to this alternative. Therefore, wind impacts under Alternative E would be substantially less than under the proposed project or variant. Unlike the proposed project or variant, project-level and contribution to cumulative wind impacts would be ***less than significant***.

SHADOW

Under Alternative E, buildings would have the same footprint as under the proposed project or variant but would be reduced in height from up to 190 feet tall to up to 80 feet tall. Compared to the proposed project or variant, Alternative E would reduce net new shadow on the Rolph Nicol Jr. Playground from 9.87 percent to 1.79 percent of theoretical annual available sunlight at the playground.[345] In addition, Alternative E would eliminate net new shadow on the Junipero Serra Playground.[346] Therefore, under Alternative E, project-level and cumulative shadow impacts on parks and open spaces would be reduced compared to the proposed project or variant and would be ***less than significant***.

UTILITIES AND SERVICE SYSTEMS

The development program under Alternative E would be 36 percent less than the proposed project and would consist of the same utilities infrastructure modifications to serve the new buildings. Therefore, as is the case for the proposed project or variant, Alternative E would not require or result in the relocation or construction of additional new or expanded water, stormwater, wastewater, electric power, or telecommunications facilities, and project-level and cumulative impacts would be ***less than significant***. In addition, as is the case for the proposed project or variant, the increased long-term water demand of Alternative E is accounted for within San Francisco's overall retail water demand, and existing water supplies would be sufficient to meet the demand. Similar to the proposed project or variant, project-level and cumulative impacts related to water supply under Alternative E would be ***less than significant***. Similarly, estimated wastewater demand for Alternative E would be less than that of the proposed project or variant, and therefore, as is the case for the proposed project or variant, impacts related to wastewater treatment

[344] RWDI, *Stonestown Galleria – San Francisco, CA, Pedestrian Wind Study – Letter of Opinion*, RWDI Project Number: 2004669, October 7, 2022.
[345] Fastcast, *Alternatives Shadow Results Table,* October 5, 2022.
[346] Ibid.

requirements would be ***less than significant***. Finally, because the magnitude of development under Alternative E would be similar or less than the proposed project or variant, like the proposed project or variant, project-level and cumulative impacts related to solid waste under Alternative E would be ***less than significant***.

ISSUES ANALYZED IN THE INITIAL STUDY

Alternative E would have 1,172 fewer residential units and overall, approximately 1,315,000 less square feet of development than the proposed project. The number of onsite residents and employees would therefore be fewer than the proposed project or variant. This alternative would have similar amounts of excavation and ground disturbance compared to the proposed project or variant for site preparation and installation of utilities to serve the new buildings. Impacts of Alternative E would be reduced or similar to the less-than-significant or less-than-significant-with-mitigation impacts identified for the proposed project or variant related to the following environmental resource areas: land use and land use planning, population and housing, cultural resources (archeological resources and human remains), tribal cultural resources, greenhouse gas emissions, shadow, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous materials, mineral resources, energy resources, agriculture and forestry resources, and wildfire. The mitigation measures presented in the initial study would be required under Alternative E.

5.D Comparison of Alternatives and Environmentally Superior Alternative

5.D.1 Alternatives Summary Comparison of Impacts and Ability to Meet Project Objectives

Table 5-12 identifies the level of impact for the proposed project or variant and each alternative (e.g., no impact, less-than-significant impact, less-than-significant impact with mitigation, significant and unavoidable impact, or significant and unavoidable impact with mitigation) and whether the impact of the alternative would be the same as, less than, or greater than the proposed project or variant impacts. In some cases, the proposed project or variant and alternative would result in the same significance determination, but the degree of that impact with the alternative might be less than or greater than the proposed project or variant.

A comparison of each alternative and its ability to meet the project objectives compared to the proposed project is summarized below in **Table 5-13**, p. 5-78, and evaluated in more detail in the subsequent discussion.

Table 5-12 Comparison of Environmental Impacts of the Proposed Project or Variant to Impacts of the Alternatives

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SUMMARY OF IMPACTS FOR TOPICS IN THIS DRAFT EIR						
SECTION 3.A, HISTORIC ARCHITECTURAL RESOURCES						
Impact CR-1: The proposed project or variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, including those resources listed in article 10 or article 11 of the San Francisco Planning Code.	**SUM**	NI <	LTS <	**SUM** **<**	**SUM** **=**	**SUM** **=**
Impact C-CR-1: The proposed project or variant, in combination with cumulative projects, could result in demolition and/or alteration of historical resources, as defined in CEQA Guidelines section 15064.5.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION 3.B, TRANSPORTATION AND CIRCULATION						
Impact TR-1: Construction of the proposed project or variant would require a substantially extended duration or intense activity, and the secondary effects would create potentially hazardous conditions for people walking, bicycling, driving, or riding transit; or interfere with emergency access or accessibility for people walking or bicycling; or substantially delay public transit.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact TR-2: Operation of the proposed project or variant would not create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact TR-3: Operation of the proposed project or variant would not interfere with accessibility of people walking or bicycling to and from the project site, and adjoining areas, or result in inadequate emergency access.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact TR-4: Operation of the proposed project would not substantially delay public transit; operation of the variant would substantially delay public transit.	LTS (Proposed Project) / **SUM (Variant)**	NI <	LTS < (Proposed Project) / LTS < (Variant)	LTS < (Proposed Project) / LTS < (Variant)	LTS < (Proposed Project) / LTS < (Variant)	LTS < (Proposed Project) / LTS < (Variant)
Impact TR-5: Operation of the proposed project or variant would not cause substantial additional VMT or substantially induce automobile travel.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact TR-6: Operation of the proposed project or variant may result in a loading deficit but would not result in secondary effects like loading vehicles blocking bus routes or pedestrian paths of travel.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-TR-1: The proposed project or variant, in combination with cumulative projects, would not result in significant construction-related transportation impacts.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-TR-2: The proposed project or variant, in combination with cumulative projects, would not create potentially hazardous conditions and would not interfere with accessibility.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-TR-3: The proposed project or variant, in combination with cumulative projects, would substantially delay public transit, and the proposed project or variant would contribute considerably.	**SUM**	NI <	**SUM** **=**	**SUM** **<**	LTSM <	LTSM <
Impact C-TR-4: The proposed project or variant, in combination with cumulative projects, would not cause substantial additional vehicle miles traveled or substantially induce automobile travel.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact C-TR-5: The proposed project or variant, in combination with cumulative projects, would not result in cumulative loading impacts.	LTSM	NI <	LTS =	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SECTION 3.C, NOISE AND VIBRATION						
Impact NO-1: Construction of the proposed project or variant would generate a substantial temporary or periodic increase in ambient noise levels at sensitive receptors in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	**SUM** **=**	**SUM** **=**
Impact NO-2: Construction truck traffic from the proposed project or variant would not cause a substantial temporary or periodic increase in ambient noise levels along access streets in the project vicinity.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact NO-3: Construction of the proposed project or variant would not generate excessive groundborne vibration or groundborne noise levels.	LTS	NI <	LTS =	LTS =	LTS <	LTS =
Impact NO-4: Operation of stationary equipment on the project site from the proposed project or variant would result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact NO-5: Events that include outdoor amplified sound would result in substantial temporary or periodic increases in ambient noise levels in the immediate project vicinity, or expose noise-sensitive receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact NO-6: Proposed project or variant traffic and loading operations would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-NO-1: Construction of the proposed project or variant, in combination with cumulative projects, would result in the generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	**SUM** **=**	**SUM** **=**
Impact C-NO-2: Construction of the proposed project or variant, in combination with cumulative projects, would not result in the generation of excessive groundborne vibration or groundborne noise levels during construction.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact C-NO-3: Operation of the stationary equipment on the project site from the proposed project or variant, in combination with cumulative projects, could result in the generation of a substantial permanent increase in ambient noise levels in the immediate project vicinity, or permanently expose noise-sensitive	LTS	NI <	LTS =	LTS =	LTS <	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
receptors to noise levels in excess of standards in the San Francisco Noise Ordinance.						
Impact C-NO-4: Proposed project or variant traffic and loading operations, in combination with cumulative projects, would not cause a substantial permanent increase in ambient noise levels in the project vicinity.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION 3.D, AIR QUALITY						
Impact AQ-1: During construction phases that overlap with operations, the proposed project or variant would result in a cumulatively considerable net increase in a criteria air pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	LTSM <	LTSM <
Impact AQ-2: During full buildout project operations, the proposed project or variant would result in a cumulatively considerable net increase of a criteria air pollutant for which the project region is in nonattainment under an applicable federal, state, or regional ambient air quality standard.	**SUM**	NI <	**SUM** **=**	**SUM** **=**	LTSM <	LTSM <
Impact AQ-3: The proposed project or variant would result in emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants that could expose sensitive receptors to substantial pollutant concentrations.	LTSM	NI <	LTSM =	LTSM =	LTSM <	LTSM <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact AQ-4: The proposed project or variant would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
Impact AQ-5: The proposed project or variant would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-AQ-1: The proposed project or variant, in combination with cumulative projects, would result in exposure of sensitive receptors to substantial levels of fine particulate matter ($PM_{2.5}$) and toxic air contaminants.	LTSM	NI <	LTSM =	LTSM =	LTSM <	LTSM <
Impact C-AQ-2: The proposed project or variant, in combination with cumulative projects, would not result in other emissions (such as those leading to odors) that would adversely affect a substantial number of people.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION 3.E, WIND						
Impact WI-1: During partial buildout, the proposed project or variant would temporarily create wind hazards in publicly accessible areas of substantial pedestrian use.	**SUM**	NI <	**SUM** **<**	**SUM** **=**	LTS <	LTS <
Impact WI-2: At full buildout, the proposed project or variant would create wind hazards in publicly accessible areas of substantial pedestrian use.	**SUM**	NI <	**SUM** **<**	**SUM** **=**	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-WI-1: The proposed project or variant, in combination with cumulative projects, would create wind hazards in publicly accessible areas of substantial pedestrian use.	**SUM**	NI <	**SUM** **<**	**SUM** **=**	LTS <	LTS <
SECTION 3.F, SHADOW						
Impact SH-1: The proposed project or variant would create new shadow; however, this new shadow would not substantially and adversely affect the use and enjoyment of publicly accessible open spaces.	LTS	NI <	LTS <	LTS =	LTS <	LTS <
Impact C-SH-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative shadow impact.	LTS	NI <	LTS <	LTS =	LTS <	LTS <
SECTION 3.G, UTILITIES AND SERVICE SYSTEMS						
Impact UT-1: The proposed project or variant would not require construction of new or expanded water, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact UT-2: Sufficient water supplies are available to serve the proposed project or variant and reasonably foreseeable future development in normal, dry, and multiple dry years unless the Bay	LTS	NI <	LTS =	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Delta Plan Amendment is implemented; in that event the SFPUC may develop new or expanded water supply facilities to address shortfalls in single and multiple dry years but this would occur with or without the proposed project or variant. Impacts related to new or expanded water supply facilities cannot be identified at this time or implemented in the near term; instead, the SFPUC would address supply shortfalls through increased rationing, which could result in significant cumulative effects, but the project would not make a considerable contribution to impacts from increased rationing.						
Impact UT-3: The proposed project or variant would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the projected demand in addition to the provider's existing commitments and would not require construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact UT-4: The proposed project or variant would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	NI <	LTS =	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
Impact C-UT-1: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to the wastewater and stormwater collection and treatment system.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-UT-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to electric and telecommunication facilities.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
Impact C-UT-3: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to solid waste facilities and regulations.	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SUMMARY OF IMPACTS FOR TOPICS IN THE INITIAL STUDY						
SECTION E.1, LAND USE AND PLANNING						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.2, POPULATION AND HOUSING						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS <	LTS <

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SECTION E.3, CULTURAL RESOURCES						
Impact CR-2: The proposed project or variant could cause a substantial adverse change in the significance of an archeological resource	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact CR-3: The proposed project or variant could disturb any human remains, including those interred outside of formal cemeteries.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-CR-2: The proposed project or variant, in combination with cumulative projects, would not result in a significant cumulative impact related to archeological resources and human remains.	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.4, TRIBAL CULTURAL RESOURCES						
Impact TCR-1: The proposed project or variant could result in a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
Impact C-TCR-1: The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources.	LTS	NI <	LTS =	LTS =	LTS =	LTS =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
SECTION E.8, GREENHOUSE GAS EMISSIONS						
Impact C-GG-1: The proposed project or variant would generate greenhouse gas emissions that would result in a significant impact on the environment and would conflict with a policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =
SECTION E.11, RECREATION						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION E.13, PUBLIC SERVICES						
All impacts LTS	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION E.14, BIOLOGICAL RESOURCES						
All impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.15, GEOLOGY AND SOILS						
Impact GE-6: The proposed project or variant could directly or indirectly destroy a unique paleontological resource or site.	LTSM	NI <	LTSM =	LTSM =	LTSM =	LTSM =

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation; SU = Significant and unavoidable.
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than); ≤ (less than or equal to)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Impacts[a]	Proposed Project or Variant	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
All other geology and soils impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.16, HYDROLOGY AND WATER QUALITY						
All impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.17, HAZARDS AND HAZARDOUS MATERIALS						
All impacts	LTS	NI <	LTS =	LTS =	LTS =	LTS =
SECTION E.18, MINERAL RESOURCES						
None applicable						
SECTION E.19, ENERGY						
All impacts	LTS	NI <	LTS =	LTS =	LTS <	LTS <
SECTION E.20, AGRICULTURE AND FORESTRY RESOURCES						
None applicable						
SECTION E.21, WILDFIRE						
None applicable						

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:

[a] See EIR Chapter 3 and Appendix B for complete impact statements.

Table 5-13 Summary of Ability of Alternatives to Address Project Objectives

Project Objectives	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
	Does the alternative address the objective?				
1. Redevelop the underutilized portions of the project site, including surface parking lots, structured parking, and vacant structures surrounding Stonestown Galleria, to create a new neighborhood that reflects excellence in urban design principles; that provides a mix of residential, retail, commercial, hotel, public gathering spaces, and community uses to support a vibrant town center; and that benefits the existing surrounding neighborhoods, Stonestown Galleria, and the future new residents.	No	Partial	Yes	Partial	Yes
2. Contribute to meeting the San Francisco General Plan Housing Element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for San Francisco by maximizing the number of dwelling units throughout the Project site and providing housing in proximity to local and regional public transportation.	No	Yes	Yes	Partial	Partial
3. Build a mixed-income residential community that provides housing at a range of affordability levels, with a wide range of building styles, heights, dwelling unit types, tenure, and supporting on-site amenities; that attracts a diversity of household compositions, including children, adults, and seniors; and that increases business and employment opportunities.	No	Yes	Yes	Partial	Partial
4. Prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to nature and to the existing surrounding residential neighborhood of Merced Manor.	No	Partial	Yes	Partial	Yes
5. Add new residents, open space amenities, and complementary retail to bring more shoppers to the site while supporting the continued operations of the existing Stonestown Galleria, and create synergies among uses on the site.	No	Partial	Yes	Partial	Partial

Project Objectives	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
	Does the alternative address the objective?				
6. Link the retail-centric heart of the project, located around the existing Stonestown Galleria and the new 20th Avenue corridor, to the existing and proposed adjacent residential areas through a network of pedestrian pathways, plazas, and parks.	No	Partial	Yes	No	Yes
7. Focus the customer journey by concentrating a variety of retail, restaurant, commercial uses, and supportive parking within the retail-centric heart of the site located around the existing shopping center and the new 20th Avenue corridor in order to optimize foot traffic for retail tenants and maximize cross-shopping opportunities by shoppers and visitors to the project.	No	Yes	Yes	No	Yes
8. Provide space to accommodate other commercial uses, including hotel, small office, medical office, and other neighborhood-serving uses complementary to a town center and to serve project residents as well as visitors of the site.	No	Yes	Yes	No	Yes
9. Provide active public gathering spaces adjacent to Stonestown Galleria to promote and improve opportunities for mingling and connection for people of all ages and abilities.	No	Partial	Yes	No	Yes
10. Build adequate parking and loading access to serve the needs of project residents, workers, retailers, visitors, and the existing Stonestown Galleria and concentrate parking near the retail centric core of the project site.	No	Yes	Yes	Yes	Yes
11. Create a circulation and transportation system that emphasizes transit-oriented development, maximizes foot traffic to the shopping center, and provides pedestrian and bicycle connections to and from the Project site to adjacent neighborhoods and recreational areas such as Ocean Beach, Rolph Nicol Jr. Playground, Lake Merced, and Stern Grove.	No	Partial	Yes	No	Yes
12. Improve the infrastructure at the project site, including new streets and sidewalks, bicycle and pedestrian amenities, multiuse paths, water, sewer, gas/electric utilities, and new fire hydrant infrastructure.	No	Yes	Yes	Partial	Yes

Project Objectives	Alternative A: No Project Alternative	Alternative B: Full Preservation Alternative	Alternative C: Partial Preservation and Relocated Parking Alternative	Alternative D: Code Compliant Alternative	Alternative E: Reduced Density Alternative
	Does the alternative address the objective?				
13. Build a neighborhood resilient to sea level rise and earthquakes and demonstrate leadership in sustainable development by constructing improvements intended to reduce the neighborhood's per capita consumption of electricity, natural gas, and potable water, and generation of wastewater.	No	Yes	Yes	Yes	Yes
14. Create a development that is financially feasible and that can fund the project's capital costs and ongoing operation and maintenance costs relating to the redevelopment and long-term operation of the property.	No	Unknown	Unknown	Unknown	Unknown

ALTERNATIVE A: NO PROJECT ALTERNATIVE

Under Alternative A, none of the impacts associated with the proposed project or variant as described in Chapter 3 and the initial study (Appendix B) of this draft EIR would occur. The existing project site would be retained in its current condition; no new buildings, infrastructure, open space, or transportation and circulation changes would be constructed. There would be no change to existing site circulation. Alternative A would have no significant impacts related to historic architectural resources, transportation and circulation, noise and vibration, air quality, and wind. Therefore, the No Project Alternative would avoid the significant and unavoidable impacts for the proposed project or variant.

As shown in Table 5-13, p. 5-78, the No Project Alternative would not meet any of the project objectives. Under Alternative A, the existing uses on the project site would not change. The project site would remain under the existing C-2 (Community Business), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) Use Districts and the 40-X and 65-D Height and Bulk Districts, and no master-planned, mixed-use community would be built at the project site.

ALTERNATIVE B: FULL PRESERVATION ALTERNATIVE

Alternative B would avoid one significant and unavoidable impact identified for the proposed project or variant. This alternative would substantially lessen the severity of the following impact, reducing it from significant and unavoidable with mitigation to less than significant.

- Significant and unavoidable impact on a historic resource would be avoided by retaining and rehabilitating the theater building.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative B and would still occur include the following:

- Significant and unavoidable variant transit delay would still occur.
- Significant and unavoidable cumulative transit delay impacts would still occur, and the addition of vehicle trips generated by Alternative B would be cumulatively considerable. Cumulative transit delay impacts would remain significant and unavoidable even with mitigation.
- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be the similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be the similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable partial buildout, full buildout, and cumulative level wind hazards would be less than the proposed project or variant but would still increase the number of locations at which the wind hazard would be exceeded. This impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative B include impacts related to: archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

As indicated in Table 5-2, p. 5-18, Alternative B would meet most of the project objectives including contributing to the City's housing goals (objective 2), building a mixed-income residential community that provides a range of housing (objective 3), linking the retail-centric heart of the project to existing and proposed adjacent residential areas (objective 6), concentrating a variety of retail, restaurant, and commercial uses around the existing shopping center and new 20th Avenue corridor (objective 7), space to accommodate commercial uses (objective 8), building adequate parking and loading access (objective 10), improving infrastructure at the project site (objective 12), and building a neighborhood resilient to sea level rise and earthquakes and demonstrate sustainable development (objective 13).

The addition of buildings at Blocks NW4 and W5 in the northwest corner of the project site would result in less available open space under Alternative B. Alternative B would partially meet objectives 1, 4, 5, 9, and 11 because it would provide 3.2 acres of open space, or approximately 53 percent of the open space proposed under the project or variant. Alternative B would meet the project objectives, but to a lesser degree than the proposed project or variant given that Alternative B would provide less open space. The financial feasibility of Alternative B is unknown.

ALTERNATIVE C: PARTIAL PRESERVATION AND RELOCATED PARKING ALTERNATIVE

Alternative C would reduce one significant and unavoidable impact identified for the proposed project or variant. This alternative would substantially lessen the severity of the following impact, reducing it from significant and unavoidable with mitigation to less than significant with mitigation.

- Significant and unavoidable impacts to transit delay identified for the variant would be avoided by relocating a portion of on-site vehicle parking within the site to redirect vehicle trips to and from the project away from the roadways and intersections where transit travel times are most delayed. The resulting transit delay impacts would be less than significant.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative C and would still occur include the following:

- Significant and unavoidable impacts on a historic resource would be less than the proposed project or variant as the alternative would alter the theater building. However, the impact would remain significant and unavoidable with mitigation.
- Significant and unavoidable cumulative transit delay impacts would still occur, and the addition of vehicle trips generated by Alternative C would be cumulatively considerable for the 57 Parkmerced inbound, the SamTrans Route 122 northbound, and the 28/28R combined outbound. The alternative would reduce delay contributions to the 57 Parkmerced outbound to less than cumulatively considerable levels. Cumulative transit delay impacts would remain significant and unavoidable even with mitigation, although one of four lines analyzed would be reduced to less than cumulatively considerable.

- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be the similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be the similar to that of the proposed project or variant, emission levels would exceed thresholds, and the impact would remain significant and unavoidable even with mitigation.
- Significant and unavoidable partial buildout, full buildout, and cumulative level wind hazards would be less than the proposed project or variant but would still increase the number of locations at which the wind hazard would be exceeded. This impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative C include impacts related to: archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

As indicated in Table 5-2, p. 5-18, Alternative C would meet most of the project objectives including redeveloping underutilized portions of the site to create a new neighborhood (objective 1), contributing to the City's housing goals (objective 2), building a mixed-income residential community that provides a range of housing (objective 3), prioritizing residential uses in the northwest corner of the project site (objective 4), adding new residents, open space and amenities while supporting the continued operations of the Stonestown shopping mall (objective 5), linking the retail-centric heart of the project to existing and proposed adjacent residential areas (objective 6), concentrating a variety of retail, restaurant, and commercial uses around the existing shopping center and new 20th Avenue corridor (objective 7), space to accommodate commercial uses (objective 8), providing active public gathering spaces (objective 9), building adequate parking and loading access (objective 10), creating a circulation and transportation system (objective 11), improving infrastructure at the project site (objective 12), and building a neighborhood resilient to sea level rise and earthquakes and demonstrate sustainable development (objective 13). The financial feasibility of Alternative C is unknown.

ALTERNATIVE D: CODE COMPLIANT ALTERNATIVE

Alternative D would substantially lessen the severity of seven significant and unavoidable impact identified for the proposed project or variant, reducing it from significant and unavoidable with mitigation to less than significant with mitigation or less than significant:

- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be reduced to less than significant with mitigation.

- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable partial buildout wind hazards would be reduced to less than significant.
- Significant and unavoidable full buildout wind hazards would be reduced to less than significant.
- Significant and unavoidable cumulative wind hazards would be reduced to less than significant.
- Significant and unavoidable project-level impacts related to transit delay would be reduced to less than significant.
- Significant and unavoidable cumulative transit delay impacts would still occur, but Alternative D's contribution to those impacts would be reduced to less than cumulatively considerable.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative D and would still occur include the following:

- Significant and unavoidable impacts on a historic resource would be similar to the proposed project or variant due to the demolition of the theater building, and the impact would remain significant and unavoidable with mitigation.
- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative D include impacts related to: archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

As indicated in Table 5-2, p. 5-18, Alternative D would meet project objectives 10 and 13, and would partially meet many of the project objectives. Alternative D would redevelop the project site with a mix of residential, retail sales and services, and institutional uses. However, the number of dwelling units would be reduced by approximately 45 percent, retail sales and services by 66 percent, and institutional uses by 40 percent compared to the proposed project. Alternative D would not include new open space, non-retail sales and service, and hotel uses. In addition, this alternative would not include the realignment of 20th Avenue to create a new retail-centric corridor, or Streets A and B; however, the existing streets would be designed in accordance with the Better Streets Plan. Alternative D would therefore partially meet objectives 1 through 5 and 12 due to the reduced mix of land uses. Alternative D would not realign 20th Avenue; therefore, it would not meet objectives 6, 7, and 11 because retail uses would be provided along 20th Avenue to a lesser extent than the proposed project or alternative. This alternative also would not meet objectives 8 and 9, which emphasize new open spaces, retail, non-retail, and hotel uses. The financial feasibility of Alternative D is unknown.

ALTERNATIVE E: REDUCED DENSITY ALTERNATIVE

Alternative E would substantially lessen the severity of seven significant and unavoidable impact identified for the proposed project or variant, reducing it from significant and unavoidable with mitigation to less than significant with mitigation or less than significant:

- Significant and unavoidable impacts related to combined construction and operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable impacts related to operational criteria air pollutant emissions would be reduced to less than significant with mitigation.
- Significant and unavoidable project-level and cumulative wind hazards would be reduced to less than significant.
- Significant and unavoidable full buildout wind hazards would be reduced to less than significant.
- Significant and unavoidable cumulative wind hazards would be reduced to less than significant.
- Significant and unavoidable project-level impacts related to transit delay would be reduced to less than significant.
- Significant and unavoidable cumulative transit delay impacts would still occur, but Alternative E's contribution to those impacts would be reduced to less than cumulatively considerable.

Significant and unavoidable impacts identified for the proposed project or variant that would not be substantially reduced under Alternative D and would still occur include the following:

- Significant and unavoidable impacts on a historic resource would be similar to the proposed project or variant due to the demolition of the theater building, and the impact would remain significant and unavoidable with mitigation.
- Significant and unavoidable project and cumulative construction-related increases in ambient noise levels to sensitive receptors would be similar to those of the proposed project or variant because the construction program, proximity to sensitive receptors, and construction phasing would be similar. Noise levels would still be above thresholds and the impact would remain significant and unavoidable even with mitigation.

Significant impacts that could be mitigated to less than significant that were identified for the proposed project or variant would still apply to Alternative E include impacts related to: archeological resources and human remains; tribal cultural resources; project-level and cumulative transportation construction impacts; project-level and cumulative loading impacts; operational noise levels of stationary equipment; operational noise levels related to events that include outdoor amplified sound; Clean Air Plan consistency; project-level and cumulative health risk impacts; and paleontological resources.

As indicated in Table 5-2, p. 5-18, Alternative E would meet most of the project objectives including redeveloping underutilized portions of the site to create a new neighborhood (objective 1), prioritizing residential uses in the northwest corner of the project site (objective 4), adding new residents, linking the retail-centric heart of the project to existing and proposed adjacent residential areas (objective 6), concentrating a variety of retail, restaurant, and commercial uses around the existing shopping center and new 20th Avenue corridor (objective 7), space to accommodate commercial uses (objective 8), providing active public gathering spaces (objective 9), building adequate parking and loading access (objective 10),

creating a circulation and transportation system (objective 11), improving infrastructure at the project site (objective 12), and building a neighborhood resilient to sea level rise and earthquakes and demonstrate sustainable development (objective 13).

Alternative E would have 1,172 fewer residential units than the proposed project but would still increase the city's housing supply and contribute towards the City's housing goals, but to a lesser extent. Therefore, Alternative E would partially meet objectives 2, 3, and 5. Overall, Alternative E would meet most of the project objectives, but to a lesser degree than the proposed project or variant given that Alternative E would not maximize the number of housing units and would provide less retail sales and service and institutional uses. The financial feasibility of Alternative E is unknown.

5.D.2 Environmentally Superior Alternative

The CEQA Guidelines section 15126.6(e) requires the identification of an environmentally superior alternative to the proposed project or variant. If the No Project Alternative is environmentally superior, then the EIR must identify another environmentally superior alternative from among the alternatives evaluated. Based on the analysis and comparison of the impacts of the alternatives presented above, the No Project Alternative would be the environmentally superior alternative because it would result in no impacts to all resources. While the No Project Alternative would offer environmental advantage over the proposed project or variant, CEQA Guidelines section 15126.6(e)(2) provides that if the "no project" alternative is the environmentally superior alternative, the EIR should also identify an environmentally superior alternative among the other alternatives. Beyond the No Project Alternative, Alternative E, Reduced Density Alternative, is considered the environmentally superior alternative. Alternative E would avoid the significant and unavoidable impacts related to air quality, wind, and project-level transit delay, and would reduce the contribution to cumulative transit delay to a less-than-cumulatively considerable level.

5.E Alternatives Considered but Rejected

Potential project alternatives were considered as part of the alternatives screening process for this EIR. As stated in CEQA Guidelines section 15126.6(f)(1), factors that may be considered when a lead agency is assessing the feasibility include:

> *… site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.*

Potential alternatives were identified from review of scoping comments received following issuance of the Notice of Preparation. The alternatives considered but rejected and the reasons they have been rejected from further analysis are described below.

5.E.1 Alternatives Identified during Scoping

During the scoping process for the EIR, individuals raised concerns regarding the need to consider alternatives to the proposed project or variant as summarized in Chapter 1, Table 1-1, p. 1-4. The concepts raised during scoping included (1) an alternative that would not require a change to the existing height limitations of the

zoning code; and (2) increased density. The first concept is addressed under Alternative D, Code Compliant Alternative. The second concept of a higher density alternative was considered but rejected, as discussed below.

5.E.2 Alternatives Considered but Rejected

OFFSITE ALTERNATIVE

CEQA Guidelines section 15126.6(f)(2) states that alternative locations should be considered if they would avoid or substantially lessen any of the significant effects. While an alternative location might lessen or avoid the impacts associated with demolition of a historic resource, transit delay impacts, wind, noise and vibration, it was rejected from further consideration because the project objectives are specific to the Stonestown Galleria shopping mall site. Furthermore, an alternate location was rejected because the project sponsor does not have control of a comparable site of sufficient size to develop a mixed-use project that would achieve the project objectives.

HIGHER-DENSITY ALTERNATIVE

A higher-density alternative with more housing units was raised during the scoping process for this EIR. A higher density alternative could meet all project objectives; however, this alternative would not address any of the significant and unavoidable environmental impacts. Therefore, this alternative was rejected from further consideration.

DESIGN ALTERNATIVES

As part of project development, the project sponsor considered numerous design and layout concepts for the project site. Some examples include different locations for the five taller buildings, leaving 20th Avenue in its current curved configuration, different open space plans, and various building heights. As none of these concepts were developed for the purpose of reducing significant environmental impacts, the planning department did not consider these preliminary design concepts as alternatives as part of the CEQA environmental review.

OTHER PRESERVATION ALTERNATIVES

A preservation alternatives analysis report was prepared and presents full and partial preservation alternatives that were taken to the HPC for their review and comment, as discussed above. The report identifies a full and partial preservation alternative upon which Alternatives B and C are based. The following preservation alternatives, some of which included input from the HPC, were considered but rejected for the reasons presented below:

- **Relocating the Historic Resource.** This alternative considered the possibility of relocating the theater building. The relationship of the courtyard to the building is a significant element of the New Formalist style. This concept was rejected due to the building's relationship to its sunken courtyard, which is not feasible to disassemble or move. In addition, this alternative would not avoid or lessen the significant impact to the historic resource.
- **Constructing an Addition on Top of the Historic Resource.** This alternative considered the rehabilitation of the theater and constructing an addition on top of the building to recoup the loss of dwelling units based on recommendations by the HPC. This concept was rejected due to the extent of

changes to the historic resource that would be required to build on top of the structure. The structure of the theater building would not support any sizable addition. In order to erect an addition over the existing building, either the rear half of the building would need to be reconstructed with steel framing and an addition built on top of it, or, if an addition were located over the theater's lobby, installation of structural steel within the lobby would be required to support an addition overhead.[347] These alterations would create a substantial visual impact on the interior and exterior of the historic resource, altering its overall massing and impacting the historic lobby by disrupting its open quality with additional structural supports. This alternative was rejected from further consideration because it would not avoid or lessen the significant impact to the historic resource.

- **Two-Story Addition to the Rear of the Historic Lobby.** This alternative considered a partial preservation alternative that would retain the courtyard, arcade, theater lobby, and hyphen, while erecting a two-story addition similar in footprint to Block NW2 in Alternative C, Partial Preservation and Relocated Parking Alternative. This concept was rejected because a two-story residential addition to the theater would not provide sufficient residential units to meet the project sponsor's objectives for the project.
- **Various Massing and Location Studies of the Adjacent Proposed Residential Buildings (Blocks NW1 and NW2) to Allow for the Retention of the Historic Resource.** Several options exploring different footprints, placements, and massings of Blocks NW1 and NW3 were considered that would allow the theater to remain in its historic location while attaining the desired number of residential units in the northwest residential area. However, these options were rejected as infeasible for the reasons discussed below.

  The project sponsor did not propose residential towers on the northwest portion of the site due to concerns expressed by community members and the desire to implement a design approach that transitions heights downward in the areas closest to the surrounding lower-scale neighborhoods. Additionally, the proposed project's building heights within the northwest residential area were designed to minimize shadow and wind impacts to the adjacent Rolph Nichol Jr. Playground. Based on preliminary wind impact analyses, additional height in the northwest residential area could exacerbate wind impacts on the west side of the project site.

  An additional site constraint that is specific to the northwest residential area is a significant change in grade at the west side of the parcel. This grade change limits the size and placement of the proposed NW1 building, making it infeasible to add additional units to this building by expanding its footprint. Therefore, these concepts were rejected as increasing the height and/or massing of either or both Blocks NW1 and NW2 would not be feasible due to a combination of the above factors.
- **Non-Residential Uses for the Historic Theater Building.** This alternative considered non-residential uses of the theater building, as recommended by the HPC. Retaining and rehabilitating the building for its historic use as a movie theater would not be appropriate or feasible, as a new multi-screen movie theater is already present within the larger Stonestown Galleria shopping center and the presence of an additional theater is therefore not viable and would be removed from the retail core of the shopping center. Other non-residential uses were also considered because they could potentially avoid altering the massing and requiring fenestration interventions into the smooth unadorned surfaces of the auditorium spaces that are character defining features of the historic resource. The retention of the building as an events auditorium was also considered; however, such a use is not part of the proposed

[347] Gemmill, Michael, Principal, Nabih Youssef Structural Engineers, e-mail correspondence with Julia Adams, Development Manager, Brookfield Properties Development, December 8, 2022.

program of the site and would not complement the proposed adjacent residential buildings. The possibility of a community center was considered; however, such uses are already available in adjacent neighborhoods and such a use is not part of the proposed program of the site.

The conversion of the building to a commercial gym was also considered, as other historic theaters have demonstrated the precedent of adapting these spaces for gyms, which historically have less robust requirements for light, outside air, and fenestration. However, like the theater use, the larger shopping center already contains a large commercial gym facility and the market desire for greater ventilation and fenestration in gym spaces post-COVID could result in the need for fenestration interventions into the smooth unadorned walls of the auditorium massing.

Implementation of other commercial uses in the historic theater building would also result in conflicts with the proposed project or variant's programming. Specifically, commercial uses would impact the project sponsor's objectives of concentrating new commercial uses along the new 20th Avenue retail corridor and existing shopping center, which would create the retail-centric heart of the project site and optimize foot traffic for retail tenants.

For these reasons, the above-discussed non-residential uses for the historic theatre were considered but rejected and the adaptation of the historic theater building to residential use was determined to best complement the proposed character of the northwest residential area. Additionally, because Alternative B, Full Preservation Alternative, already explores an alternative that reduces impacts to the historic theater building to a less-than-significant level, a preservation alternative that considers a non-residential use of the theater building would be considerably similar to Alternative B and was therefore not considered further. The planning department determined that Alternative B, Full Preservation Alternative, and Alternative C, Partial Preservation and Relocated Parking Alternative, would adequately represent the range of environmental impacts that could be expected under preservation scenarios while meeting the project sponsor's housing objectives.

- **Changing the Ratio of Residential Housing Types to Accommodate More Units.** An alternative considering the conversion of some of the larger units (two- or three-bedroom apartments) into smaller units (one-bedroom or studio apartments) was discussed as a method to increase the unit count while retaining the existing theater building. Planning code section 207.7 requires new development to provide a minimum number of two- and three-bedroom units because of concerns about insufficient family-sized housing production. Therefore, increasing the residential unit count through a reduction of the number of family-sized units in favor of more, but smaller units across the site would run counter to the planning code requirement, would not respond to the market demand in the surrounding neighborhood, and would not meet the project sponsor's objectives of including a mix of housing types that accommodate different households.
- **Providing Alternative Locations Within the Larger Project Site to Recoup Lost Housing Units Within the Northwest Residential Area.** This alternative considered the possibility of adding housing units in other areas of the project site outside of the northwest residential area to recoup the lost housing units from not developing Block NW2.

  Due to site limitations, including existing retail parking obligations, the creation of a transitional zone as an urban design feature, required setbacks and fire code obligations for residential construction, and requirements around open space, the possibility of finding alternative locations for residential housing within the larger project site were investigated and ultimately rejected. Accommodating additional residential uses outside of the northwest residential area was considered but rejected as infeasible for the reasons discussed below.

Options to increase the height of any of the other ten residential buildings within the larger project site as a possible method to recoup the housing units lost with the retention of the theater building were also considered. As part of the larger design approach to the site—and to respond to community feedback and potential shadow impacts to the Rolph Nichols Jr. Playground—the four residential towers were designed to be located away from the northwest area. Five sites are considered as possible tower locations (W3, W4, S1, S2, and S3) under the proposed project or variant, but only four towers would be constructed. All of these tower sites would have a podium section (90 feet tall) and a tower section (150 or 190 feet tall, based on site requirements) as part of the urban design of the development, ensuring adequate setbacks and varied volumes, while avoiding construction of large rectilinear blocks of high-density construction. For this reason, only portions of the four tallest residential buildings would reach the maximum height, while the podium levels would align with the mid-rise heights of the larger site. The floor plates of the four towers are sized for efficiency of the building plan and unit layout, and to ensure the urban design standards of the site are being realized. For this reason, expanding the footprint of the towers, or adding height to any of the ten residential buildings on the project site located outside of the northwest residential area, was rejected as a project alternative.

CHAPTER 6
REPORT PREPARERS

6.A San Francisco Planning Department

Environmental Planning Division
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

- Environmental Review Officer: Lisa Gibson
- Deputy Director of Environmental Planning: Devyani Jain
- Principal Environmental Planner: Rick Cooper
- Senior Environmental Planner: Florentina Craciun
- Senior Environmental Planner: Sherie George
- Principal Transportation Planner: Wade Wietgrefe
- Principal Noise Planner: Chelsea Fordham
- Principal Air Quality Planner: Jessica Range
- CEQA Cultural Resources Team Manager: Allison Vanderslice
- Senior Transportation Planner: Kei Zushi
- Senior Noise Planner: Alana Callagy
- Senior Air Quality Planner: Josh Pollak
- Senior Preservation Planner: Chris Wendt
- Senior Wind and Shadow Planner: Michael Li

6.B Office of the City Attorney

City Hall, Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

- Deputy City Attorney: Austin Yang
- Deputy City Attorney: Robb Kapla
- Deputy City Attorney: Giulia Gualco-Nelson

6.C Environmental Consultants

Environmental Science Associates (Prime Environmental Consultant)
550 Kearny Street, Suite 800
San Francisco, CA 94108

- Project Director: Eryn Brennan
- Project Manager: Susan Yogi
- Deputy Project Manager: Steve Smith

ESA Project Team

- Becky Urbano
- Brian Schuster
- Cheri Velzy
- Chris Sanchez
- Chris Sanchez
- Elliott Schwimmer
- Eryn Pimentel
- Heidi Koenig
- James Songco
- Joel Miller
- Johanna Kahn
- Karen Lancelle
- Karl Heisler
- Sarah Patterson
- Shadde Rosenblum

Fastcast (Shadow)
34 Corte Madera Avenue
Mill Valley, CA 94941

- Principal: Adam Noble

Kittelson & Associates (Transportation)
155 Grand Avenue, Suite 505
Oakland, CA 94612

- Senior Engineering Associate: Mike Alston
- Associate Planner: Amanda Leahy
- Transportation Analyst: Doreen Gui

Page & Turnbull (Historic Architectural Resources)
170 Maiden Lane, 5th Floor
San Francisco, CA 94108

- Architectural Historian: Barrett Reiter
- Senior Architectural Historian: Christina Dikas
- Principal: Ruth Todd

Ramboll (Air Quality)
201 California Street, #1200
San Francisco, CA 94111

- Managing Consultant: Sarah Manzano
- Principal: Michael Keinath

RWDI (Wind)
600 Southgate Drive
Guelph, Ontario, Canada N1G 4P6

- Senior Project Manager: Dan Bacon
- Technical Coordinator: Jennifer Shoniker
- Principal Technical Director: Hanqing Wu, Ph. D.

6.D Project Sponsor

Brookfield Properties Development
685 Market Street
San Francisco, CA 94105

- Senior Development Director: Courtney Pash
- Development Manager: Julia Adams

6.E Project Sponsor's Legal Counsel

Gibson, Dunn & Crutcher LLP
555 Mission Street
San Francisco, CA 94105-0921

- Mary Murphy, Partner
- Sara Ghalandari, Of Counsel

INTENTIONALLY BLANK

Stonestown Development Project

San Francisco Planning
Case No. **2021-012028ENV**
State Clearinghouse No. 2022040571

Draft EIR Publication Date:	December 14, 2022
Draft EIR Public Hearing Date:	February 9, 2023
Draft EIR Public Comment Period:	December 14, 2022–February 13, 2023
Final EIR Certification Hearing Date:	May 9, 2024

San Francisco Planning

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

MEMORANDUM

Date:	April 24, 2024
Case No.:	**2021-012028ENV**
Project Title:	**Stonestown Development Project**
To:	Members of the Planning Commission and Interested Parties
From:	Lisa Gibson, Environmental Review Officer
Re:	Attached Responses to Comments on Draft Environmental Impact Report for the Stonestown Development Project (Planning Department File No. 2021-012028ENV)

Attached for your review please find a copy of the responses to comments document for the draft environmental impact report (EIR) for the above-referenced project. This document, along with the draft EIR, will be before the planning commission for final EIR certification on May 9, 2024. The planning commission will receive public testimony on the final EIR certification at the May 9, 2024, hearing. Please note that the public review period for the draft EIR ended on February 13, 2023. Comments received after the close of the public review period or at the final EIR certification hearing will not be responded to in writing. The agenda for the May 9, 2024, planning commission hearing showing the start time and order of items at the hearing will become available at https://sfplanning.org/hearings-cpc-grid, by close of business Friday, May 3, 2024.

The planning commission does not conduct a hearing to receive comments on the responses to comments document, and no such hearing is required by the California Environmental Quality Act. Interested parties, however, may always write to commission members or to the president of the commission at commissions.secretary@sfgov.org (preferred) or 49 South Van Ness Avenue, Suite 1400, and express an opinion on the responses to comments document, or the commission's decision to certify the Final EIR for this project.

This document, along with the draft EIR, constitute the final EIR. The draft EIR may be downloaded from https://sfplanning.org/environmental-review-documents. If you have any questions concerning the responses to comments document or the environmental review process, please contact Josh Pollak, EIR coordinator, at CPC.Stonestown@sfgov.org or 628.652.7493.

Thank you for your interest in this project and your consideration of this matter.

Stonestown Development Project

San Francisco Planning
Case No. **2021-012028ENV**
State Clearinghouse No. 2022040571

Draft EIR Publication Date:	December 14, 2022
Draft EIR Public Hearing Date:	February 9, 2023
Draft EIR Public Comment Period:	December 14, 2022–February 13, 2023
Final EIR Certification Hearing Date:	May 9, 2024

San Francisco Planning

CONTENTS

Chapter 1 Introduction 1-1
1.A Purpose of the Responses to Comments Document 1-1
1.B Environmental Review Process 1-1
1.B.1 Notice of Preparation 1-1
1.B.2 Draft EIR 1-2
1.B.3 Responses to Comments Document and Final EIR 1-2
1.C Document Organization 1-3
Chapter 2 Revisions to the Project Description 2-1
2.A Introduction 2-1
2.B Summary of Revisions to the Proposed Project 2-2
2.C Environmental Analysis of the Revisions to the Proposed Project 2-16
2.D Summary of Revisions to the Draft EIR Variant 2-16
2.D.1 Introduction 2-16
2.D.2 Comparison of Draft EIR Variant and the Revised Variant 2-17
2.E Environmental Analysis of the Revised Variant 2-22
2.E.1 Historic Architectural Resources 2-22
2.E.2 Transportation and Circulation 2-23
2.E.3 Air Quality 2-32
2.E.4 Noise and Vibration 2-49
2.E.5 Wind 2-56
2.E.6 Shadow 2-58
2.E.7 Utilities and Service Systems 2-61
2.E.8 Alternatives 2-66
2.F Overall Conclusion of the Potential Environmental Impacts of the Revised Variant 2-66
Chapter 3 List of Persons Commenting 3-1
3.A Public Agencies and Commissions and Individuals Commenting on the Draft EIR 3-1
Chapter 4 Comments and Responses 4-1
4.A Introduction 4-1
4.B Project Description [PD] 4-2
4.B.1 Comment PD-1: Project Description Comments/Questions 4-2
4.C Cumulative Analysis [CU] 4-12
4.C.1 Comment CU-1: Cumulative Projects 4-12
4.D Historic Architectural Resources [CR] 4-14
4.D.1 Comment CR-1: Historic Architectural Resources Analysis 4-14
4.D.2 Comment CR-2: Original Purpose of the Stonestown Mall 4-18
4.E Transportation and Circulation [TR] 4-18
4.E.1 Comment TR-1: VMT Analysis 4-19
4.E.2 Comment TR-2: Pedestrian and Bicycle Safety Impacts 4-21
4.E.3 Comment TR-3: Transit Impacts 4-27
4.E.4 Comment TR-4: Transportation Analysis Methodology 4-34
4.E.5 Comment TR-5: Construction 4-40
4.E.6 Comment TR-6: Characterization of 20th Avenue 4-41

4.F Noise and Vibration [NO] 4-43
4.F.1 Comment NO-1: Construction and Operational Noise 4-43
4.F.2 Comment NO-2: Noise Mitigation Measures 4-48
4.F.3 Comment NO-3: Construction Vibration Impacts 4-49
4.G Air Quality [AQ] 4-51
4.G.1 Comment AQ-1: Air Quality Analysis 4-51
4.H Shadow [SH] 4-57
4.H.1 Comment SH-1: Shadow Impacts 4-58
4.I Utilities and Service Systems [UT] 4-61
4.I.1 Comment UT-1: Water Supply Analysis 4-61
4.I.2 Comment UT-2: Utilities Infrastructure 4-69
4.I.3 Comment UT-3: Increase in Trash Impacts 4-74
4.J Other CEQA Considerations [OC] 4-75
4.J.1 Comment OC-1: Areas of Controversy and Unresolved Issues 4-75
4.K Alternatives [AL] 4-76
4.K.1 Comment AL-1: Preservation Alternatives 4-76
4.K.2 Comment AL-2: Partial Preservation Alternative Transportation Analysis 4-80
4.K.3 Comment AL-3: Alternatives Comparison Table 4-82
4.K.4 Comment AL-4: Adequacy and Reasonable Range of Alternatives 4-83
4.L Plans and Policies [PP] 4-89
4.L.1 Comment PP-1: General Plan Consistency and Zoning Controls 4-89
4.M Aesthetics [AE] 4-92
4.M.1 Comment AE-1: Aesthetics 4-92
4.N Greenhouse Gas Emissions [GHG] 4-96
4.N.1 Comment GHG-1: Greenhouse Gas Emissions Analysis 4-96
4.O Recreation [RE] 4-99
4.O.1 Comment RE-1: Park and Open Space Impacts 4-99
4.P Public Services [PS] 4-102
4.P.1 Comment PS-1: Increase in Crime and Demand for Public Services 4-102
4.P.2 Comment PS-2: Impacts on School Facilities 4-108
4.Q Biological Resources [BI] 4-109
4.Q.1 Comment BI-1: Biological Resources Impacts 4-109
4.R Geology and Soils [GE] 4-110
4.R.1 Comment GE-1: Geology and Soils Impacts 4-110
4.S Hazards and Hazardous Materials [HZ] 4-112
4.S.1 Comment HZ-1: Increase in Exposure to Hazardous Materials 4-112
4.T General Comments(CEQA) [GC-CEQA] 4-114
4.T.1 Comment GC-CEQA-1: Support for the Proposed Project and EIR 4-114
4.T.2 Comment GC-CEQA-2: Public Outreach 4-119
4.T.3 Comment GC-CEQA-3: NOP Noticing, Scoping, Public Review of EIR, and Administrative Record 4-121
4.T.4 Comment GC-CEQA-4: Draft EIR is Inadequate 4-124
4.T.5 Comment GC-CEQA-5: Use of Initial Study to Focus EIR 4-126
4.T.6 Comment GC-CEQA-6: Caltrans Coordination and Permits 4-127
4.U General Comments (Non-CEQA) [GC-NON-CEQA] 4-127
4.U.1 Comment GC-NON-CEQA-1: Uses for the Project and Variant 4-128

4.U.2 Comment GC-NON-CEQA-2: Affordable Housing 4-129
4.U.3 Comment CG-NON-CEQA-3: Sustainability Plan 4-130
4.U.4 Comment CG-NON-CEQA-4: Building Heights 4-131
4.U.5 Comment GC-NON-CEQA-5: Non-CEQA Transportation Impacts 4-133
4.U.6 Comment GC-NON-CEQA-6: Effects from Other Projects 4-139
4.U.7 Comment GC-NON-CEQA-7: Opposition to the Proposed Project 4-140
4.U.8 Comment GC-NON-CEQA-8: Design of the Proposed Project 4-143
4.U.9 Comment GC-NON-CEQA-9: San Francisco Designation as Urban Heat Island 4-144
4.U.10 Comment GC-NON-CEQA-10: ParkMerced Ownership 4-145
4.U.11 Comment GC-NON-CEQA-11: Economic Feasibility and Workforce Considerations 4-146

Chapter 5 Draft EIR Revisions 5-1

5.A Revisions to Chapter S, Summary 5-1
5.B Revisions to Chapter 1, Introduction 5-6
5.C Revisions to Chapter 2, Project Description 5-8
5.D Revisions to Chapter 3, Introduction to the Analysis 5-13
5.E Revisions to Section 3.A, Historic Architectural Resources 5-14
5.F Revisions to Section 3.B, Transportation and Circulation 5-15
5.G Revisions to Section 3.D, Air Quality 5-19
5.H Revisions to Section 3.E, Wind 5-19
5.I Revisions to Section 3.F, Shadow 5-21
5.J Revisions to Section 3.G, Utilities and Service Systems 5-21
5.K Revisions to Chapter 5, Alternatives 5-25
5.L Revisions to Initial Study Section E.1, Land Use and Planning 5-25
5.M Revisions to Initial Study Section E.8, Greenhouse Gas Emissions 5-26
5.N Revisions to Figures 5-30
5.O Revisions to Appendices 5-52

Attachments

Attachment A Draft EIR Public Hearing Transcript
Attachment B Draft EIR Comment Letters and Emails
Attachment C Revised Variant Initial Study Topics Analysis
Attachment D Revised Variant Transportation Analysis Memorandum
Attachment E Revised Variant Air Quality and Health Risk Assessment Results
Attachment F CEQA Air Quality and Health Risk Assessment Methodology
Attachment G Revised Variant Wind Memorandum
Attachment H Revised Variant Shadow Memorandum
Attachment I Revised Variant Water Supply Assessment

RTC Figures

RTC Figure 2-1 Northwest Corner Changes 2-20
RTC Figure 2-2 Shadow Comparison between Draft EIR Variant and Revised Variant, Winter Solstice 2-60
RTC Figure 2-3 Draft EIR Variant and Revised Variant Shadow, October 18 (Day of Maximum Revised Variant Shadow; February 22 Similar) 2-62

RTC Tables

RTC Table 2-1 Draft EIR Variant Compared to the Revised Variant 2-18
RTC Table 2-2 Preliminary Estimated Construction Schedule for the Draft EIR Variant and the Revised Variant 2-22
RTC Table 2-3 Travel Demand by Mode for the Proposed Project, Draft EIR Variant, and Revised Variant 2-25
RTC Table 2-4 Vehicle Trips of the Proposed Project, Draft EIR Variant, and Revised Variant 2-26
RTC Table 2-5 Project-Level Transit Delay of the Proposed Project, Draft EIR Variant, and Revised Variant 2-29
RTC Table 2-6 Construction and Net New Interim Operational Emissions by Year for the Draft EIR Variant and Revised Variant 2-34
RTC Table 2-7 Mitigated Construction and Net New Interim Operational Emissions by Year for the Draft EIR Variant and Revised Variant 2-35
RTC Table 2-8 Net New Operational Emissions for the Draft EIR Variant and Revised Variant at Buildout 2-36
RTC Table 2-9 Net New Mitigated Operational Emissions for the Draft EIR Variant and Revised Variant at Buildout 2-38
RTC Table 2-10 Lifetime Excess Cancer Risk for the Draft EIR Variant and Revised Variant 2-44
RTC Table 2-11 Annual Average $PM_{2.5}$ Concentrations for the Draft EIR Variant and Revised Variant 2-45
RTC Table 2-12 Mitigated Lifetime Excess Cancer Risk for the Draft EIR Variant and Revised Variant 2-46
RTC Table 2-13 Mitigated Annual Average $PM_{2.5}$ Concentrations for the Draft EIR Variant and Revised Variant 2-47
RTC Table 2-14 P.M. Peak-Hour Traffic Noise Level increases of the Draft EIR Variant and Revised Variant in the Vicinity of the Project 2-52
RTC Table 2-15 Draft EIR and Revised Variant Water Demand 2-63
RTC Table 3-1 Persons Commenting on the Draft EIR 3-1
RTC Table 4-1 Comment Organization 4-1

CHAPTER 1
INTRODUCTION

1.A Purpose of the Responses to Comments Document

The purpose of this responses to comments (RTC) document is to present comments received on the draft environmental impact report (draft EIR) for the proposed Stonestown Development Project (proposed project), to respond in writing to comments on environmental issues, and to revise the draft EIR as necessary to provide additional clarity. Pursuant to the California Environmental Quality Act (CEQA) section 21091(d)(2)(A) and (B), the San Francisco Planning Department (planning department) has considered the comments received on the draft EIR, evaluated the issues raised, and is providing written responses that address each substantive environmental issue that was raised by commenters. In accordance with CEQA, the responses to comments focus on addressing physical environmental effects associated with the proposed project. Such effects include physical impacts or changes attributable to the proposed project.

None of the comments received provides new information that warrants recirculation of the draft EIR. The comments do not identify new significant impacts or a substantial increase in the severity of previously identified impacts. Furthermore, they do not identify or result in feasible project alternatives or mitigation measures that are considerably different from those analyzed in the draft EIR and/or that the project sponsor did not agree to implement. In addition, no significant new information that warrants recirculation of the draft EIR is reflected in the changes to the proposed project, variant, or revised variant either staff initiated or as response to comments, as described in Section 2.E, Environmental Analysis of the Revised Variant, p. 2-16.

The draft EIR together with this RTC document constitutes the final EIR for the proposed project in fulfillment of CEQA requirements and consistent with CEQA Guidelines section 15132. The final EIR was prepared in compliance with CEQA, including the CEQA Guidelines and San Francisco Administrative Code chapter 31. It is an informational document for use by (1) governmental agencies (such as the City and County of San Francisco) and the public to aid in the planning and decision-making process by disclosing the physical environmental effects of the project and identifying possible ways of reducing or avoiding the potentially significant impacts and (2) the San Francisco Planning Commission (planning commission) and other City entities (such as the San Francisco Board of Supervisors), where applicable, prior to their decisions to approve, disapprove, or modify the proposed project. If the planning commission and other City entities approve the proposed project, they would be required to adopt CEQA findings and a mitigation monitoring and reporting program (MMRP) to ensure that mitigation measures identified in the final EIR are implemented.

1.B Environmental Review Process

1.B.1 Notice of Preparation

The planning department, as lead agency responsible for administering the environmental review of projects within the City and County of San Francisco under CEQA, published a notice of preparation (NOP) of an EIR on April 27, 2022 (included as Appendix A in the draft EIR), to inform agencies and the general public that the draft EIR would be prepared based upon the criteria of CEQA Guidelines sections 15064 (Determining

Significant Effects) and 15065 (Mandatory Findings of Significance). A notice of availability of the NOP and the NOP were sent to the State Clearinghouse, governmental agencies, organizations, and persons who may have an interest in the proposed project. An NOP scoping meeting was held remotely on May 9, 2022, to explain the environmental review process for the proposed project and variant and to provide an opportunity to take public comment and concerns related to the proposed project or variant's environmental issues. A subsequent video of the NOP presentation and scoping meeting was posted on the planning department's webpage. The NOP announcement was also placed in a newspaper of general circulation in the project area.

1.B.2 Draft EIR

The planning department prepared the draft EIR for the proposed project in accordance with CEQA, the CEQA Guidelines, and San Francisco Administrative Code chapter 31. The draft EIR was published on December 14, 2022. An initial study was attached to the draft EIR (Appendix B). The draft EIR was circulated for a 60-day public review and comment period, which began on December 15, 2022, and ended on February 13, 2023.

The planning department distributed paper copies of the notice of public hearing and availability of the draft EIR to relevant state and regional agencies, organizations, and persons interested in the proposed project, including those listed on the planning department's standard distribution lists. The planning department also distributed the notice electronically, using email, to recipients who had provided email addresses; published notification of its availability in a newspaper of general circulation in San Francisco; and posted the Notice of Public Hearing and Availability of the EIR at the County Clerk's office and on the project site. Paper copies of the draft EIR were provided for public review at the San Francisco Permit Center, 49 South Van Ness Avenue, 2nd Floor, San Francisco, CA 94103. Electronic copies of the draft EIR were made available for review or download on the planning department's "Environmental Review Documents" webpage:

https://sfplanning.org/environmental-review-documents

During the draft EIR public review period, the planning department received written comments from four agencies, seven organizations, and 60 individuals.

During the public review period, the planning commission conducted a public hearing to receive oral comments on the draft EIR on February 9, 2023. Due to the COVID-19 emergency, this hearing was held in a hybrid format that included both in-person and remote attendees. A court reporter attended the remote public hearing to transcribe the oral comments verbatim and provide a written transcript (Attachment A).

Attachment B of this RTC document includes copies of the comment letters and emails submitted to the planning department on the draft EIR and at the public hearing.

1.B.3 Responses to Comments Document and Final EIR

The comments received during the public review period are the subject of this RTC document, which addresses all substantive written and oral comments on the draft EIR. Under CEQA Guidelines section 15201, members of the public may comment on any aspect of the project. Furthermore, CEQA Guidelines section 15204(a) states that the focus of public review should be on "the sufficiency of the [draft EIR] in identifying and analyzing the possible impacts on the environment and ways in which the significant effects

of the project might be avoided or mitigated." In addition, "when responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR." As discussed above, CEQA Guidelines section 15088 specifies that the lead agency is required to respond to comments that raise significant environmental issues during the public review period. Therefore, this RTC document is focused on the sufficiency and adequacy of the draft EIR with respect to disclosing the significance of the physical environmental impacts of the proposed project evaluated in the draft EIR.

The planning department distributed this RTC document for review to the planning commission, as well as to persons who commented on the draft EIR. The planning commission will consider the adequacy of the final EIR, consisting of the draft EIR and the RTC document, with respect to complying with the requirements of CEQA, the CEQA Guidelines, and San Francisco Administrative Code chapter 31. If the San Francisco Planning Commission finds that the final EIR is adequate, accurate, complete and in compliance with CEQA requirements, it will certify the final EIR and then consider the associated Mitigation Monitoring and Reporting Plan as well as the requested approvals for the proposed project.

Consistent with CEQA Guidelines section 15097, the MMRP is designed to ensure implementation of the mitigation measures identified in the final EIR and adopted by decision-makers to mitigate or avoid the proposed project's significant environmental effects. CEQA also requires the adoption of findings prior to approval of a project for which an EIR was certified. Because the draft EIR identified significant adverse impacts that cannot be mitigated to a less-than-significant level, the planning commission must adopt findings that include a statement of overriding considerations for those significant and unavoidable impacts, should they approve the proposed project (CEQA Guidelines section 15093(b)). The project sponsor is required to implement the MMRP as a condition of project approval.

1.C Document Organization

This RTC document consists of the following sections and attachments, as described below:

- **Chapter 1, Introduction**, discusses the purpose of the RTC document, the environmental review process for the EIR, and the organization of the RTC document.
- **Chapter 2, Revisions to the Project Description**, presents changes to the description of the proposed project and variant, as described in draft EIR Chapter 2. The outlined changes were initiated by the project sponsor since publication of the draft EIR in response to public and agency comments. Chapter 2 analyzes and concludes that these revisions and clarifications would not result in any new environmental impacts not already discussed in the draft EIR or a substantial increase in the severity of previously identified significant environmental impacts.
- **Chapter 3, List of Persons Commenting**, presents the names of persons who provided comments on the draft EIR during the public comment period. The list is organized into the following groups: public agencies and commissions, organizations, and individuals.
- **Chapter 4, Comments and Responses**, presents substantive comments, excerpted verbatim from a transcript of the hybrid planning commission public hearing and written correspondence. The complete transcript as well as the letters and emails with the comments are provided in Attachments A and B of this RTC document. The comments and responses in this section are organized by topic and, where appropriate, by subtopic, including the same environmental topics addressed in Chapter 3 of the draft

EIR and Section E of the initial study. Following each comment or group of comments on a topic are the planning department's responses. The responses generally clarify the text in the draft EIR. In some instances, the responses may result in revisions or additions to the draft EIR. Text changes are shown as indented text, with deleted material shown as ~~strikethrough~~ text and new text double underlined.

- **Chapter 5, Draft EIR Revisions**, presents staff-initiated text changes to the draft EIR that were made by the planning department to update, correct, or clarify the text of the draft EIR. These changes do not result in significant new information with respect to the proposed project, including the level of significance of project impacts or any new significant impacts. Therefore, recirculation of the draft EIR, pursuant to CEQA Guidelines section 15088.5, is not required.
- **Attachments**
  - Attachment A: Draft EIR Public Hearing Transcript
  - Attachment B: Draft EIR Comment Letters and Emails
  - Attachment C: Revised Variant Initial Study Topics Analysis
  - Attachment D: Revised Variant Transportation Analysis Memorandum
  - Attachment E: Revised Variant Air Quality and Health Risk Assessment Results
  - Attachment F: CEQA Air Quality and Health Risk Assessment Methodology
  - Attachment G: Revised Variant Wind Memorandum
  - Attachment H: Revised Variant Shadow Memorandum
  - Attachment I: Revised Variant Water Supply Assessment

CHAPTER 2
REVISIONS TO THE PROJECT DESCRIPTION

2.A Introduction

This chapter presents changes to the project description as well as to the draft EIR variant. The minor changes to the proposed project description are presented in Section 2.B below. In addition, and in response to public and agency comments, the project sponsor-initiated revisions to the Draft EIR Variant and are presented in Section 2.D. As such, this chapter summarizes these revisions, describes updates to the text of the draft EIR (deletions are shown in ~~strikethrough~~; new text is double-underlined), and describes the environmental impacts of the revisions, if any. Draft EIR text revisions are presented in this chapter only where they were made specifically in EIR Chapter 2. The strikethrough and double-underlined text are provided to show changes to the proposed project and variant descriptions in Sections 2.B and 2.C only. The analysis for the revised variant is presented separately, rather than as strikethrough or underline changes to the text of the draft EIR, for clarity and to provide a better comparison between the revised variant and the variant as analyzed in the draft EIR.

The revisions do not provide new information that would result in any new significant impacts that were not already identified in the draft EIR, nor would these changes increase the severity of any of the proposed project's impacts as identified in the draft EIR. Implementation of the mitigation measures identified in the draft EIR would still be required to reduce or avoid significant environmental impacts. In addition, no new mitigation measures beyond those already identified in the draft EIR would be required to mitigate the significant impacts of the proposed project or variant.

CEQA Guidelines section 15088.5 requires that an EIR be recirculated when "significant new information" is added to the EIR after publication of the draft EIR but before certification. The CEQA Guidelines state that information is "significant" if "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project proponents have declined to implement." Section 15088.5 further defines "significant new information" that triggers a requirement for recirculation as including, for example, identification of a new significant impact; a substantial increase in the severity of an impact (unless mitigation is adopted to reduce the impact to a less-than-significant level); or a new feasible alternative or mitigation measure that would lessen the environmental impacts of the proposed project, but that the project sponsor is unwilling to adopt. CEQA Guidelines section 15088.5(b) states that recirculation is not required if "the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR."

This chapter is organized into five sections as follows:

- Section 2.A, Introduction
- Section 2.B, Summary of Revisions to the Proposed Project
- Section 2.C, Environmental Analysis of the Revisions to the Proposed Project
- Section 2.D, Summary of Revisions to the Variant

- Section 2.E, Environmental Analysis of the Revised Variant
- Section 2.F, Overall Conclusion of the Potential Environmental Impacts of the Revised Variant

The impact analyses of the changes to the proposed project, presented in Section 2.C, specifically address the environmental effects for those project elements that differ from the draft EIR project description. Similarly, the impact analyses of the revised variant, presented in Section 2.E, specifically address the environmental effects of the revised variant components that differ from the draft EIR variant.

As described below, the revisions to the variant would not introduce new characteristics or substantially modify previously proposed characteristics that would result in any new significant impacts not already identified for the proposed project or variant studied in the draft EIR. These changes also would not increase the severity of any identified significant impacts.

The information presented in Sections 2.C and 2.E provides the supporting analysis that indicates the following overall conclusions for the proposed project changes and revised variant:

1. No new significant effects or substantially more severe significant effects would result beyond those identified in the draft EIR.
2. No new mitigation measures are identified that would be required to mitigate new or more severe significant impacts.
3. With implementation of the mitigation measures identified in the EIR, no substantial increase in the severity of an environmental impact would result.
4. No additional alternatives from those presented and analyzed in the draft EIR are needed to satisfy CEQA requirements for environmental review of the revised variant.

2.B Summary of Revisions to the Proposed Project

Since publication of the draft EIR, the project sponsor made refinements to the proposed project related to the transportation and circulation plan description has been updated to reflect (1) the project sponsor's decision to retain the separated westbound right-turn lane on Winston Drive at 20th Avenue; (2) minor changes to lane configurations and street widths; and (3) clarifications or corrections made in response to comments. These revisions also apply to the draft EIR variant as well as the revised variant described in Section 2.D, below. Revised project description figures are provided in RTC Section 5.M, Revisions to Figures, p. 5-21.

The first paragraph on draft EIR p. 2-1 was revised to incorporate the public right-of-way area into the overall description of the project site:

> The project sponsor (Brookfield Properties ~~Development~~) would redevelop the approximately 27 acres of surface parking and surrounding structures in the ~~41~~ 43-acre Stonestown Galleria shopping mall site into a master-planned, multi-phased, mixed-use community as detailed below.

The last sentence on draft EIR p. 2-1 and the first line on p. 2-2 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

> … The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned, and a new ~~straightened and converted to a~~ two-way connection to 19th Avenue (Street A) would be created between Blocks E1 and E3. …

The first paragraph of draft EIR Section 2.C, Project Location and Existing Site Characteristics, p. 2-3, was revised to clarify and include the public right-of-way area into the overall description of the project site:

> The proposed Stonestown Development Project is located on an approximately ~~41~~ 43-acre site in the Lakeshore area in southwest San Francisco (see Figure 2-1). The project site is generally bounded by San Francisco State University (SFSU) Campus to the south; Lowell High School, SFSU housing, and Buckingham Way to the west; Stonestown Family YMCA, commercial uses, and Eucalyptus Drive to the north; and 19th Avenue to the east (see Figure 2-2, p. 2-5). The project site is fully developed and comprises the 11-acre Stonestown Galleria, approximately 27 acres of surface parking lots and operational uses, a vacant building, ~~and~~ 3 acres of privately owned streets, and 2 acres of public right-of-way.

In response to comments, the text under draft EIR Section 2.D, Project Characteristics and Components, p. 2-7, was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

> … Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3 (shown as Street A in Figure 2-4). …

The private residential open space description was revised in Table 2-1, draft EIR p. 2-13 to be consistent with the proposed Special Use District as follows:

> Approximately ~~36~~ 27 sf per unit ~~if located on balcony, or approximately 48 sf per unit if commonly accessible to residents~~, or as otherwise refined in the planning code.

The proposed rezoning would also include portions of the site that are residential use districts. The proposed project would also create a Stonestown Special Sign District as part of the rezoning. Draft EIR Section 2.D.4, Design for Development, p. 2-14, was revised as follows:

> The proposed project would be rezoned from C-2 (Community Business Districts), RH-1(D) (Residential-House, One Family-Detached),and RM-1 (Residential-Mixed, Low Density) to a Special Use District (SUD) to establish land use controls and incorporate Design Standards and Guidelines (DSGs) to govern future development. In addition, the planning code would be amended to create a new Stonestown Special Sign District that would include the proposed project along with the existing Stonestown Galleria, and that would establish signage controls for the entire 43-acre site. …

In response to a comment, the first paragraph under Section 2.D.8, Transportation and Circulation Plan, draft EIR p. 2-20, was revised as follows for consistency:

> … The primary ~~and secondary~~ access point~~s~~ to the project site would continue to be at 19th Avenue at Winston Drive~~, and Eucalyptus Drive at 20th Avenue, respectively~~. Secondary access points would continue to be at Eucalyptus Drive and 20th Avenue, Winston Drive and Buckingham Way, and 19th Avenue and Buckingham Way. …

In response to comments, the last bullet point at the end of draft EIR p. 2-20 was revised to clarify the range of travel lanes on 20th Avenue:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened, would have two to four travel lanes (predominantly one lane in each direction)~~,~~ and would range between 25 and ~~35~~ 44 feet in width. Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (one through lane in each direction and one lane in each direction for right turns). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one lane in each direction and one lane dedicated for left turns). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 29-17**, pp. 2-24 to 2-27.

In response to a comment, the first bullet on draft EIR p. 2-28 was revised as follows to clarify the range of travel lanes on Buckingham Way:

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to ~~two~~ three lanes ~~(one lane in each direction)~~ along the frontage of Block E5 near the intersection with 20th Avenue. West of Block E5, Buckingham Way would remain three travel lanes. Along Block E5, Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left-turn lane and one dedicated right-turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right-turn lane and one dedicated left-turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left-turn lane and one dedicated right-turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.

In response to comments, the second bullet point on draft EIR p. 2-28 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be ~~straightened~~ abandoned and ~~converted to~~ a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3 (shown as Street A on Figure 2-12). The westbound approach at 20th Street along Street A would be a right-turn-only lane. Street A would be approximately ~~20~~22 feet wide.

The third bullet point on draft EIR p. 20–28 was revised as follows to reflect the project sponsor's decisions to retain the separated westbound right-turn lane:

- **Winston Drive.** Winston Drive between Block S3 and 20th Avenue would be reduced from four travel lanes (two lanes in each direction) to three lanes (two lanes westbound, one lane eastbound). The separated westbound right-turn lane on Winston Drive at 20th Avenue would be retained. The curved portion of Winston Drive at Block S3 would be converted to a 90-degree corner. The six travel lanes (three lanes in each direction) between 19th and 20th avenues would be maintained. Winston Drive would be 46 to 66 feet wide. Conceptual illustrative street sections for Winston Drive are shown in **Figure 2-19** and **Figure 2-20**, pp. 2-30 and 2-31.

The fourth bullet point on draft EIR p. 2-28 was revised as follows:

- **Street B.** A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4~~, however it~~ but would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately ~~26~~ 22 feet wide.

Draft EIR Figure 2-12 (p. 2-22), Figures 2-14 through 2-17 (pp. 2-24 to 2-27), Figures 2-18 through 2-20 (pp. 2-29 to 2-31), and Figure 2-21 (p. 2-33) were updated to reflect the transportation and circulation updates above and to clarify whether the roadways are public or private right-of-way.

The first sentence under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to include the Americans with Disabilities Act (ADA) pathway improvements through Rolph Nichol Jr. Playground.

> Pedestrian and bicycle access would be provided through the northwest portion of the project site, connecting to Rolph Nicol Jr. Playground as shown in Figure 2-21 and Figure 2-22, p. 2-34, respectively. Landscaping and two new Americans with Disabilities Act (ADA) pathway improvements would be included through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive.

The first sentence of the second paragraph under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to clarify the type of class IV bicycle facilities:

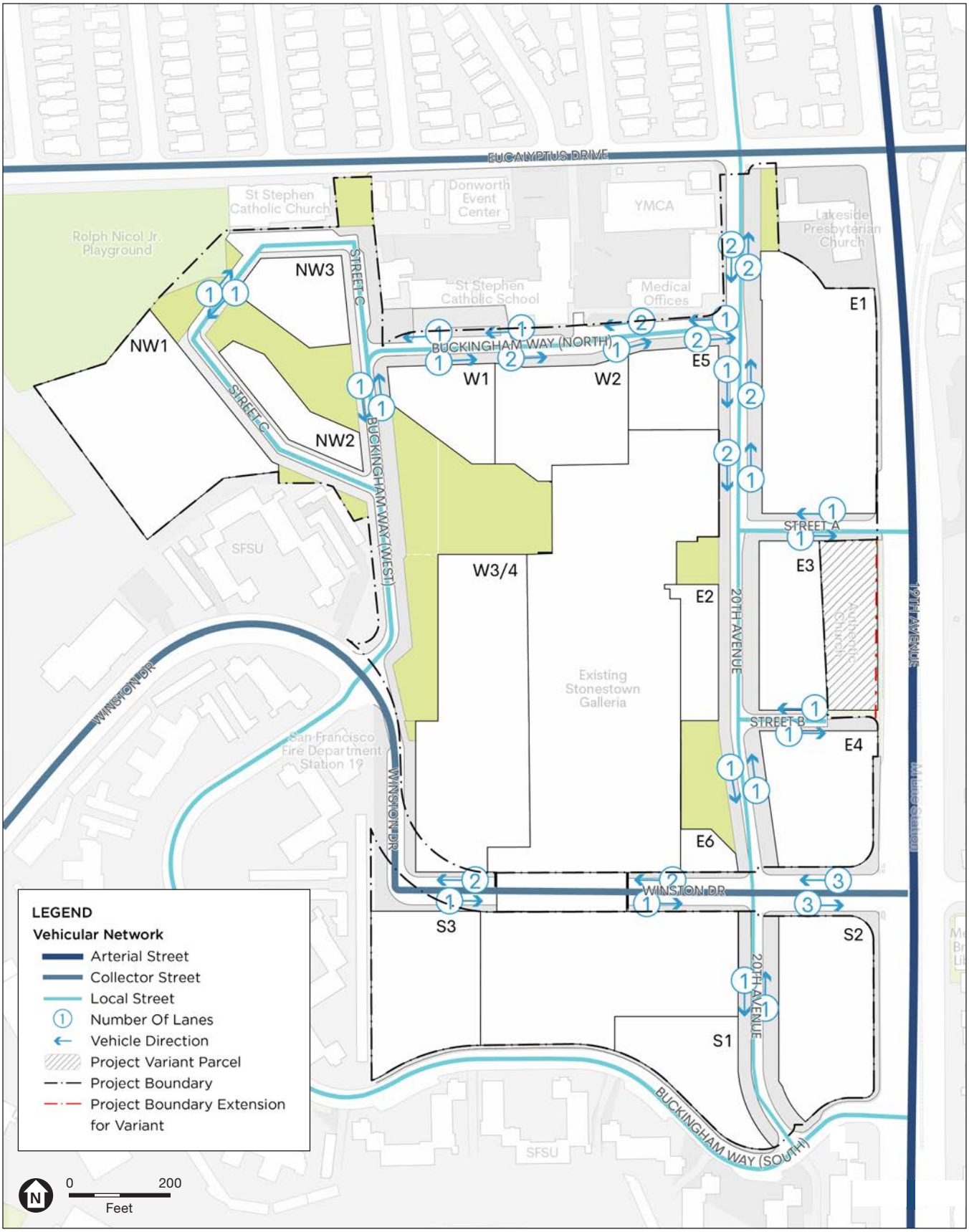
> Two-way (combined or separated) class IV bicycle facilities (protected bike lanes) are proposed on Buckingham Way, 20th Avenue, and Winston Drive.[17] …

The first bullet point on draft EIR p. 2-36 was revised to provide clarification regarding the recycled water system:

- **Recycled Water.** The project site is located within a designated recycled water use area, and the proposed project would ~~provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance~~ comply with San Francisco's Recycled Water Use Ordinance by producing and distributing non-potable water on-site and distributing it to uses within specific buildings or within the project site. The proposed recycled water system would be private and not connected to future City recycled water systems.

In response to a comment, the text on draft EIR p. 2-36 was revised to clarify the non-potable supply uses to be consistent with the water supply assessment as follows:

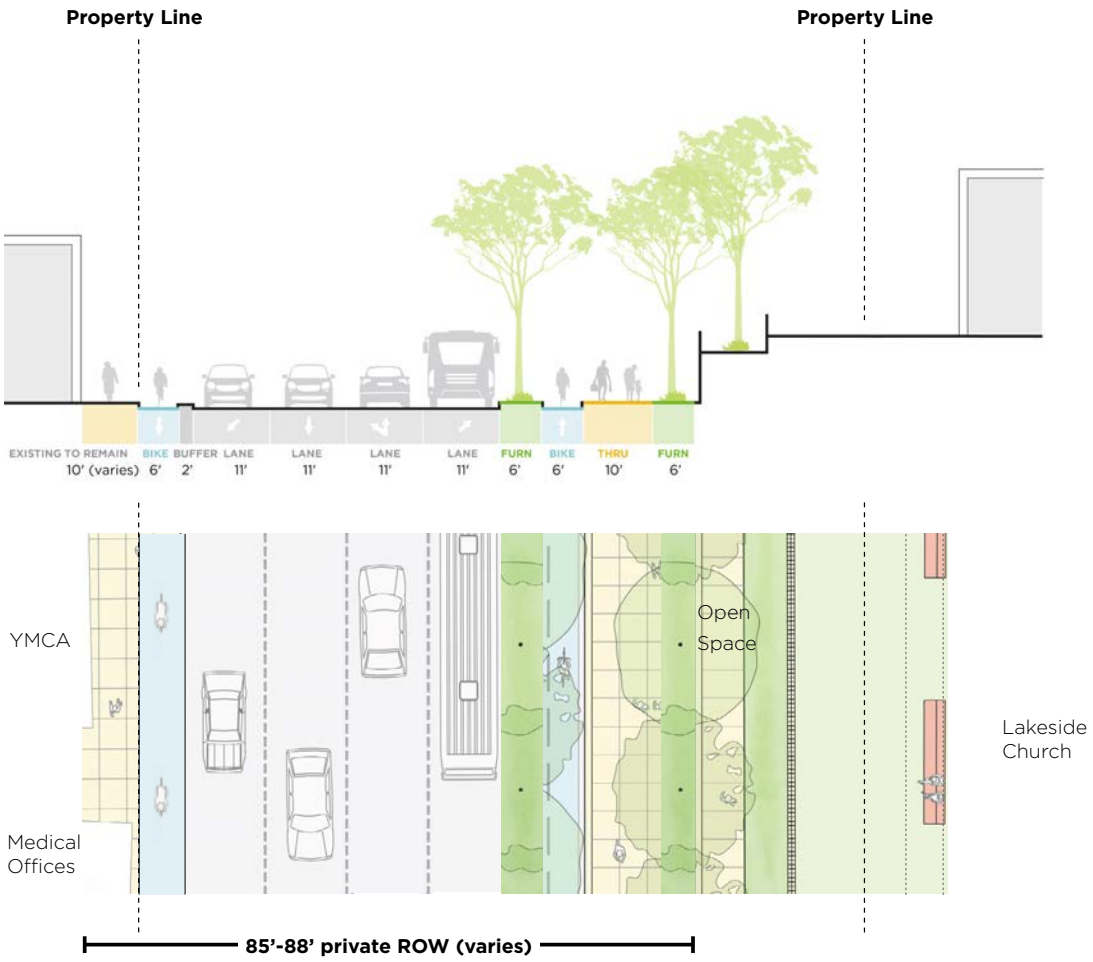
- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of water from HVAC/cooling systems, graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or decentralized treatment facilities located within certain buildings or phases as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.

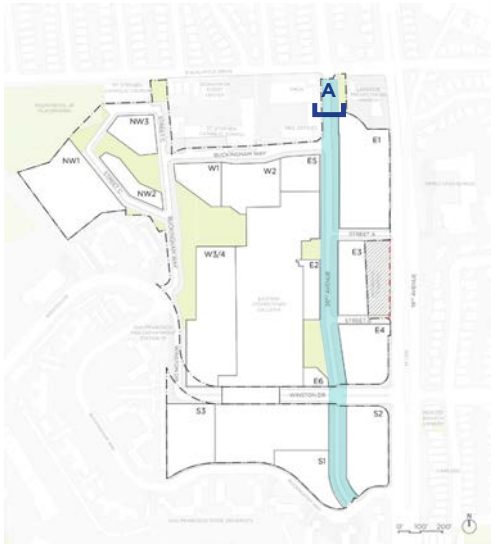


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-12
PROPOSED STREET PLAN (REVISED)

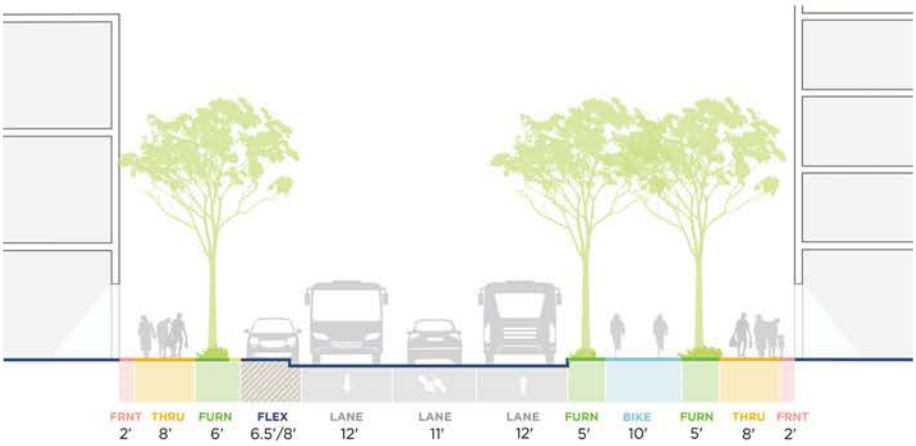


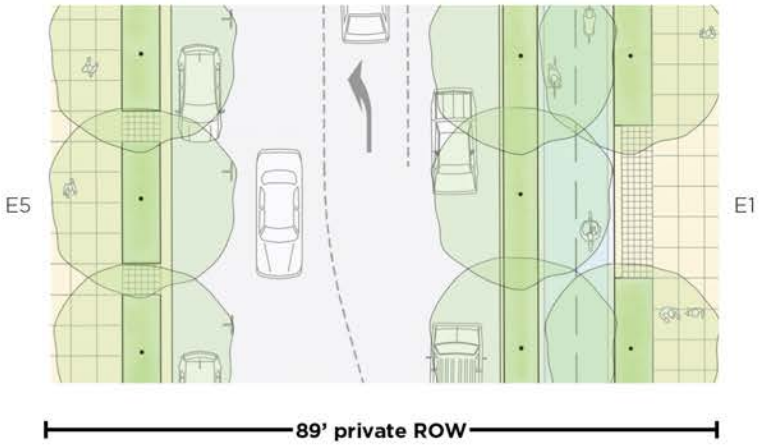


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-14
20TH AVENUE ILLUSTRATIVE SECTION A (REVISED)





Legend

Sidewalk zone
- Frontage zone (FRNT)
- Throughway zone (THRU)
- Furnishing zone (FURN)
- Extension zone* (EXT)
- Furnishing zone with parking edge zone

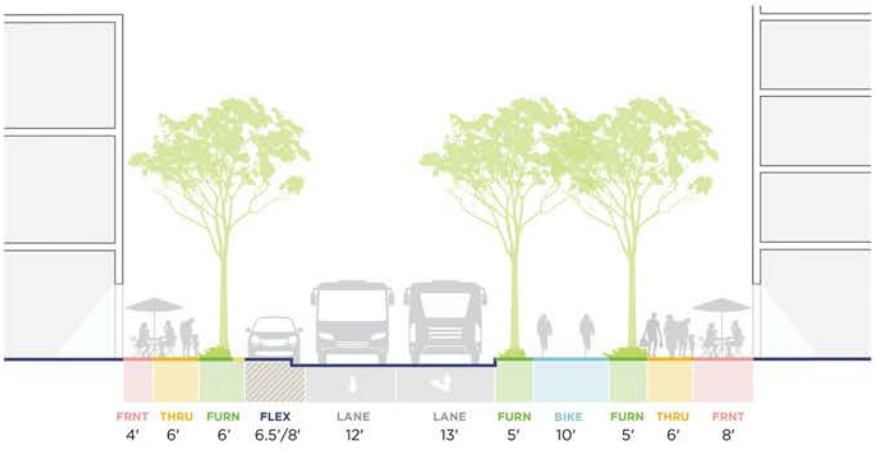
Travel Lane zone
- Travel lane (LANE)

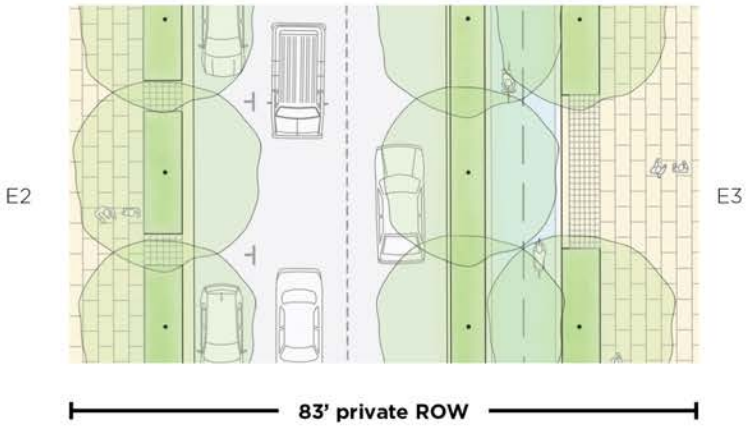
Other
- Bicycle facility (BIKE)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-15
20TH AVENUE ILLUSTRATIVE SECTION B (REVISED)

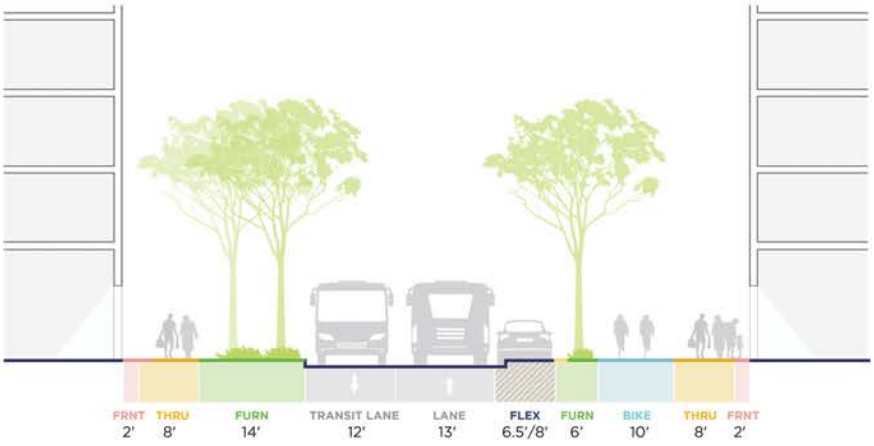


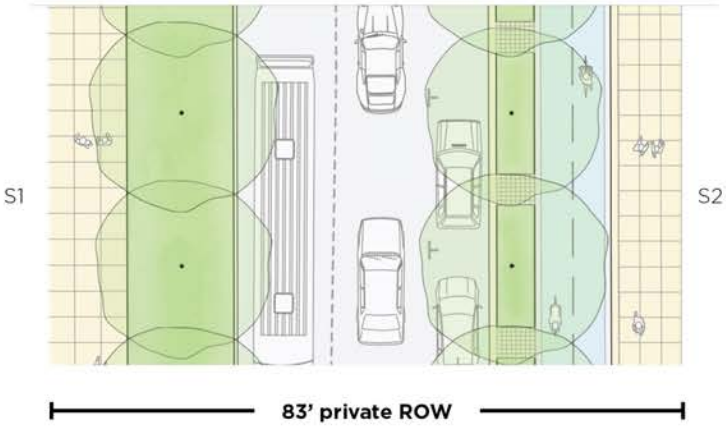


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-16
20TH AVENUE ILLUSTRATIVE SECTION C (REVISED)





SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

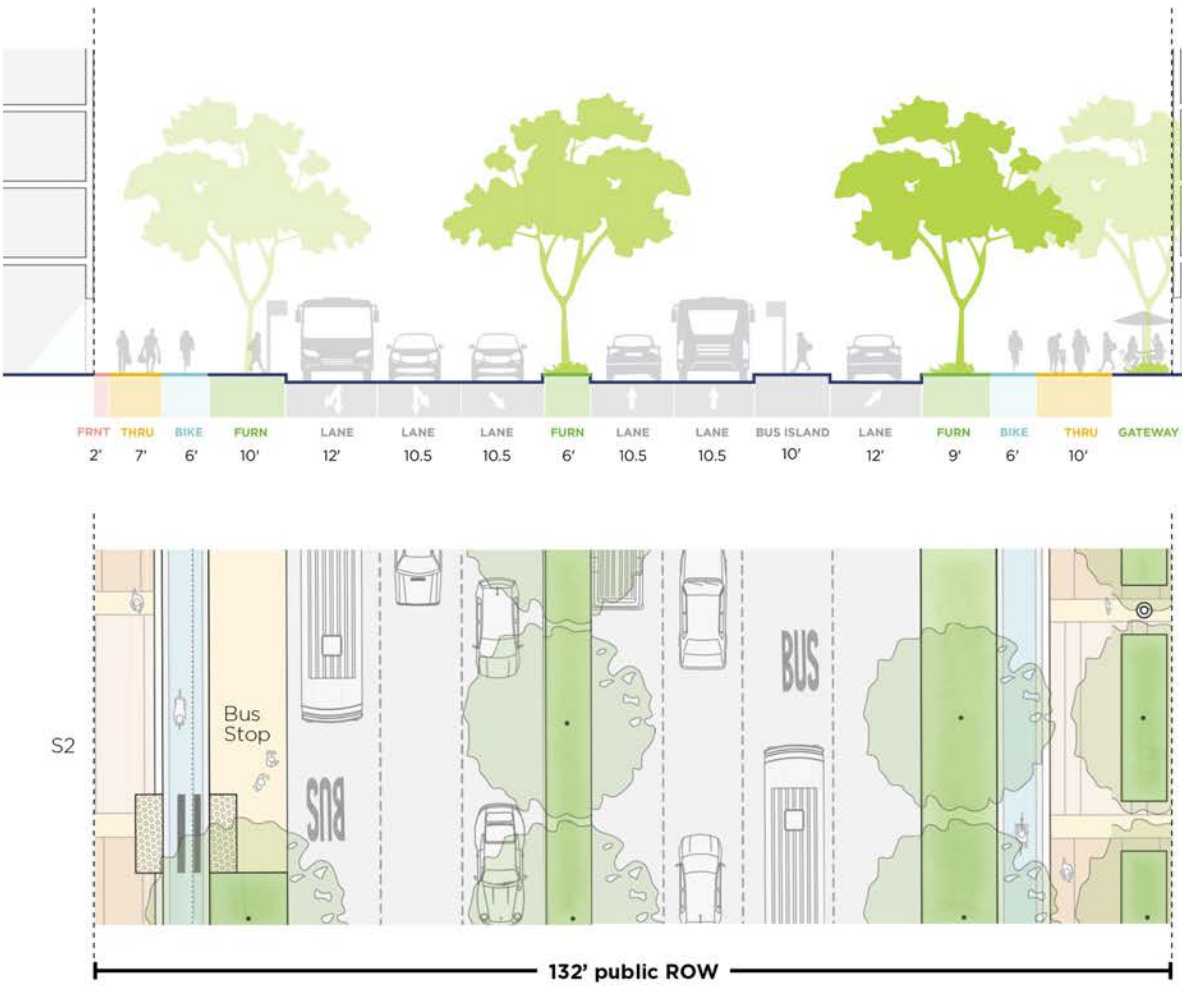
FIGURE 2-17
20TH AVENUE ILLUSTRATIVE SECTION D (REVISED)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-18

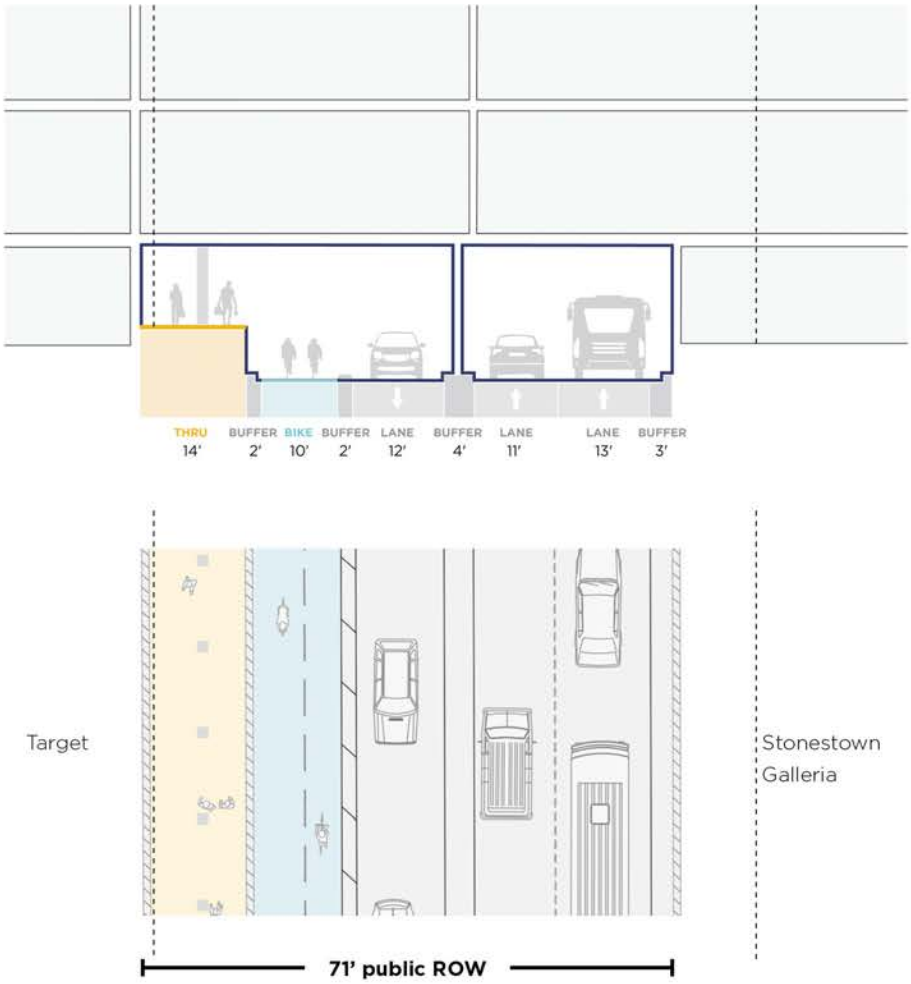
BUCKINGHAM WAY NORTH ILLUSTRATIVE SECTION (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

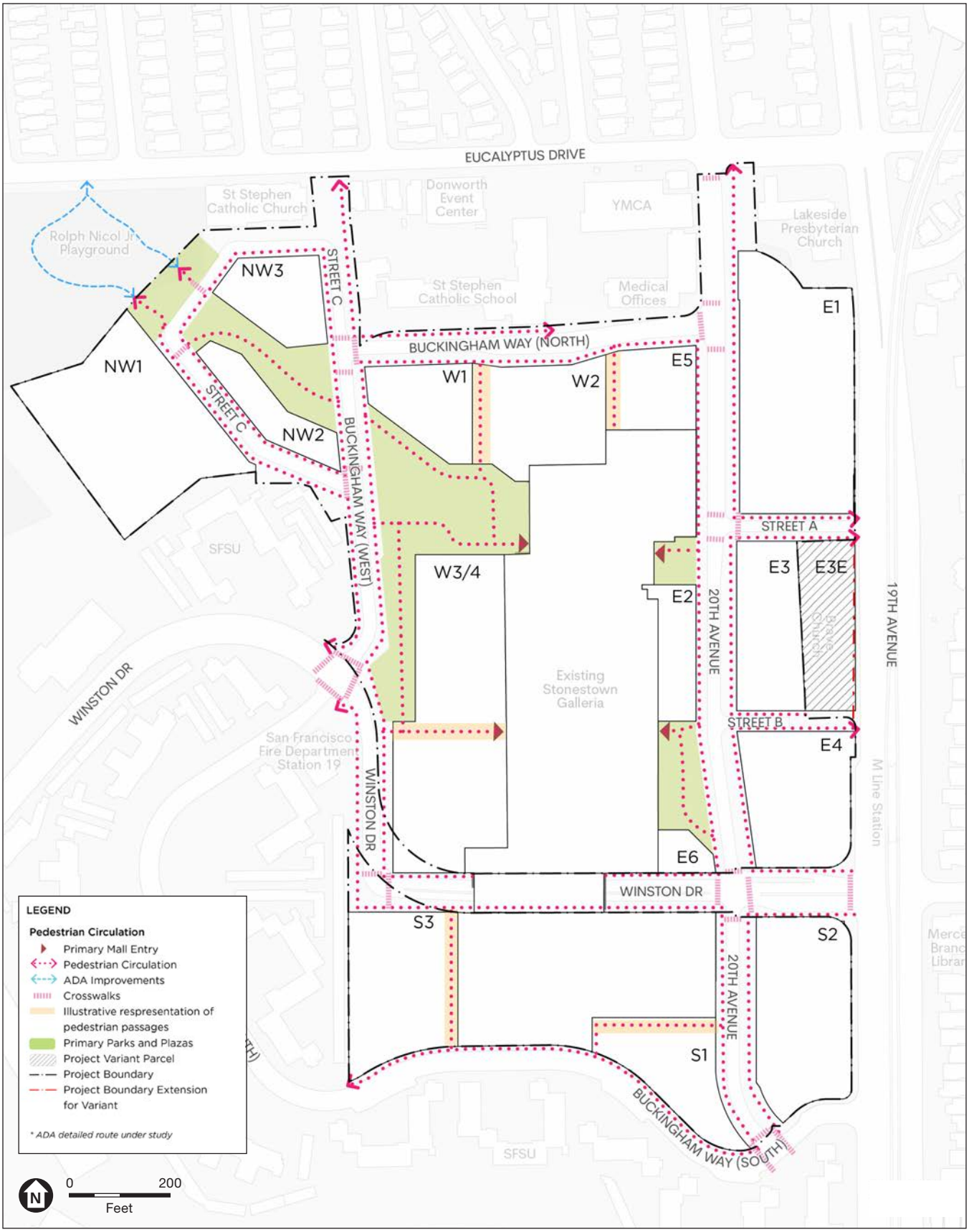
FIGURE 2-19
WINSTON DRIVE ILLUSTRATIVE SECTION A (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-20
WINSTON DRIVE ILLUSTRATIVE SECTION B (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2024

Stonestown Development Project

FIGURE 2-21
PROPOSED PEDESTRIAN NETWORK (REVISED)

2.C Environmental Analysis of the Revisions to the Proposed Project

The minor modifications described in Section 2.B above primarily include changes in lane widths, clarification on lane configuration, and ownership of the proposed recycled water system. The revisions to descriptions of 20th Avenue, Street A, Street B, Buckingham Way, and recycled water system are clarifications and corrections, and do not represent substantial changes from the proposed project and variant analyzed in the draft EIR, nor would they result in any changes to the site layout, proposed number of housing units, or construction assumptions as they are clarifications and corrections. In addition, based on the nature of the project description changes it was determined that these changes would not affect the impact analysis of environmental impacts discussed in the draft EIR. Therefore, these modifications would result in no changes to the assumptions, analysis, or conclusions described in the draft EIR assessment of environmental impacts of the proposed project as presented in draft EIR Chapter 3, Environmental Setting and Impacts, and draft EIR Appendix B with respect to any resource topics.

In particular, at the Winston Drive/20th Avenue intersection, the existing separated westbound right-turn lane would be retained and therefore the geometric conditions would match the existing conditions on this east leg (westbound approach) to the intersection. Under the proposed project analyzed in the draft EIR, this separated right-turn lane was proposed to be removed. With the separated westbound right-turn lane retained:

- There are no design features that would block sightlines or increase vehicle speeds.
- Drivers turning right at the intersection would need to wait until there is a sufficient gap in the flow of people walking to proceed with the right-turning movement.

Therefore, the impact of the proposed project related to potentially hazardous conditions would remain less than significant as described on draft EIR pp. 3.B-57 through 3.B-62. The approach and analysis for the remaining transportation-related impact categories would not be affected by the revisions and therefore the impact findings would be the same as concluded in the draft EIR.

2.D Summary of Revisions to the Draft EIR Variant

2.D.1 Introduction

This section of the responses to comments (RTC) document introduces the revised variant, which includes several changes from the draft EIR variant. Since publication of the draft EIR, and in response to public and agency comments, the project sponsor initiated revisions to the variant that would shift additional development to the northwest corner of the site from later phases of the project, increase the number of residential units, reduce non-retail sales and service uses, and remove the hotel use. The set of changes to the variant is referred to throughout this chapter as the “revised variant.” The revisions to the transportation and circulation plan for the proposed project (as described in Section 2.B, p. 2-2) would apply to the revised variant. This section includes new information pertaining to the revised variant, which modifies the variant analyzed in the draft EIR. The proposed changes to the draft EIR variant described below do not present significant new information with respect to the variant, would not result in any new significant environmental impacts or include new feasible alternatives or mitigation measures, and would not result in a substantial increase in the severity of a significant impact identified in the Chapters 3 and 5 of the draft EIR. Therefore, recirculation of the draft EIR pursuant to CEQA Guidelines section 15088.5 is not required.

2.D.2 Comparison of Draft EIR Variant and the Revised Variant

The revised variant would have the same overall characteristics and components as the draft EIR variant, including creating a new special use district (SUD) that would rezone the project site and establish development controls for construction of a multi-phase, mixed-use project. Like the variant, the revised variant would include amendments to the general plan and planning code to create the SUD and a Stonestown Special Sign District. The site layout and the general block and street networks would be generally the same for the revised variant as described in the draft EIR (pp. 2-5, 2-7, and 2-9). The predominant land uses, block configurations, and proposed height plan for the revised variant would be the same as presented on Figures 2-4 and 2-5 on draft EIR pp. 2-9 and 2-10.

The number of towers, residential square footage and unit count, non-retail sales and service uses, number of vehicle parking spaces, and number of bicycle parking spaces are the components of the revised variant that differ from the variant analyzed in the draft EIR. **RTC Table 2-1** shows the differences in uses between the draft EIR variant and the revised variant.

LAND USE PLAN

Under the revised variant, up to 3,491 residential units (3,534,000 square feet) would be developed in buildings ranging from 30 to 190 feet (see Figure 2-5 on draft EIR p. 2-10). The revised variant would add 411 residential units (including 201 senior housing units) compared to the draft EIR variant, increasing the total number of proposed residential units to 3,491.

The revised variant would achieve this increased density as follows: (i) converting residential units to 201 senior housing units; (ii) converting approximately 104,000 square feet of non-retail sales and service uses on Blocks E1, S1, and S2 to 100 residential units; (iii) converting the 100,000 square feet of hotel use on Block E3 to 96 residential units; and (iv) including an additional 130,000 square feet of residential space (totaling 125 residential units) by including five towers instead of four.

The building envelopes and heights would remain the same except the buildings on Block S3, Block NW2, and Block NW3. The developable footprint of Block NW2 would increase to allow for a flex zone such that the building can potentially accommodate additional residential units. The previously chamfered corner of Block NW2 would be squared off and the building would be extended closer to the western property line on Street C. This would increase the buildable area of Block NW2 by approximately 12,700 square feet, or about 76 residential units. The additional residential units on Block NW2 would be shifted from development in Phases 2 and 3 and would not change the square footage or residential unit counts for the overall development program. The boundary of Block NW3 would shift slightly to maintain the required separation between the buildings, however the development program of this block would not change. The change in footprint of Block NW2 and Block NW3 between the draft EIR variant and revised variant is shown in RTC Figure 2-1.[1] In addition, approximately 84 parking spaces would be added to Block NW1 and would also be shifted from proposed development in Phases 2 and 3. The proposed changes would not impact the overall construction schedule for the revised variant.

[1] As the Development Agreement (DA) was developed there are slight variations between the parcel shapes shown in the draft EIR and the DA figures. However, the analysis included in the draft EIR looked at the project as a whole; as such, the parcel shapes do not impact the overall findings of the draft EIR.

RTC Table 2-1 Draft EIR Variant Compared to the Revised Variant

Project Characteristics	Existing	Draft EIR Variant		Revised Variant		Variant Differences
PROPOSED LAND USE PROGRAM	**AREA (APPROXIMATE SQUARE FEET)**					
Residential Use	0	Up to 3,200,000 new		Up to 3,534,000		+334,000
Retail Sales and Service Use[a]	760,000 sf mall 13,300 sf, 30-foot-tall vacant theater 15,000 sf, 15- to 30-foot-tall commercial building	**Up to 160,000** 710,000[d] sf of the existing mall to be retained 13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		**Up to 160,000** 710,000[d] sf of the existing mall to be retained 13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		0
Non-Retail Sales and Service Use[b]	0	Up to 200,000 net new		Up to 96,000		-104,000
Hotel	0	Up to 100,000 (up to 200 rooms) net new		0		-100,000 (-200 rooms)
Institutional Use[c]	30,000 sf, 30-foot-tall church	**Up to 63,000** 30,000 sf church to be demolished 33,000 sf net new		**Up to 63,000** 30,000 sf church to be demolished 33,000 sf net new		**0**
PROPOSED DWELLING UNITS		**NUMBER (APPROXIMATE)**	**PERCENTAGE (APPROXIMATE)**	**NUMBER (APPROXIMATE)**	**PERCENTAGE (APPROXIMATE)**	
Studio	N/A	616	20%	658	19%	+42
1-bedroom	N/A	1,232	40%	1,316	38%	+84
2-bedroom	N/A	924	30%	987	28%	+63
3-bedroom	N/A	308	10%	329	9%	+21
Senior	N/A	N/A	N/A	201	6%	+201
Total Dwelling Units		***3,080***	***100%***	***3,491***		***+411***
PROPOSED PARKING	**NUMBER (APPROXIMATE)**					
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,450** -700-space parking garage to be demolished -2,450 surface parking spaces to be removed 250 spaces below shopping mall to be retained +540 new spaces to be added for expanded parking below shopping mall		**4,861** -700-space parking garage to be demolished -2,450 surface parking spaces to be removed 250 spaces below shopping mall to be retained +540 new spaces to be added for expanded parking below shopping mall		**+411**

Project Characteristics	Existing	Draft EIR Variant	Revised Variant	Variant Differences
		+770-space new parking garage to be added +Remaining 2,890 spaces to be distributed throughout site *1,050 net new spaces*[e]	+770-space new parking garage to be added +Remaining 3,301 spaces to be distributed throughout site *1,461 net new spaces*[e]	
Car-share parking spaces	0	68	70	+2
BICYCLE PARKING	**NUMBER (APPROXIMATE)**			
Bicycle parking class 1	33	923	1,010	+87
Bicycle parking class 2	67	253	267	+14
Total Bicycle Parking	***100***	***1,176 (1,076 net new)***	***1,277 (1,177 net new)***	***+101***
OPEN SPACE	**AREA**			
Publicly accessible open space	1.6 acres	Approximately 6 net new acres		No change
Private residential open space	N/A	Approximately 27 sf per unit		No change
BUILDING CHARACTERISTICS				
Stories	1 to 3 stories	3 to 18 stories		No change
Height	15 to 65 feet	30 to 190 feet		No change
Ground floor	Retail sales and service	All blocks would include ground-floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street.		No change

ABBREVIATIONS: N/A = not applicable; sf = square feet

NOTES:

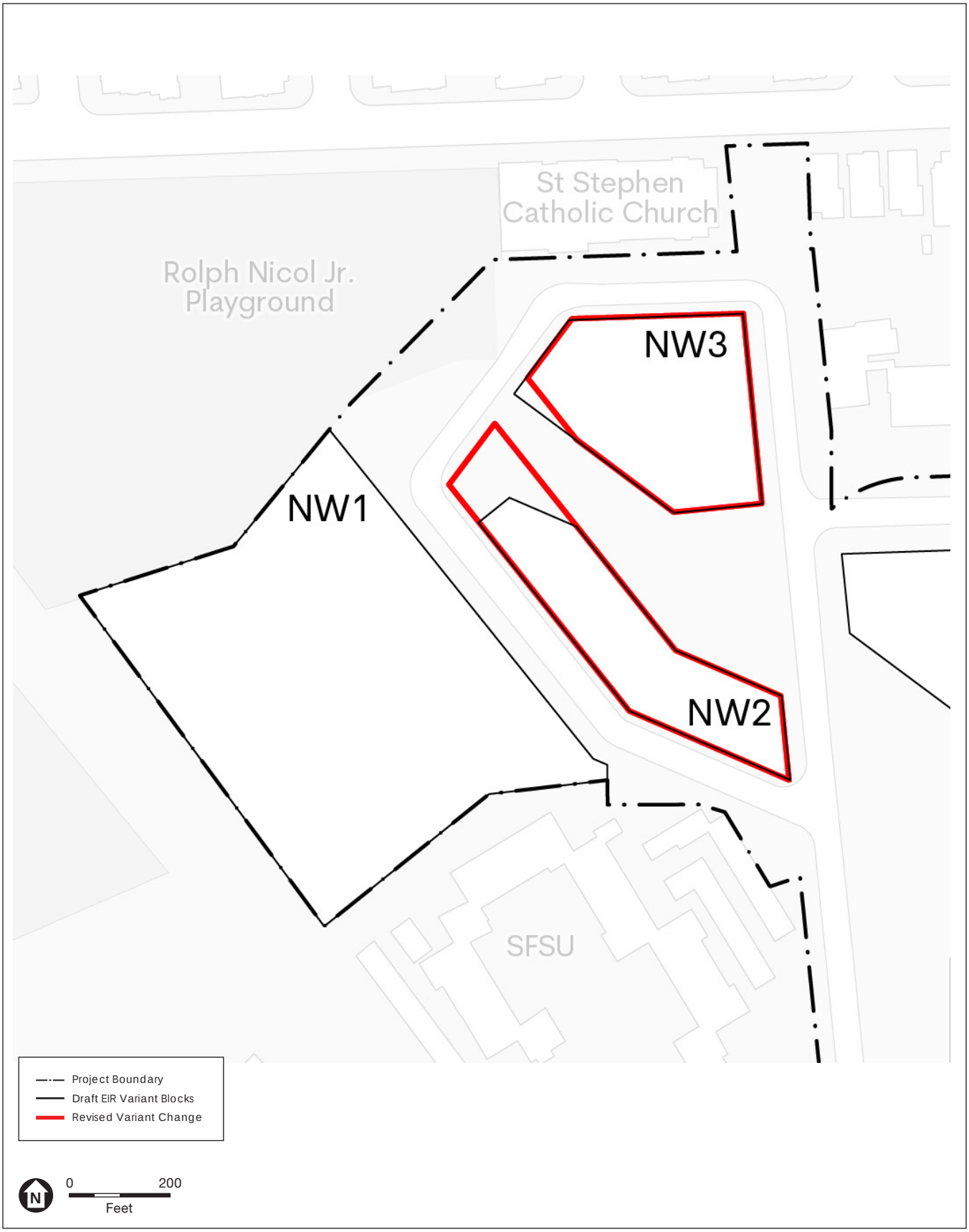
[a] "Retail Sales and Service Use" is a use category that includes but is not limited to the sale of goods, typically in small quantities, or services directly to the ultimate consumer or end user with some space for retail service onsite, excluding Retail Entertainment Arts and Recreation and Retail Automobile Uses, and including but not limited to Adult Business, Animal Hospital, Bar, Cannabis Retail, Chair and Foot Massage, Tourist Oriented Gift Store, General Grocery, Specialty Grocery, Gym 2 Hotel, Jewelry Store, Kennel, Laundromat, Liquor Store, Massage Establishment, Mortuary (Columbarium), Motel, Non-Auto Sales, Pharmacy, Restaurant, Limited Restaurant, General Retail Sales and Service, Financial Service, Fringe Financial Service, Limited Financial Service, Health Service, Personal Service, Retail Professional Service, Self-Storage, Tobacco Paraphernalia Establishment, and Trade Shop (planning code section 102).

[b] "Non-Retail Sales and Service Use" includes the sale of goods or services to other businesses rather than the end user, or that does not provide for direct sales to the consumer onsite. Uses in this category include but are not limited to Business Services, Catering, Commercial Storage, Design Professional, General Office, Laboratory, Life Science, Non-Retail Professional Service, Trade Office, Wholesale Sales, and Wholesale Storage (planning code section 102).

[c] "Institutional Use" includes Child Care Facility, Community Facility, Private Community Facility, Hospital, Job Training, Medical Cannabis Dispensary, Religious Institution, Residential Care Facility, Social Service or Philanthropic Facility, Post-Secondary Educational Institution, Public Facility, School, and Trade School (planning code section 102).

[d] The 50,000 sf CitySports building would be demolished and is subtracted from the existing mall square footage to be retained.

[e] The variant and revised variant would both retain the 250 spaces below the shopping mall. 4,450 variant spaces – 250 retained spaces = 4,200 new variant spaces. 4,200 variant spaces – 3,150 existing spaces to be removed = 1,050 net new spaces for the variant. 4,861 revised variant spaces – 250 retained spaces = 4,611 new variant spaces. 4,611 variant spaces – 3,150 existing spaces to be removed = 1,461 net new spaces for the variant.



SOURCE: Brookfield Properties and SITELAB urban studio, 2024

Stonestown Development Project

RTC FIGURE 2-1
NORTHWEST CORNER CHANGES

Block S3 would change from a midrise building to a tower building, for a total number of five towers in the revised variant (rather than the four proposed in the variant). The proposed project and variant analyzed in the draft EIR studied a potential fifth tower building on Block S3 in the wind and shadow modeling (see Figure 2-5 on draft EIR p. 2-10); however, the construction analysis analyzed a development program that assumed Block S3 was a midrise building and there were only four towers sitewide. Overall, the revised variant would represent an increase of 411 residential units (334,000 square feet), a 104,000-square-foot decrease in non-retail sales and service uses, and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant.

TRANSPORTATION AND CIRCULATION PLAN

The refinements and clarifications to the transportation and circulation plan described above in Section 2.B, p. 2-2, would apply to the revised variant.

VEHICLE PARKING AND BICYCLE PARKING

The revised variant would provide 4,861 vehicle parking spaces, which is 411 more spaces than under the draft EIR variant. As stated in the draft EIR on p. 2-18, the existing parking garage below the shopping mall would be retained and expanded under Blocks W3 and W4, a new parking garage would be constructed on Block W2, and vehicle spaces would be embedded within the proposed building podiums and/or below grade throughout the project site. In addition, the revised variant would relocate 84 parking spaces from Blocks W3, W4, E1, and E5 to Block NW1.

The revised variant would provide 1,010 class 1 bicycle parking spaces and 267 class 2 bicycle parking spaces. Similar to the draft EIR variant, the class 1 bicycle parking spaces would be located either on the ground floor of each residential building or in the first below-grade level of each residential building, and the class 2 spaces would be located in the right-of-way adjacent to each building or in publicly accessible open space areas.

INFRASTRUCTURE AND UTILITIES

The revised variant would have the same upgrades to the existing infrastructure and utility systems as described in draft EIR pp. 2-32 through 2-39. However, the revised variant would require an additional emergency generator for the tower at Block S3; therefore, the revised variant would have 13 emergency backup diesel generators to serve the residential blocks.

CONSTRUCTION SCHEDULE

The construction phasing for the revised variant would be similar to that for the variant analyzed in the draft EIR. The overall construction durations for Phases 1 through 5 would be the same as the draft EIR variant. Construction associated with the additional Block NW2 buildable area and relocated parking spaces to Block NW1 would increase the excavation duration of Phase 1 construction but would not change the overall duration. Compared to the draft EIR variant, the demolition and grading, shoring, and excavation subphases of Phase 6 of the revised variant would be shorter because less grading would be required[2]; the Phase 6 building construction subphase would increase by two months; the Phase 6 paving and architectural coating subphases would increase by a few days; and the sequencing would change slightly. Overall, these changes would extend the Phase 6 construction period by three months to accommodate the additional building

[2] Less grading is generally needed when excavating a large area because the larger size of the hole allows for a more gradual slope. This is consistent with the updated construction equipment, which removed the grader from the grading, shoring, excavating subphase in Phase 6.

construction required for the Block S3 tower. Approximately 26,890 cubic yards of additional excavation would be required for Block S3. **RTC Table 2-2** shows the changes to the construction schedule between the draft EIR variant and the revised variant.

RTC Table 2-2 Preliminary Estimated Construction Schedule for the Draft EIR Variant and the Revised Variant

	Draft EIR Variant			Revised Variant		
Construction Phase(s)	Start	Finish	Duration (Months)	Start	Finish	Duration (Months)
Phases 1 and 1B	Month 1	Month 45	45	No Change		45
Phase 2	Month 12	Month 56	44	No Change		44
Phase 3	Month 26	Month 54	28	No Change		28
Phase 4[a]	Month 36	Month 80	44	No Change		44
Phase 5	Month 48	Month 91	43	No Change		43
Phase 6	Month 60	Month 96	36	Month 60	Month 99	39
Total	***Month 1***	***Month 96***	***96***	***Month 1***	***Month 99***	***99 (+3 months)***

SOURCE: Data provided by Brookfield Properties Development in 2022 and 2023

NOTE:

[a] The construction of the Authentic Church parcel under the variant and revised variant would be accommodated within Phase 4.

2.E Environmental Analysis of the Revised Variant

Because revisions to the draft EIR variant would not apply to the proposed project analyzed in the draft EIR, the following environmental analysis is limited to a comparison of the revised variant to the draft EIR variant. For all impact topics, the environmental setting, regulatory framework, significance criteria, and approach to analysis are identical for the variant and revised variant; therefore, see draft EIR Chapter 4 and draft EIR Appendix B, Initial Study, for this information. For the cumulative impact analyses, the same list-based or projections-based approaches have been used for the revised variant depending on the environmental topic analyzed. Where the impacts and mitigation measures are substantially the same as for the variant, the following discussion summarizes the impact analysis, and draft EIR Chapter 3 and draft EIR Appendix B present the detailed analysis. The revised variant analysis of the draft EIR initial study topics is included as Attachment C to this RTC document. The analysis of the topics analyzed in the draft EIR (historic architectural resources, transportation and circulation, air quality, noise, wind, shadow, and utilities and service systems) are provided in this section.

2.E.1 Historic Architectural Resources

The impacts of the variant on historic architectural resources were described and analyzed in draft EIR Section 3.A, Historic Architectural Resources, pp. 3.A-1 through 3.A-28.

The draft EIR concluded that the variant would cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5 because it would include the demolition of the former UA Stonestown Twin Theater (501 Buckingham Way), which is considered a historic resource under CEQA. The demolition of the theater would materially impair the historic architectural resource, which would

no longer retain the ability to convey its significance as a New Formalist–style theater. Implementation of Mitigation Measure M-CR-1a, Documentation of Historic Resources; Mitigation Measure M-CR-1b, Salvage Plan; and Mitigation Measure M-CR-1c, Public Interpretive Plan, would be required to partially compensate for impacts on the historic architectural resource through comprehensive documentation and memorialization. However, the impact on historic architectural resources would be significant and unavoidable with mitigation.

The revised variant would include the same predominant land uses, block configurations, and construction footprint as the variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of Block NW2, Block NW3, and a tower on Block S3, which would change from a midrise building to a tower building. The tower on Block S3 would not impact any historical resources, as none are present at that location and this change to the variant would not impact any historic architectural resources. Like the draft EIR variant, the revised variant would include demolition of the former UA Stonestown Twin Theater (501 Buckingham Way). The demolition of the theater would still occur with the expansion of Block NW2 towards Street C. Mitigation Measures M-CR-1a through M-CR-1c would be implemented for the revised variant, requiring that the historic architectural resource be documented, that a salvage plan be prepared, and that an interpretive program be created. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. Accordingly, the revised variant would result in the same impact on the historic architectural resource as the draft EIR variant, which would be significant and unavoidable with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to historic architectural resources.

CUMULATIVE IMPACTS

The draft EIR concluded that impacts of the cumulative projects would not combine with impacts of the variant related to historic architectural resources such that they would result in a significant cumulative impact, because the impact of the variant on historic architectural resources would be limited to the former UA Stonestown Twin Theater (501 Buckingham Way). The analyses in the draft EIR concluded that the variant would not combine with the cumulative projects to result in a significant cumulative impact on historic architectural resources, and no mitigation measures are required. This same conclusion applies to the revised variant because it would involve the same construction footprint as analyzed in the draft EIR for the variant. Therefore, the revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative historic architectural resources impacts.

2.E.2 Transportation and Circulation

The draft EIR variant's impacts on transportation and circulation are described and analyzed in draft EIR Section 3.B, Transportation and Circulation, pp. 3.B-1 through 3.B-85. The analysis found that under both project-level and cumulative level, the draft EIR variant would result in significant and unavoidable transit delay impact, less than significant construction impact and loading impact with mitigation, and less than significant impact in all remaining transportation-related impact categories. The transportation and circulation data cited in this section are based on the results of a memorandum prepared to analyze the transportation impacts of the revised variant (see Attachment C of this RTC document).[3]

[3] Kittelson & Associates, Inc., *Stonestown Galleria New Option Impact Analysis Memorandum*, January 8, 2024, prepared for San Francisco Planning Department.

The draft EIR identified the following mitigation measures for the variant:

- Mitigation Measure M-TR-1, Construction Coordination Plan
- Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips
- Mitigation Measure M-TR-4b, Transit Travel Time Reduction Measure
- Mitigation Measure M-TR-6, Develop Driveway and Loading Operations Plan
- Mitigation Measure M-C-TR-3, Signal Coordination and Transit Signal Priority along 19th Avenue

Mitigation Measure M-TR-1 would reduce construction-related direct and cumulative transportation and circulation impacts that would result from the project and variant to less-than-significant levels for the draft EIR variant.

The draft EIR identified two mitigation measures that would reduce project-level impacts related to public transit delay that would result from the variant. However, the delay reductions associated with Mitigation Measure M-TR-4a and the precise travel time (and thus the transit delay reduction) of any given segment cannot be guaranteed. Mitigation Measure M-TR-4b would apply to the delayed transit corridor (57 Parkmerced inbound route), but the measure's effectiveness would be subject to uncontrollable factors, including the arrival of buses within the traffic signal cycle and the location of buses in the traffic stream. Furthermore, the transit signal priority plan would be subject to approval by the San Francisco Municipal Transportation Agency (SFMTA). Therefore, these mitigation measures cannot be guaranteed to reduce the project-level impacts related to public transit delay to less-than-significant levels, and the impacts would be significant and unavoidable with mitigation.

Mitigation Measure M-TR-6 would reduce project-level and cumulative impacts related to freight and commercial and passenger loading.

Mitigation Measure M-C-TR-3 would apply to the project and variant under cumulative conditions in addition to Mitigation Measures M-TR-4a and M-TR-4b. These three mitigation measures would reduce cumulative impacts but cannot be guaranteed to reduce the impacts to less-than-significant levels. The effectiveness of Mitigation Measures M-TR-4a and M-TR-4b under cumulative conditions would be the same as described for project-level impacts above. Mitigation Measure M-C-TR-3 requires a fair-share contribution from the project sponsor but does not itself provide for the installation of the closed-circuit televisions (CCTVs). Furthermore, the CCTVs would allow SFMTA staff to make design changes to reduce delay but would not themselves guarantee delay reduction.

RTC Table 2-3 summarizes the estimated travel demand for the revised variant and the difference relative to the draft EIR variant. Proposed project trips are included in this table because the subsequent transit-delay impact discussion relies on a comparison between estimates of travel demand for the revised variant and the proposed project. As shown, the travel demand for the revised variant would result in fewer daily person-trips than for the draft EIR variant and more daily person-trips than for the proposed project. The revised variant would generate totals of approximately 55,110 daily person-trips and 5,035 person-trips during the weekday p.m. peak period. However, the number of daily and p.m.-peak-hour person-trips made in motor vehicles would be lower than with either the draft EIR variant or the proposed project. In the p.m. peak hour—for which the draft EIR variant's transit delay impact was identified—the revised variant would

generate 2,539 total automobile and taxi/transportation network company trips, compared to 2,640 for the draft EIR variant and 2,599 for the proposed project.

RTC Table 2-3 Travel Demand by Mode for the Proposed Project, Draft EIR Variant, and Revised Variant

Land Use or Property	Person-Trips by Mode					
	Auto	Taxi/TNC	Transit	Bicycle	Walk	Total
DAILY						
Proposed Project	27,404	1,323	8,793	1,138	16,354	***55,012***
Draft EIR Variant	27,838	1,360	8,997	1,183	16,722	***56,100***
Revised variant	26,611	1,284	9,350	1,233	16,632	***55,110***
Difference between Revised Variant and Draft EIR Variant	***(1,227)***	***(76)***	***353***	***50***	***(90)***	***(990)***
WEEKDAY P.M. PEAK HOUR						
Proposed Project	2,480	119	805	106	1,488	***4,998***
Draft EIR Variant	2,518	122	823	110	1,520	***5,093***
Revised variant	2,422	117	855	115	1,526	***5,035***
Difference between Revised Variant and Draft EIR Variant	***(96)***	***(5)***	***32***	***5***	***6***	***(58)***

SOURCES: Kittelson & Associates, Inc., 2022 and 2024; SF Workbook, 2018; ITE, 11th edition, 2021; NCHRP 8-51 Internal Trip Capture Estimation Tool

ABBREVIATION: TNC = transportation network company

RTC Table 2-4 compares vehicle trips generated by the proposed project, draft EIR variant, and revised variant. The revised variant would generate 14,204 daily external vehicle trips, 6.2 percent fewer trips than the draft EIR variant. During the weekday p.m. peak period, the revised variant would generate 1,152 external vehicle trips, 5.7 percent fewer trips than the draft EIR variant and 3.8 percent fewer than the proposed project.

These changes in daily and total person-trips are consistent with the increase in residential units, decrease in non-retail sales and service use, and removal of the hotel component under the revised variant. The reduction in external vehicle trips is mainly attributable to two factors as discussed below.

On a per-square-foot basis, land uses generate different numbers of daily and p.m.-peak-period trips. For example, approximately 1,000 square feet of hotel, office, and residential uses generate 16.8, 15.7, and 6.8 person-trips per day, respectively, according to the planning department's Transportation Impact Analysis Guidelines for Environmental Review.[4,5] Therefore, the residential land uses proposed under the revised variant would generate fewer trips on a per-square-foot basis than the hotel and office land uses that were proposed under the draft EIR variant, which have been replaced by residential land uses with the revised variant.

[4] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update: Summary of Changes Memorandum,* February 14, 2019, last updated October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines, accessed May 30, 2023.

[5] The analysis used the office trip generation rates for the site's non-retail sales and service uses.

RTC Table 2-4 Vehicle Trips of the Proposed Project, Draft EIR Variant, and Revised Variant

Land Use or Property	Total Vehicle Trips[a]	Internal Vehicle Trip Reduction Percentage	External Vehicle Trips
DAILY			
Proposed project	17,811	17%	14,865
Draft EIR Variant	18,110	16%	15,147
Revised variant	16,998	16%	14,204
Difference between Revised Variant and Draft EIR Variant	***(1,112)***	***N/A***	***(943)***
WEEKDAY P.M. PEAK HOUR			
Proposed project	1,524	21%	1,198
Draft EIR Variant	1,550	21%	1,221
Revised variant	1,462	21%	1,152
Difference between Revised Variant and Draft EIR Variant	***(88)***	***N/A***	***(69)***

SOURCES: Kittelson & Associates, Inc., 2022 and 2024; SF Workbook, 2018; ITE, 11th edition, 2021; NCHRP 8-51 Internal Trip Capture Estimation Tool
ABBREVIATION: N/A = not applicable
NOTES:
[a] Vehicle trips include auto and taxi/transportation network company trips.

Residential land use in the project vicinity has a lower automobile mode split than office and hotel uses. The mode split was obtained directly from the Transportation Impact Analysis Guidelines for Environmental Review, which is calculated based on the project site's transportation analysis zone (TAZ 918), neighborhood (Sunset District), and place type (3, urban low density). In this geography, the percentage of person-trips traveling by automobile is as follows: residential, 39 percent; office, 84 percent; and hotel, 54 percent.

Draft EIR Appendix D.1, Travel Demand Memorandum, presents the detailed methodology for trip generation, mode split, and internal trip capture.

CONSTRUCTION IMPACTS

The revised variant would include more residential use and less non-retail sales and service use than the variant analyzed in the draft EIR and would not include the hotel component. However, the total number of buildings and structures to be constructed on the site would be the same as under the draft EIR variant, but the building typology of one of the proposed buildings would change from a midrise building to a tower building for a total number of tower buildings sitewide of five in the revised variant (rather than the four proposed in the draft EIR variant). Requirements for coordination with city agencies and compliance with applicable city, state, and federal codes, rules, and regulations would apply to the revised variant as they would to the draft EIR variant. Overall, differences in the construction schedule, the nature of construction activities, and the potential effects on pedestrian, bicycle, and vehicle circulation and access (and associated hazards) under the revised variant would be negligible. Similar to the draft EIR variant, some portions of the revised variant are located on private right-of-way and would not be subject to City requirements, which could cause significant disruptions. Thus, construction activities within the private right-of-way could potentially cause substantial interference with emergency access or conflicts with people walking, bicycling, or driving or public transit operations to result in a significant impact. Therefore, Mitigation Measure M-TR-1

would apply to the revised variant in order to reduce construction-related transportation impacts to less-than-significant levels.

POTENTIALLY HAZARDOUS CONDITIONS

Like the draft EIR variant, the revised variant would result in an increase in vehicle travel within the project site and on the surrounding roadway network. The addition of project-generated trips would result in queue lengths that are longer than existing levels, with potential queues spilling back to adjacent intersections at 19th Avenue/Winston Drive and 19th Avenue/Eucalyptus Drive during the weekday p.m. peak hour. However, these effects are not expected to create potentially hazardous conditions for people walking or bicycling from high speeds or limited visibility, as the revised variant would include the same design features as the draft EIR variant (e.g., lane reduction and right-turn slip lane closure) to promote slower speeds along roadways and at conflicting points. In addition, as shown in RTC Table 2-4 p. 2-26, the revised variant would generate fewer vehicle trips during the weekday p.m. peak hour than the variant. Therefore, impacts under the revised variant with respect to potentially hazardous conditions would be similar to or less than those under the draft EIR variant and would be less than significant.

ACCESSIBILITY AND EMERGENCY ACCESS

Relative to the draft EIR variant, the revised variant would generate a similar level of pedestrian activity, including walk trips to and from the Stonestown Galleria shopping mall and some trips to and from nearby complementary land uses. As shown in RTC Table 2-3 and RTC Table 2-4, pp. 2-25 and 2-26, compared to the draft EIR variant, pedestrian activity under the revised variant would be slightly higher during the weekday p.m. peak hour, with fewer vehicle trips.

Relevant design standards and guidelines that would apply to the draft EIR variant, such as the Americans with Disabilities Act and the Better Streets Plan, would also apply to the revised variant. Like the draft EIR variant, the revised variant would provide continuous sidewalks within the project site, along with street trees, accessible ramps, and other streetscape elements to enhance pedestrian connectivity and encourage walking. Accordingly, differences in pedestrian activity, safety, accessibility, and access would be negligible. Pedestrian impacts under the revised variant would be similar to those under the draft EIR variant and would be less than significant.

The revised variant would generate a slightly greater number of bicycle trips during the weekday p.m. peak hours than the draft EIR variant. As discussed above, the revised variant would generate fewer vehicle trips than the draft EIR variant, and the internal circulation network and associated changes to the external circulation network under the revised variant would be as described for the draft EIR variant.[6] As with the draft EIR variant, a bikeway network within the project site would connect to nearby bikeway facilities and reduce potential hazards to bicyclists by providing protection and reducing bicycle/vehicle conflicts. Accordingly, differences in bicycle safety and access between the revised variant and the draft EIR variant would be negligible, and would not affect the analysis or conclusions presented for the draft EIR variant. Bicycle impacts under the revised variant would be similar to those under the variant and would be less than significant.

As with the draft EIR variant, proposed streetscape changes would maintain sufficient clearance for emergency vehicles and would not preclude or inhibit emergency vehicle access. Final roadway designs would be approved by the San Francisco Fire Department before construction to ensure compliance with the

[6] The revised variant would include 101 more bicycle parking spaces than the draft EIR variant.

San Francisco Fire Code. Therefore, impacts of the revised variant related to emergency vehicle access would be similar to impacts of the draft EIR variant and would be less than significant.

TRANSIT DELAY IMPACTS

Transit delay is associated with the project-generated peak-hour vehicle traffic because traffic congestion associated with traffic increases would slow transit vehicles. Additionally, transit vehicles at bus stops would need to wait longer to pull out and reenter the traffic flow. As shown in RTC Table 2-4, p. 2-26, the revised variant would result in approximately 6 percent fewer p.m.-peak vehicle trips than the draft EIR variant and 4 percent fewer trips than the proposed project. That trip reduction would result in an approximately 6 percent lower contribution to all vehicle movements through project study intersections than under the draft EIR variant and 4 percent fewer than under the proposed project.

In addition, the revised variant would also relocate 84 parking spaces from Blocks W3, W4, E1, and E5 to Block NW1. The parking relocation would address the significant and unavoidable transit delay impact to the 57 Parkmerced inbound line identified under the draft EIR variant. The location of vehicle parking governs the onsite origin and destination of vehicle trips and the associated routes drivers take to and from the project site. As presented under draft EIR Section 3.B.4 and in draft EIR Appendix D.2, Transit Delay Analysis Memorandum, project vehicle trips traveling northbound along 20th Avenue would increase the traffic demand at already-congested intersections. Relocating parking away from 20th Avenue would encourage travel routes that could avoid these intersections and roadways could help reduce additional demand and redistribute vehicle trip routes away from locations where they would contribute most to the identified transit delays.

As shown in **RTC Table 2-5**, the revised variant would result in a reduced additional delay from 4.8 minutes to 2.8 minutes to the 57 Parkmerced inbound line compared to the draft EIR variant and the level of delay of all transit lines analyzed would be lower than the delay threshold of 4 minutes. Therefore, the revised variant would result in less-than-significant project-level transit delay impacts, as with the proposed project described in the draft EIR. However, Mitigation Measures M-TR-4a would still be required for the revised variant to mitigate impacts on air quality and greenhouse gas emission impacts and are discussed in Sections 2.E.3 below and Attachment C of this RTC, respectively.

RTC Table 2-5 Project-Level Transit Delay of the Proposed Project, Draft EIR Variant, and Revised Variant

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)		
					Existing plus Proposed Project	Draft EIR Variant	Revised Variant
28 19th Avenue	IB	10	5	4.0	0.5	0.6	0.5
	OB	10	5	4.0	2.1	2.1	1.3
28R 19th Avenue Rapid	IB	10	5	4.0	0.5	0.5	0.5
	OB	10	5	4.0	1.2	1.2	0.4
57 Parkmerced	IB	20	10	4.0	3.9	**4.8**	2.8
	OB	20	10	4.0	2.5	3.0	1.2
58 Lake Merced	IB	30	15	4.0	1.1	1.4	1.0
	OB	30	15	4.0	0.4	0.5	0.4
28 + 28R Combined	NB	5	2.5	2.5	0.5	0.6	0.5
	SB	5	2.5	2.5	2.1	2.1	1.3
122 SamTrans	NB	20	10	4	1.3	1.5	1.0
	SB	20	10	4	0.8	0.8	0.8

SOURCES: Kittelson & Associates, Inc., 2022 and 2024

ABBREVIATIONS:

IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound

NOTE:

Orange highlighted cells indicate delay values above the significance threshold.

Unlike the draft EIR variant, which would have a significant and unavoidable impact with mitigation, transit delay impacts under the revised variant would be less than significant.

VEHICLE MILES TRAVELED IMPACTS

The revised variant would be similar to the draft EIR variant in terms of the type of land uses proposed, although the revised variant would increase the building area and number of parking spaces compared to the draft EIR variant. The impacts related to vehicle miles traveled (VMT) and induced automobile travel would remain less than significant for the following reasons:

- As discussed in the draft EIR under Impact TR-5, pp. 3.B-70 through 3.5-72, the project site is located in an area (TAZ 918) where existing VMT per capita for the proposed uses is more than 15 percent below the existing and future regional averages for residential, office, and retail land uses. The revised variant would not include hotel uses, would provide more residential land use, and would reduce non-retail sales and service land use. The analysis considers VMT as an efficiency metric and whether the project is located within an area with VMT below significant thresholds. Because the revised variant contemplates similar land uses in the same locations within the City, the revised variant's VMT conclusions would not change: the revised variant, like the draft EIR variant, is screened out from further VMT analysis.

- The revised variant would result in a total net increase of 130,000 square feet of new building area compared to the draft EIR variant. The revised variant would provide approximately 3,853,000 square feet of new building area in addition to the 760,000 square feet retained, which would result in a floor area ratio of 2.59, which is greater than the 0.75 screening threshold.[7]
- The revised variant would add 411 parking spaces to the 1,050 net new spaces provided in the draft EIR variant. Therefore, the revised variant would provide 1,461 net new parking spaces and 4,861 in total. The revised variant would add 3,794,700 net new square footage (4,613,000 square feet in total). The marginal contribution rate would be 0.4 parking spaces per 1,000 square feet. In total, the revised variant would have 1.1 parking spaces per 1,000 square feet, which is 3.1 or 74 percent lower than the existing parking ratio of 4.2 parking spaces per 1,000 square feet. Therefore, similar to the draft EIR variant, the revised variant would meet the screening criterion for a lower parking supply ratio compared to existing conditions and would not substantially induce additional VMT.

In addition, like the draft EIR variant, the revised variant would include features that would qualify as "Active Transportation, Rightsizing, and Transit Projects" and "Other Minor Transportation Projects" and would fit within the general types of projects that would not substantially induce automobile travel (see draft EIR p. 3.B-71). Therefore, impacts of the revised variant related to vehicle miles traveled would be similar to those of the draft EIR variant and would be less than significant.

LOADING IMPACTS

As with the draft EIR variant, localized loading supply information is not available for the revised variant. Therefore, estimated demand cannot be compared with the proposed loading supply for each parcel. Unmet demand could result in secondary effects on public transit buses or on people walking, biking, or driving, such as blocking, creating queues, and/or resulting in conflicts at sidewalks, crosswalks, Muni routes, and bike facilities. Similar to the impact determination for the draft EIR variant, it is conservatively assumed that the revised variant could result in significant loading impacts. Mitigation Measure M-TR-6 requires development of a plan to satisfy freight and commercial and passenger loading demand through loading supply and management at each phase or building, to reduce the associated secondary impacts to less-than-significant levels.

OVERALL PROJECT-LEVEL CONCLUSION

The revised variant would not result in new or greater impacts than those discussed for the draft EIR variant. However, the revised variant would result in less of an impact related to transit delay. Because the vehicle traffic associated with the revised variant would be less than vehicle traffic generated by the draft EIR variant, the revised variant would have a lower contribution to transit delay impacts. Therefore, Mitigation Measures M-TR-4a and M-TR-4b, which were identified for the draft EIR variant, would not be required to reduce transit impacts for the revised variant.

[7] San Francisco Planning Department, *Vehicle Miles Traveled (VMT)/ Induced Automobile Travel,* February 14, 2019, last updated October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines, accessed September 18, 2023. Table 2 on p. L-14 states that the proposed project needs to have a floor area ratio of greater than or equal to 0.75 to meet additional screening criterion 2 (proximity to transit stations) for a detailed VMT analysis,

Other mitigation measures related to construction and loading impacts described in the draft EIR (and as listed above in the introduction to this transportation and circulation analysis) would also apply to the revised variant.

CUMULATIVE IMPACTS

POTENTIALLY HAZARDOUS CONDITIONS, ACCESSIBILITY AND EMERGENCY ACCESS, AND VEHICLE MILES TRAVELED IMPACTS

The land use program under the revised variant would result in minimal changes to transportation and circulation effects related to potentially hazardous conditions, accessibility of pedestrians and bicycles, emergency vehicle access, and vehicle miles traveled under cumulative conditions, compared to the draft EIR variant. Thus, the impact analysis set forth in the draft EIR for the variant would also apply to the revised variant. For this reason, cumulative impacts related to these topics under the revised variant would be substantially similar to the corresponding cumulative impacts under the draft EIR variant and would be less than significant.

CONSTRUCTION IMPACTS

The revised variant would require construction activities and phasing similar to those of the draft EIR variant. The construction duration, intensity, and number of workers and truck trips accessing the project site would not change significantly. As described for the draft EIR variant, portions of the project site under the revised variant would also be located within both public and private rights-of-way. The portions within the public right-of-way would be subject to City regulations that would require coordination and review with public works and SFMTA to avoid transportation-related construction impacts. However, the portions within the private right-of-way would not be subject to those City regulations, and the draft EIR concluded that construction activities on those portions could interfere with emergency access or substantially conflict with people walking, bicycling, or driving or public transit operations to result in a significant impact. The significant cumulative impacts would also occur under the revised variant. Therefore, implementation of Mitigation Measure M-TR-1 is required to reduce the impact to less than significant.

TRANSIT DELAY IMPACTS

The draft EIR concluded that the proposed variant, in combination with cumulative projects in the vicinity of the project site, would contribute considerably to a substantial cumulative delay to the 57 Parkmerced route (inbound and outbound), the 28 19th Avenue and 28R 19th Avenue combined route (southbound), and SamTrans Route 122 (northbound). The revised variant's impact would be significant and unavoidable even with the implementation of Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3.

These significant cumulative impacts would also occur under the revised variant. Because the revised variant would generate fewer weekday p.m.-peak-hour external vehicle trips and would generate less traffic on 20th Avenue by relocating parking spaces, it would contribute less to the cumulative transit delay than the draft EIR variant. However, the reduction in vehicle trips (5.7 percent from the draft EIR variant, 3.8 percent from the proposed project) would not reduce the significant cumulative impact to a less-than-significant level, and the revised variant's contribution would be cumulatively considerable.

Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 would apply to the revised variant as they would to the draft EIR variant. However, as described in the draft EIR, the effectiveness of these mitigation measures

cannot be guaranteed. The delay reductions associated with Mitigation Measure M-TR-4a would apply, and the precise travel time (and thus the transit delay reduction) of any given segment cannot be quantified. Mitigation Measure M-TR-4b would apply to the corridor of Muni Route 57, but the effectiveness would be subject to uncontrollable factors including the arrival of buses within the traffic signal cycle and the location of buses in the traffic stream. Furthermore, the transit signal priority plan would be subject to SFMTA's approval. Mitigation Measure M-TR-3 requires a fair-share contribution from the project sponsor but does not itself provide for the installation of the CCTVs. The CCTVs allow SFMTA staff to make design changes to reduce delay but do not themselves guarantee delay reduction. For these reasons, this impact would be significant and unavoidable with mitigation, as under the draft EIR variant.

LOADING IMPACTS

Given the absence of localized loading supply information, the draft EIR conservatively assumed that the draft EIR variant, in combination with the cumulative projects, could have significant loading impacts, such as blocking bus routes and/or bicycle facilities. The characteristics of the revised variant would not affect the draft EIR's significant findings for the variant. As with the draft EIR variant, implementation of Mitigation Measure M-TR-6 would be required to reduce the revised variant's associated secondary impacts to less-than-significant levels.

OVERALL CUMULATIVE CONCLUSION

Under cumulative conditions, the revised variant would not result in new or otherwise different conclusions regarding the significance of potential impacts from those discussed in the draft EIR for the variant. Because of the reduction in external vehicle trips under the revised variant, cumulative transit delay impacts would be reduced compared to the draft EIR variant but would be significant and unavoidable. All mitigation measures described for the draft EIR variant in the draft EIR would also apply to the revised variant and cumulative impact significance findings would be the same as with the draft EIR variant.

2.E.3 Air Quality

The draft EIR variant's impacts on air quality are described and analyzed in draft EIR Section 3D, Air Quality, pp. 3.D-1 through 3.D-86. The air quality data cited in this section are based on the results of memorandums prepared to analyze the air quality impacts of the revised variant (see Attachment E of this RTC document).

CRITERIA POLLUTANT EMISSIONS

The draft EIR concluded that the variant would generate emissions of criteria pollutants and precursors during periods when construction would overlap with operations that would contribute a cumulatively considerable amount of non-attainment criteria pollutants. Overlapping construction-related and operational activities during years 2028 through 2032 would result in a cumulatively considerable net increase in criteria pollutants that would be significant. The draft EIR identified the following mitigation measures for the variant:

- Mitigation Measure M-AQ-1a, Clean Off-Road Construction Equipment
- Mitigation Measure M-AQ-1b, Super-compliant VOC Architectural Coatings during Construction
- Mitigation Measure M-AQ-1c, Clean On-Road Construction Trucks
- Mitigation Measure M-AQ-1d, Super-Compliant VOC Architectural Coatings during Operation

- Mitigation Measure M-AQ-1e, Best Available Emissions Controls for Stationary Emergency Generators
- Mitigation Measure M-AQ-1f, Promote Use of Green Consumer Products
- Mitigation Measure M-AQ-1g, Operational Truck Emissions Reduction
- Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure
- Mitigation Measure M-AQ-1i, Electric Landscaping Equipment
- Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips
- Mitigation Measure M-AQ-1j, Offset Remaining ROG Emissions

Mitigation Measures M-AQ-1a through M-AQ-1d would be implemented to reduce the variant's construction-related emissions of reactive organic gases (ROG) to the greatest extent feasible. Implementing this mitigation would reduce overlapping construction-related and operational emissions for the variant to less than significant for years 2028 through 2030. Mitigation Measures M-AQ-1e through M-AQ-1j and M-TR-4a would reduce the draft EIR variant's operational emissions to the greatest extent feasible. However, even with implementation of those mitigation measures, the draft EIR variant would cause a cumulatively considerable net increase in emissions of non-attainment criteria air pollutants during years 2031 and 2032, when construction and operation would overlap. Therefore, the overall impact of the draft EIR variant would be significant and unavoidable with mitigation.

Compared to the draft EIR variant, the revised variant represents an increase of 411 residential units, a 104,000-square-foot decrease in non-retail sales and service use, and the removal of 100,000 square feet of hotel uses, for a total net increase of 130,000 square feet of new building area. The 130,000-square-foot increase in new residential space would add 125 residential units by including five towers instead of four. This would not increase the footprint but would provide additional square footage as additional floors and units on Block S3.

CONSTRUCTION AND INTERIM-YEAR COMBINED CONSTRUCTION-RELATED AND OPERATIONAL EMISSIONS

The revised variant does not include any changes to the predominant land uses, block configurations, or proposed height plan, with the exception of a tower on Block S3, Block NW2, and Block NW3. Under the revised variant development on Block NW2 would increase by approximately 12,700 square feet (76 residential units) and require additional excavation for 84 parking spaces in Block NW1. The additional development and excavation at Blocks NW2 and NW1 in Phase 1 would be shifted from Phases 2 and 3 and would not change the overall construction duration. There would be no change to the development program or construction schedule for Block NW3. In addition, Block S3 would shift from a midrise building to a tower building and would add 411 residential units to the revised variant. **RTC Table 2-6 through RTC Table 2-9** present the emissions from the revised variant compared to the emissions from the variant as presented in the draft EIR.

RTC Table 2-6 Construction and Net New Interim Operational Emissions by Year for the Draft EIR Variant and Revised Variant

Year	Average Daily Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds/day)[a,b,c]							
	Draft EIR Variant				Revised Variant			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
2024 (construction only)	0.92	15	1.4	0.5	1.0	17	1.6	0.57
2025 (construction only)	3.1	18	3.1	0.8	3.1	17	3.0	0.80
2026 (construction only)	18	23	6.3	1.5	19	23	6.3	1.4
2027 (construction only)	45	31	13	3.4	45	30	13	3.4
2028 (construction and operations)	**78**	36	19	4.1	**78**	36	19	4.1
2029 (construction and operations)	**82**	41	33	6.6	**82**	39	33	6.6
2030 (construction and operations)	**106**	41	35	6.9	**105**	39	35	6.9
2031 (construction and operations)	**124**	46	48	8.7	**127**	46	48	8.8
2032 (construction and operations)	**122**	42	56	10	**125**	41	57	10
Significance Thresholds	54	54	82	54	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[c] Draft EIR variant construction emissions are presented in draft EIR Appendix F, Tables 18 and 19. Net operational emissions were calculated by subtracting the emissions from the existing conditions from the variant emissions, as reported in draft EIR Table 3.D-13, p. 3.D-58. Revised variant construction emissions are presented in RTC Attachment E, Tables 18 and 36. Net operational emissions were calculated by subtracting the emissions from the existing conditions from the revised variant remissions as reported in RTC Attachment E Tables 34a and 34b.

RTC Table 2-7 Mitigated Construction and Net New Interim Operational Emissions by Year for the Draft EIR Variant and Revised Variant

Year	Mitigated Average Daily Construction and Net New Interim Operational Criteria Pollutant Emissions (pounds/day)[a,b,c]							
	Draft EIR Variant[d]				Revised Variant			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2024 (construction only)	0.4	1.5	0.9	0.2	0.39	1.8	1.0	0.19
2025 (construction only)	1.4	2.6	2.5	0.5	1.4	2.5	2.5	0.45
2026 (construction only)	4.7	5.5	5.7	1.0	4.7	5.4	5.6	1.0
2027 (construction only)	8.9	7.8	8.7	1.6	9.0	7.7	8.7	1.6
2028 (construction and operations)	24	~~15~~13	18	~~3.3~~3.2	24	13	19	3.3
2029 (construction and operations)	48	~~24~~22	28	~~5.1~~5.0	48	22	32	5.7
2030 (construction and operations)	53	~~27~~24	31	~~5.6~~5.5	53	23	34	6.1
2031 (construction and operations)	**72**	~~36~~31	43	~~7.8~~7.6	**72**	31	43	7.7
2032 (construction and operations)	**83**	~~35~~28	50	~~9.0~~8.8	**83**	28	51	9.0
Significance Thresholds	54	54	82	54	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout.
[C] Net mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the draft EIR variant, as reported in draft EIR Table 3.D-13, p. 3.D-58. For the revised variant, net mitigated operational emissions were calculated by subtracting the emissions from the existing conditions from the revised variant emissions, as reported in RTC Attachment E Tables 35a and 35b.
[d] The mitigated operational emissions in the draft EIR incorrectly included the unmitigated emissions from the emergency generators. The draft EIR variant emissions from 2028 through 2032 are corrected with mitigated emissions from the emergency generators. Deletions are shown in strikethrough; new text is double-underlined.

RTC Table 2-8 Net New Operational Emissions for the Draft EIR Variant and Revised Variant at Buildout

Emissions Source	Criteria Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]				Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISITING CONDITIONS [c]																
Architectural Coating	0.1	0	0	0	0.5	0	0	0	0.1	0	0	0	0.5	0	0	0
Consumer Products	0.4	0	0	0	2.2	0	0	0	0.4	0	0	0	2.2	0	0	0
Landscaping	<0.1	0	0	0	0.3	0	0	0	<0.1	0	0	0	0.3	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*
FULL BUILDOUT EMISSIONS (2032)																
Architectural Coating	2.6	0	0	0	14	0	0	0	2.7	0	0	0	15	0	0	0
Consumer Products	11	0	0	0	59	0	0	0	11	0	0	0	61	0	0	0
Landscaping	3.0	0.2	<0.1	<0.1	16	1.3	0.1	0.1	3.0	0.2	<0.1	<0.1	16	1.3	0.1	0.1
Mobile	4.9	5.5	10.2	1.8	27	30	56	9.7	4.8	5.6	11	1.9	27	31	59	10
Emergency Generators	0.1	1.4	<0.1	<0.1	0.6	7.9	0.3	0.3	0.1	1.5	<0.1	<0.1	0.60	8.1	0.3	0.3
Total Variant Emissions	*21*	*7*	*10*	*1.8*	*117*	*39*	*56*	*10*	*22*	*7.3*	*11*	*1.9*	*120*	*40*	*59*	*11*

Emissions Source	Criteria Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]				Annual Emissions (tons/year)				Average Daily Emissions (pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
NET NEW EMISSIONS (2032)[d]																
Net New Variant Emissions	***21***	*7.1*	*10*	*1.8*	***114***	*39*	*56*	*10*	***21***	*7.2*	*11*	*1.9*	***117***	*40*	*59*	*11*
Significance Threshold	10	10	15	10	54	54	82	54	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NOx = nitrogen oxides; PM = particulate matter; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[C] Operational emissions from existing conditions were calculated using CalEEMod default data and emission factors based on the existing land use types provided by the project sponsor and CalEEMod defaults.
[D] Net new emissions were calculated as the difference between full buildout variant emissions and existing condition emissions.

RTC Table 2-9 Net New Mitigated Operational Emissions for the Draft EIR Variant and Revised Variant at Buildout

Emissions Source or Year	Criteria Air Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	(tons/year)				(pounds/day)[b]				(tons/year)				(pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
EXISTING CONDITIONS [c]																
Architectural Coating	<0.1	0	0	0	0.5	0	0	0	<0.1	0	0	0	0.5	0	0	0
Consumer Products	0.4	0	0	0	2.2	0	0	0	0.4	0	0	0	2.2	0	0	0
Landscaping	<0.1	0	0	0	0.3	0	0	0	<0.1	0	0	0	0.3	0	0	0
Natural Gas Use	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1
Total Existing Emissions	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*	*0.5*	*<0.1*	*<0.1*	*<0.1*	*3.0*	*0.4*	*<0.1*	*<0.1*
MITIGATED FULL BUILDOUT EMISSIONS (2032)																
Architectural Coating	0.3	0	0	0	2	0	0	0	0.30	0	0	0	1.6	0	0	0
Consumer Products	11	0	0	0	59	0	0	0	11	0	0	0	61	0	0	0
Landscaping	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	4.4	4.9	9.1	1.6	24	27	50	8.7	4.4	5.0	9.7	1.7	24	28	53	9.2
Emergency Generators[e]	≤0.1	~~1.4~~0.2	<0.1	<0.1	~~0.6~~0.4	~~7.9~~1.0	~~0.3~~<0.1	~~0.3~~<0.1	<0.1	0.2	<0.1	<0.1	0.4	1.1	<0.1	<0.1
Total Mitigated Variant Emissions	*16*	*~~6.4~~5.1*	*~~9.2~~9.1*	*1.6*	*~~86~~85*	*~~35~~28*	*50*	*~~9.0~~8.8*	*16*	*5.2*	*9.7*	*1.7*	*87*	*29*	*53*	*9.3*

Emissions Source or Year	Criteria Air Pollutant Emissions[a]															
	Draft EIR Variant								Revised Variant							
	(tons/year)				(pounds/day)[b]				(tons/year)				(pounds/day)[b]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
MITIGATED NET NEW EMISSIONS (2032) [D]																
Net New Mitigated Variant Emissions	***15***	*~~6.3~~ 5.0*	*~~9.2~~ 9.1*	*1.6*	***~~83~~ 82***	*~~35~~ 28*	*50*	*~~9.0~~ 8.8*	***15***	*5.2*	*9.7*	*1.7*	***84***	*28*	*53*	*9.3*
Significance Threshold	10	10	15	10	54	54	82	54	10	10	15	10	54	54	82	54
Exceeds Threshold?	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No	**Yes**	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: CalEEMod = California Emissions Estimator Model; NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gases

NOTES:

Bold values = threshold exceedance

[a] Emissions estimated using methods consistent with CalEEMod® version 2022.1.
[b] Operational emissions shown represent activity and emissions across 365 days per year.
[C] Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use type and energy use rates provided by the project sponsor.
[D] Net new emissions were calculated as the difference between partial buildout emissions for each year and existing-condition emissions.
[E] The mitigated emissions in the draft EIR incorrectly included the unmitigated emissions from the emergency generators. The draft EIR variant emissions here are corrected with mitigated emissions from the emergency generators. Deletions are shown in ~~strikethrough~~; new text is <u>double-underlined</u>.

The construction activity analyzed for the revised variant would change for (1) Phases 1-3 to account for the northwest corner changes described above, and (2) Phase 6 to account for the conversion change from a residential mid-rise building to a tower (Block S3). The construction activities in Phase 1 would take place from 2024 through 2027 and Phase 6 would take place from 2029 through 2032, as with the draft EIR variant. Phase 6 would require an additional three months, as described further below. The construction schedule for all other phases would remain the same as analyzed for the draft EIR variant. The daily activities during excavation in Phase 1 would slightly increase to account for the increase in underground parking spaces and daily activity during excavation in Phases 2 and 3 would slightly decrease due to the reduction in parking spaces. Compared to the draft EIR variant, construction-related impacts on air quality between 2024 and 2027 would change slightly under the revised variant due to the shift in parking between Phases 1, 2, and 3. Operational emissions in 2028 would increase slightly. Phase 1 becomes operational earlier in 2028 than Phases 2 and 3. The shift of dwelling units from Phases 2 and 3 to Phase 1 results in more dwelling units being online for more of the year. As a result, as shown in RTC Table 2-6 and similar to the draft EIR variant, this would not exceed the thresholds for years 2024 through 2027.

Compared to the draft EIR variant, the demolition and grading, shoring, and excavation subphases of Phase 6 of the revised variant would be shorter; the Phase 6 building construction subphase would increase by two months; the Phase 6 paving and architectural coating subphases would increase by a few days; and the sequencing would change slightly. Overall, these changes would extend the Phase 6 construction period by three months.

Diesel equipment horsepower-hours would decrease during Phase 6 of the revised variant because an electric tower crane[8] would be used instead of the diesel crane analyzed for Phase 6 of the variant. In addition, the revised variant proposes more excavation and less grading during Phase 6 than the variant, because with excavation for the tower, the site would not need a level, graded surface.[9] Therefore, the grader would not be needed for Phase 6 and was removed from the equipment list. All other changes to construction equipment use would result from changes to the schedule duration as discussed above. In summary, construction equipment changes would occur in Phase 6 only where graders are removed and cranes are electrified.

In addition, compared to the draft EIR variant, onsite truck emissions would change slightly in Phase 6 because the updates to the construction schedule would change the calculated truck run and idle hours, trips, and vehicle miles traveled for each year. Hauling trips would increase in Phase 6 to reflect the off-hauling of additional 26,890 cubic yards of excavated material.

Thus, like the draft EIR variant, the revised variant's construction-related impacts on air quality, when overlapping with operational impacts in years 2031 and 2032, would be significant and unavoidable with mitigation. Mitigation Measures M-AQ-1e through M-AQ-1j and M-TR-4a as identified in the draft EIR and discussed above would also apply to the revised variant.

As discussed in the draft EIR, the average daily operational emissions for the variant would exceed thresholds for ROG at full buildout. Mitigation Measures M-AQ-1d through M-AQ-1j and M-TR-4a would reduce

[8] Tower cranes are always electric and would be powered from the existing electrical grid.
[9] Less grading is generally needed when excavating a large area because the larger size of the hole allows for a more gradual slope. This is consistent with the updated construction equipment, which removed the grader from the grading, shoring, excavating subphase in Phase 6.

operational emissions, but the operational air quality impact would be significant and unavoidable with mitigation because ROG emissions would continue to exceed the thresholds.

Operational emissions of all criteria pollutants would change with the revised variant because of (1) the addition of one diesel emergency backup generator as a result of the increased height of the building at Block S3, and (2) the additional vehicle miles traveled associated with more residential units.

Unmitigated nitrogen oxides (NOx) emissions would increase from the draft EIR variant to the revised variant because of the addition of the diesel emergency backup generator, while emissions of particulate less than 10 microns and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$) would increase because of the additional residential VMT. For the mitigated scenario, NOx emissions would decrease from the draft EIR variant to the revised variant. Mitigated PM_{10} and $PM_{2.5}$ emissions show an increase from the draft EIR variant to the revised variant, similar to the draft EIR unmitigated emissions, as a result of the increase in residential vehicle trips. Emissions in 2028 would also increase because more units will be operational sooner with the shift in units from Phases 2 and 3 to Phase 1. Note that Table 3.D-9 (p. 3.D-50) and Table 3.D-14 (p. 3.D-59) incorrectly reported unmitigated generator emissions instead of mitigated emissions for the variant. These corrections are shown in RTC Table 2-8, p. 2-36, and RTC Table 2-10, p. 2-44, in ~~strikethrough~~ and double underline for the reader's reference.

With the revised variant, ROG emissions associated with consumer products would increase slightly as compared to the draft EIR variant because of the increase in building square footage to add additional units for Phase 6, and thus would also exceed the thresholds of significance. Mitigation Measures M-AQ-1d through M-AQ-1j and M-TR-4a would be required to reduce ROG emissions; however, the impact of the revised variant would be significant and unavoidable with mitigation, the same impact conclusion as reported in the draft EIR for the variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to construction and operational emissions of all criteria pollutants.

SENSITIVE RECEPTORS AND POLLUTANT CONCENTRATIONS

The draft EIR analyzed the potential excess cancer risk and $PM_{2.5}$ concentration from the draft EIR variant and concluded that the variant could generate emissions that could expose sensitive receptors to substantial pollutant concentrations, but that with identified mitigation measures, the impact would be reduced to less than significant. The following analyzes the revised variant's excess cancer risk and $PM_{2.5}$ concentration.

EXCESS CANCER RISK

The draft EIR determined that construction-related and operational activities for the variant would result in increases in emissions of diesel particulate matter that would affect the lifetime excess cancer risk for both onsite and offsite sensitive receptors. The draft EIR concluded that the maximum excess cancer risk for the variant at offsite and onsite sensitive receptors would exceed the thresholds of significance. However, the maximum excess cancer risk would be below the thresholds after implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. Therefore, the lifetime excess cancer risk associated with exposure to diesel particulate matter emissions and vehicle exhaust generated during construction, and from diesel emergency backup generators during operations, would be less than significant with mitigation for the draft EIR variant.

With the exceptions discussed above on p. 2-33, the revised variant would involve mostly the same amount of construction activity as previously analyzed for the draft EIR variant, but it would shift some of the construction activity from Phases 2 and 3 to Phase 1 in the northwest corner of the project site. The height, width, and length dimensions of Phase 6 would remain the same, with the exception of the tower on Block S3 and the changes to grading and equipment described above. The changes to grading and equipment resulted in less equipment activity and emissions compared to the draft EIR variant for Phase 6. The height change would require one additional diesel emergency backup generator for operations, which would slightly counteract the decrease in emissions from construction.

For the unmitigated scenario, the addition of the diesel emergency backup generator and removal of diesel construction equipment would affect the location of the maximum modeled worker impact for Phase 6. Before the addition of the generator, the maximum worker impact would be driven by the diesel construction equipment and would occur closer to the source. The reduction in unmitigated emissions from Phase 6 reduced health impacts in this area. With the revised variant, the diesel emergency backup generator would drive the maximum modeled worker impact. Because of the buoyant exhaust plume emitted by the generator, the increase in operational emissions from the additional generator increased concentrations at locations farther from the source. This, in combination with the emissions from the other phases, caused the maximum modeled worker impact for the unmitigated scenario to be farther from Phase 6.

As with the draft EIR variant, the lifetime excess cancer risk from the revised variant would also be reduced to less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to lifetime excess cancer risk.

$PM_{2.5}$ CONCENTRATION

The draft EIR concluded that the impact of the variant on annual average concentrations of $PM_{2.5}$ from construction and operation of emergency backup generators would be less than significant. In terms of building square footage, the amount of construction would be the same for the revised variant as for the draft EIR variant, with the minor differences described above. One additional diesel emergency backup generator would be required for operations because of the tower on Block S3, but this would not substantially add to the annual average $PM_{2.5}$ concentrations. Therefore, the impact from the revised variant would be the same as the impact from the draft EIR variant: less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to annual average concentrations of $PM_{2.5}$.

RTC Table 2-10 through RTC Table 2-13 present the lifetime excess cancer risk and annual average $PM_{2.5}$ concentrations for the revised variant compared to those from the variant.

ODORS

The draft EIR concluded that both construction-related and operational odor impacts would be less than significant. The revised variant and the draft EIR variant would use the same construction equipment and application of architectural coatings. As with the draft EIR variant, odors from these sources with the revised variant would be localized and generally confined to the immediate area surrounding the development area. After buildout of the revised variant, localized odors would be emitted by the same sources as under the variant, such as solid waste collection, food preparation, and maintenance activities. Odors from these

sources should have minimal effects on onsite and offsite sensitive receptors. Therefore, odor impacts from the revised variant would be the same as those from the draft EIR variant and would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to odors.

RTC Table 2-10 Lifetime Excess Cancer Risk for the Draft EIR Variant and Revised Variant

	Lifetime Excess Cancer Risk (chances per 1 million)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
Emissions Source	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Coordinates (UTM X, UTM Y)	(546300, 4176000)	(546240, 4176040)	(546320, 4175960)	(546020, 4175620)	(546240, 4175980)	(546240, 4175980)	(546300, 4176000)	(546240, 4176040)	(546320, 4175960)	(546060, 4175900)	(546240, 4175980)	(546240, 4175980)
Existing Lifetime Excess Cancer Risk (2020)	125	86	94	27	91	91	125	86	94	30	91	91
Meets APEZ Criteria?	Yes	No	No	No	No	No	Yes	No	No	No	No	No
Variant Cancer Risk	**24.4**	6.4	**13.2**	5.1	**18.3**	**13.9**	**23.5**	6.1	**12.8**	4.8	**18.9**	**14.7**
Exposure Scenario[a]	S3	S3	S3	S1	S12	S12	S3	S3	S2	S1	S12	S12
Existing + Variant Cancer Risk[b]	149	92	107	32	109	105	148	92	106	36	110	105
Meets APEZ Criteria with Variant Contribution?	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes
THRESHOLDS FOR DRAFT EIR VARIANT AND REVISED VARIANT CONTRIBUTION [c]												
Significance Threshold	7	10	10	10	10	10	7	10	10	10	10	10
Threshold Exceeded?	**Yes**	No	**Yes**	No	**Yes**	**Yes**	**Yes**	No	**Yes**	No	**Yes**	**Yes**

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; S1 = Scenario 1; S2 = Scenario 2; S3 = Scenario 3; S12 = Scenario 12; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance.

NOTES:

Bold values = threshold exceedance

[a] S1 = Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed; S2 = Scenario 2: Exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed; S3 = Scenario 3: Exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed; S12 = Scenario 12: Exposure to full buildout operations once construction is complete.

[B] Existing + Proposed Project and Existing + Variant Total risk may not appear to add due to rounding.

[C] These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

RTC Table 2-11 Annual Average $PM_{2.5}$ Concentrations for the Draft EIR Variant and Revised Variant

	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
Emissions Source	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing $PM_{2.5}$ concentration (2020)	8.2	9.1	9.5	8.3	8.3	8.2	8.2	9.1	9.5	8.3	8.2	8.2
Meets APEZ Criteria?	No	No	No	No	No	No	No	No	No	No	No	No
Variant $PM_{2.5}$ concentration	0.33	0.29	0.20	0.59	0.28	0.15	0.28	0.29	0.20	0.50	0.25	0.15
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7	S1	S1	S1	S1	S8	S7
Existing + Variant Annual Average $PM_{2.5}$ concentration[b]	8.6	9.4	9.7	8.8	8.6	8.4	8.5	9.4	9.7	8.8	8.5	8.4
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No	No	No	No	No	No	No
THRESHOLDS FOR DRAFT EIR VARIANT AND REVISED VARIANT CONTRIBUTION[c]												
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No[c]	No	No	No[c]	No	No	No[c]	No	No	No[c]	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: $\mu g/m^3$ = micrograms per cubic meters; APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; S1 = Scenario 1; S7 = Scenario 7; S8 = Scenario 8; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance.

NOTES:

[a] S1 = Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed; S7 = Scenario 7: Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to operation of completed phases; S8 = Scenario 8: Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases.

B Existing + Proposed Project and Existing + Variant Total $PM_{2.5}$ concentration may not appear to add due to rounding.

C These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

RTC Table 2-12 Mitigated Lifetime Excess Cancer Risk for the Draft EIR Variant and Revised Variant

	Lifetime Excess Cancer Risk (chances per 1 million)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
Scenario/Receptor Type	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Location (UTM X, UTM Y)	(546220, 4175500)	(546240, 4176040)	(546320, 4175940)	(546160, 4175600)	(546220, 4175640)	(546220, 4175900)	(546220, 4175500)	(546240, 4176040)	(546320, 4175940)	(546160, 4175600)	(546220, 4175640)	(546220, 4175900)
Existing Lifetime Excess Cancer Risk (2020)	57	86	94	45	71	66	57	86	94	45	71	66
Meets APEZ Criteria?	No	No	No	No	No	No	No	No	No	No	No	No
Variant Cancer Risk	8.9	2.9	4.4	2.9	6.2	4.0	8.9	2.8	4.4	2.9	6.2	4.0
Exposure Scenario[a]	S6	S3	S3	S2	S10	S9	S6	S3	S3	S2	S10	S9
Existing + Variant Cancer Risk[b]	66	89	98	48	77	70	66	89	98	48	77	70
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No	No	No	No	No	No	No
THRESHOLDS FOR DRAFT VARIANT AND REVISED VARIANT CONTRIBUTION[c]												
Significance Threshold	10	10	10	10	10	10	10	10	10	10	10	10
Threshold Exceeded?	No	No	No	No	No	No	No	No	No	No	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: µg/m^3 = micrograms per cubic meters; APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; S2 = Scenario 2; S3 = Scenario 3; S6 = Scenario 6; S9 = Scenario 9; S10 = Scenario 10; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance

NOTES:

[a] S2 = Scenario 2: Exposure to construction beginning at the start of Phase 2 plus exposure to operation after construction is completed; S3 = Scenario 3: Exposure to construction beginning at the start of Phase 3 plus exposure to operation after construction is completed; S6 = Scenario 6: Exposure to construction beginning at the start of Phase 6 plus exposure to operation after construction is completed; S9 = Scenario 9: Phase 3 occupants: exposure to subsequent construction beginning after Phase 3 construction is complete plus exposure to operation of completed phases; S10 = Scenario 10: Phase 4 occupants: Exposure to subsequent construction beginning after Phase 4 construction is complete plus exposure to operation of completed phases.

[b] Existing + Proposed Project and Existing + Variant Total cancer risk may not appear to add due to rounding.

[c] These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

RTC Table 2-13 Mitigated Annual Average $PM_{2.5}$ Concentrations for the Draft EIR Variant and Revised Variant

Scenario/Receptor Type	Annual Average $PM_{2.5}$ Concentrations ($\mu g/m^3$)											
	Draft EIR Variant						Revised Variant					
	Offsite MEI Receptors				Onsite MEI Receptors		Offsite MEI Receptors				Onsite MEI Receptors	
	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare	Residential	Daycare	Preschool to 8th Grade Student	Worker	Residential	Daycare
Receptor Coordinates (UTM X, UTM Y)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)	(545920, 4175580)	(546240, 4176040)	(546320, 4175960)	(546020, 4175600)	(546000, 4175660)	(545940, 4175920)
Existing Annual Average $PM_{2.5}$ Concentration (2020)	8.3	9.1	9.5	8.3	8.3	8.2	8.2	9.4	9.5	8.3	8.2	8.2
Meets APEZ Criteria?	No	No	No	No	No	No	No	No	No	No	No	No
Exposure Scenario[a]	S1	S1	S1	S1	S8	S7	S1	S1	S1	S1	S8	S7
Variant Annual Average $PM_{2.5}$ Concentration	0.28	0.24	0.17	0.51	0.24	0.14	0.24	0.24	0.17	0.43	0.22	0.14
Existing + Variant Annual Average $PM_{2.5}$ Concentration[b]	8.6	9.3	9.6	8.8	8.5	8.4	8.4	9.6	9.7	8.7	8.4	8.4
Meets APEZ Criteria with Variant Contribution?	No	No	No	No	No	No	No	No	No	No	No	No
THRESHOLDS FOR DRAFT EIR VARIANT AND REVISED VARIANT CONTRIBUTION[c]												
Significance Threshold	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Threshold Exceeded?	No	No	No	No[c]	No	No	No	No	No	No[c]	No	No

SOURCE: Data provided by Ramboll in 2022 and 2024 (see draft EIR Appendix F and RTC Attachment E)

ABBREVIATIONS: $\mu g/m^3$ = micrograms per cubic meters; APEZ = Air Pollutant Exposure Zone; MEI = maximally exposed individual; $PM_{2.5}$ = fine particulate matter less than 2.5 micrometers in aerodynamic diameter; S1 = Scenario 1; S7 = Scenario 7; S8 = Scenario 8; UTM = Universal Transverse Mercator; UTM X = eastward-measured distance; UTM Y = northward-measured distance

NOTES:

[a] S1 = Scenario 1: Exposure to construction beginning at the start of construction plus exposure to operation after construction is completed; S7 = Scenario 7: Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction is complete plus exposure to operation of completed phases; S8 = Scenario 8: Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction is complete plus exposure to operation of completed phases.

[b] Existing + Proposed Project Total risk may not appear to add due to rounding.

[c] These thresholds apply only if the sensitive receptor meets the APEZ criteria or if the sensitive receptor does not meet the APEZ criteria but would meet the APEZ criteria as a result of the project.

OVERALL PROJECT-LEVEL CONCLUSION

Overall, impacts of the revised variant would be the same as the draft EIR variant's impacts and would not result in any new or more severe impacts. As described on draft EIR p. 3.D-83, the air district's project-level criteria air pollutant thresholds are based on levels below which new sources would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in non-attainment. The draft EIR concluded that the variant would result in a cumulatively considerable impact on regional air quality despite implementation of Mitigation Measures M-AQ-1a through M-AQ-1j and M-TR-4a. The draft EIR also concluded that the lifetime excess cancer risk from the variant would also be reduced to less than significant with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a. As stated above, the revised variant would result in generally the same impacts as the draft EIR variant, and thus, the mitigation measures described above would also apply to the revised variant. These measures would reduce the emissions and health risks associated with the revised variant. However, like the draft EIR variant, the revised variant would result in a cumulatively considerable impact on regional air quality that would be significant and unavoidable.

CUMULATIVE IMPACTS

As discussed above, the potential for the revised variant to result in significant criteria air pollutant emissions, and therefore a cumulatively considerable contribution to non-attainment criteria pollutants, is addressed above. Therefore, no separate analysis of cumulative criteria air pollutant emissions is required.

The draft EIR concluded that the variant would emit DPM and $PM_{2.5}$ emissions that would lead to a significant health risk impact. This impact, combined with the health risk impact from DPM and $PM_{2.5}$ emissions from the construction and operation of cumulative projects, would result in a significant cumulative health risk impact and mitigation is required.

As discussed above, for all offsite and onsite MEI receptors, with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the revised variant would not exceed the excess lifetime cancer risk and annual average $PM_{2.5}$ concentration thresholds. As with the draft EIR variant, because the existing background cancer risk and annual average $PM_{2.5}$ concentrations at the mitigated MEI locations are well below Air Pollutant Exposure Zone (APEZ) criteria, the health risks from cumulative projects would need to be substantial to cause the MEI to meet the APEZ criteria. Similar to the draft EIR variant, for all offsite and onsite MEI receptors, with implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, the excess lifetime cancer risk and annual average $PM_{2.5}$ concentrations would not exceed significance thresholds for the revised variant. Because the existing background cancer risk and annual average $PM_{2.5}$ concentrations at the mitigated MEI locations are well below the APEZ criteria, the cumulative project health risk contribution would need to be substantial to cause the MEI locations to meet the APEZ criteria. This is unlikely given the size, timing, and characteristics of the cumulative projects.

Therefore, like the draft EIR variant, with mitigation, the revised variant would not result in a considerable contribution to significant cumulative health risk impacts and the impact would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative air quality impacts.

2.E.4 Noise and Vibration

The noise and vibration impacts of the proposed project and variant are described and analyzed in draft EIR Section 3.C, Noise and Vibration, pp. 3.C-1 through 3.C-58.

CONSTRUCTION NOISE AND VIBRATION IMPACTS

The draft EIR, on pp. 3.C-21 through 3.C-34, concluded that construction noise impacts for the variant would be significant and unavoidable with mitigation, as construction noise levels would exceed 10 dBA-weighted decibels (dBA) above the ambient noise level at the nearest sensitive receptors for multiple phases of project construction during daytime hours. Nighttime construction noise impacts were also identified as significant and unavoidable, as estimated interior noise levels at the nearest residential sensitive receptors would reach or exceed the 45 dBA interior standard for a substantial duration of time. Mitigation Measure M-NO-1, Construction Noise Control, would reduce the severity of construction-related noise on sensitive receptors; however, the impact would be significant and unavoidable with mitigation.

Like the draft EIR variant, the revised variant would involve demolition, site preparation, excavation/grading, building construction, and paving. These construction activities would generate temporary noise increases in the project vicinity for the duration of construction work. The revised variant does not propose any changes to building locations on the project site. The building envelopes would be the same as for the variant, with the exception of Block NW2 and Block S3, and slight shift in the southeast boundary of Block NW3. The revised variant would involve (1) additional excavation at Block NW1 and additional construction for the extended building on Block NW2 during Phase 1 and (2) additional vertical construction during Phase 6 for the tower on Block S3 to accommodate additional residential units. Construction activities for Blocks NW1 and NW2 would not change the distance to existing and proposed sensitive receptors or resulting calculated noise levels as analyzed in the draft EIR. The construction activities for Block S3 would be elevated, would occur farther from existing and proposed sensitive receptors, and would require an estimated three additional months of construction time. Therefore, the draft EIR variant and the revised variant would involve the same construction activities, level of construction intensity and equipment (i.e., noise sources), and closest distances between these noise- and vibration-producing activities and the nearest representative noise-sensitive receptors studied in the draft EIR.

The revised variant would have the same significant construction noise impacts because the maximum combined noise levels from operation of the two noisiest pieces of equipment associated with each construction phase would be the same as with the draft EIR variant. Mitigation Measure M-NO-1 would be required for the revised variant; however, as with the variant, construction noise impacts would be significant and unavoidable with mitigation.

Draft EIR Section 3.C, Noise and Vibration, pp. 3.C-36 through 3.C-36, concluded that construction vibration impacts would be less than significant, as the vibration levels would not exceed the 0.3 peak particle velocity (PPV) threshold for older structures and the 0.25 PPV threshold for historic structures. Construction for the revised variant would occur within the same footprint as the draft EIR variant; thus, the distances to the closest structures would be the same as with the draft EIR variant. In addition, the revised variant would use the same construction equipment as the draft EIR variant and therefore would not result in more vibration. Construction vibration levels for construction equipment would therefore have the same less-than-significant construction vibration impacts and no mitigation measures would be required under the revised

variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the construction noise impacts.

OPERATIONAL IMPACTS—STATIONARY NOISE SOURCES

The draft EIR, on pp. 3.C-38 through 3.C-40, concluded that the primary difference for the variant with respect to operational noise is that the Authentic Church would not be a sensitive receptor with respect to potential operational noise increases, as it would be demolished and developed as part of Block E3. Under the draft EIR variant, other adjacent sensitive receptors, including those for the proposed project, would still have the potential to experience a significant impact because stationary equipment could exceed the standards of the San Francisco Noise Ordinance. Implementation of Mitigation Measure M-NO-4, Noise Analysis and Attenuation, was identified to reduce mechanical equipment noise to meet the standards of noise ordinance sections 2909(a), 2909(b), and 2909(d). Noise impacts on sensitive receptors associated with the operation of stationary equipment under the draft EIR variant would be less than significant with mitigation.

Compared to the draft EIR variant, operation of the revised variant would generally add a similar increase in stationary-source noise sources to the area, such as individual heating, ventilation, and air conditioning (HVAC) equipment for the residential units. Conversion of the hotel use to residential use under the revised variant and conversion of commercial/office to residential uses would likely result in smaller HVAC units with lower noise-generating potential. The proposed residential tower on Block S3 under the revised variant would result in the operation of rooftop HVAC systems at increased height compared to the buildings described for the variant in the draft EIR, so they would be farther away from sensitive receptors. Block S3 would require an additional diesel emergency backup generator because of the increased building height. As with the draft EIR variant, the emergency generators used under the revised variant would be subject to weekly testing. Although these generators would be temporary, the potential for multiple generators to be operated within 100 to 200 feet of each other could substantially increase noise levels if operations were to overlap. Consequently, the land use changes under the revised variant would have stationary-source noise impacts similar to those discussed on draft EIR pp. 3.C-38 through 3.C-40. Mitigation Measure M-NO-4 would apply to the revised variant and would reduce mechanical equipment noise to meet the standards of noise ordinance sections 2909(a), 2909(b), and 2909(d). Therefore, impacts would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the operation of stationary equipment.

OPERATIONAL IMPACTS—AMPLIFIED SOUND

The draft EIR concluded that operational noise associated with crowd gatherings and amplified music at the two open space areas for events (Town Square and the Commons) may result in potentially significant noise impacts on nearby sensitive receptors in excess of standards established in the noise ordinance. Mitigation Measure M-NO-5, Noise Limits for Outdoor Amplified Sound, would be implemented to require specific performance standards consistent with the restrictions of the police code to ensure that events employing amplified sound would not result in a substantial permanent increase in ambient noise levels in the immediate project vicinity, or expose persons to noise levels in excess of the standards in the noise ordinance. Therefore, this impact would be less than significant with mitigation for the draft EIR variant.

The revised variant would have the same amount of open space as the variant in the same locations. Therefore, the revised variant would have the same potentially significant impact with respect to amplified

sound as the draft EIR variant and would require implementation of Mitigation Measure M-NO-5. Therefore, the impact of periodic and temporary noise increases from amplified sound associated with various proposed events under the revised variant would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to noise increases from amplified sound.

OPERATIONAL IMPACTS—TRAFFIC AND LOADING

Draft EIR pp. 3.C-43 through 3.C-50 concluded that traffic-generated noise increases on the roadway links most affected by the variant would be less than significant and no mitigation measures are required. Similarly, on-street loading activities would be temporary and intermittent when they do occur, and noise from this activity would not substantially increase ambient noise levels by 3 dBA or more. Therefore, the draft EIR determined that increases in truck loading activities from the draft EIR variant would be less than significant and no mitigation measures are required.

The revised variant would replace some of the commercial uses and all of the hotel uses with residential uses. Similar to the draft EIR variant, the revised variant would increase traffic volumes on local roadways used to access the project site as well as the surrounding roadway network. However, the revised variant's traffic noise increases along the roadway segments would not exceed the 3 dBA or 5 dBA standards for the applicable noise compatibility standards, as shown in **RTC Table 2-14**.[10] As discussed in Section 3.D.4, Transportation and Circulation, p. 2-23, the revised variant would generate 7.4 percent fewer vehicle trips than the variant analyzed in the draft EIR because the non-retail sales and service and hotel uses displaced by residential uses have higher trip generation rates. Therefore, similar to the draft EIR variant, increases in roadway traffic noise from operation of the revised variant would be less than significant and no mitigation measures are required.

The revised variant would reduce non-retail sales and service uses and remove the hotel use. As a result, less on-street loading would occur than under the variant analyzed in the draft EIR. Therefore, onsite loading impacts of the revised variant would be similar to or less than the draft EIR variant and the impact would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to traffic-generated noise increases or onsite loading operations.

OVERALL REVISED VARIANT-LEVEL CONCLUSION

Overall, impacts of the revised variant would be similar to the draft EIR variant. The revised variant would result in similar significant and unavoidable construction noise impacts, less-than-significant vibration impacts, operational impacts for stationary equipment and amplified sound that would be less than significant with mitigation, and less-than-significant traffic and loading impacts.

[10] Kittelson & Associates, *Stonestown Volume Spreadsheets for Noise,* May 31, 2023.

RTC Table 2-14 P.M. Peak-Hour Traffic Noise Level increases of the Draft EIR Variant and Revised Variant in the Vicinity of the Project

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Eucalyptus Drive from Middlefield Drive to 25th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	57.7	0.0	No
Eucalyptus Drive from 25th to 19th Avenue	Residential	60	57.7	5 dBA increase in an area <60 dBA L_{dn}	57.7	0.0	57.7	0.0	No
Eucalyptus Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	59.9	3.8	59.7	3.6	No
19th Avenue from Sloat Boulevard to Eucalyptus Drive	Residential	60	68.7	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.3	69.0	0.3	No
19th Avenue from Eucalyptus Drive to Buckingham Way	Residential/ Commercial	60	70.1	3 dBA increase in an area >60 dBA L_{dn}	70.4	0.3	70.4	0.3	No
19th Avenue from Buckingham Way to Holloway Avenue	Residential/ University	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	70.8	0.2	No
19th Avenue from Holloway Avenue Junipero Serra Boulevard	Residential	60	70.6	3 dBA increase in an area >60 dBA L_{dn}	70.8	0.2	70.8	0.2	No
Holloway Avenue from Font Boulevard to 19th Avenue	Residential/ University	60	55.3	5 dBA increase in an area <60 dBA L_{dn}	55.3	0.0	55.3	0.0	No
Holloway Avenue from 19th Avenue to Junipero Serra Boulevard	Residential	60	56.1	5 dBA increase in an area <60 dBA L_{dn}	56.1	0.0	56.1	0.0	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Winston Drive from Lake Merced Boulevard to Buckingham Way	Residential/ University	60	59.5	3 dBA increase in an area >60 dBA L_{dn}	62.0	2.5	61.9	2.4	No
Winston Drive from Buckingham Way to 19th Avenue	Commercial	75	62.8	5 dBA increase in an area <75 dBA L_{dn}	63.4	0.6	63.4	0.6	No
Winston Drive from 19th Avenue to Junipero Serra Boulevard	Residential	60	58.9	5 dBA increase in an area <60 dBA L_{dn}	60.1	1.2	60.0	1.1	No
Buckingham Way from Winston Drive to 19th Avenue	Residential/ University/ Commercial	60	58.4	5 dBA increase in an area <60 dBA L_{dn}	60.9	2.5	60.7	2.3	No
Lake Merced Boulevard from Sunset Boulevard to Winston Drive	Residential	60	69.5	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.2	69.7	0.2	No
20th Avenue from Ocean Avenue to Eucalyptus Drive	Residential	60	57.9	5 dBA increase in an area <60 dBA L_{dn}	58.3	0.4	58.2	0.3	No
Lake Merced Boulevard from Winston Drive to Font Boulevard	University, Golf Course	72	67.0	5 dBA increase in an area <72 dBA L_{dn}	67.2	0.2	67.2	0.2	No
Sunset Boulevard from Lake Merced Boulevard to Sloat Boulevard	Residential	60	68.0	3 dBA increase in an area >60 dBA L_{dn}	68.1	0.1	68.1	0.1	No
Lake Merced Boulevard from Sunset Boulevard to Skyline Boulevard	Residential	60	59.4	5 dBA increase in an area <60 dBA L_{dn}	59.4	0.0	59.4	0.0	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Lake Merced Boulevard from Font Boulevard to Higuera Avenue	Residential/ University	60	71.2	3 dBA increase in an area >60 dBA L_{dn}	71.4	0.2	71.4	0.2	No
Junipero Serra Boulevard from 19th Avenue to Font Boulevard	Residential	60	74.1	3 dBA increase in an area >60 dBA L_{dn}	74.3	0.2	74.3	0.2	No
19th Avenue from Santiago Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.4	0.3	69.4	0.3	No
19th Avenue from Ulloa Street to Taraval Street	Residential/ Park	60	69.1	3 dBA increase in an area >60 dBA L_{dn}	69.3	0.2	69.3	0.2	No
19th Avenue from Vicente Street to Ulloa Street	Residential/ Park	60	69.4	3 dBA increase in an area >60 dBA L_{dn}	69.7	0.3	69.7	0.3	No
19th Avenue from Wawona Street to Vicente Street	Residential/ Park	60	69.6	3 dBA increase in an area >60 dBA L_{dn}	69.8	0.2	69.8	0.2	No
19th Avenue from Sloat Boulevard to Wawona Street	Park/ Institutional	70	69.7	5 dBA increase in an area <70 dBA L_{dn}	69.9	0.2	69.9	0.2	No
Sloat Boulevard from 19th Avenue to Junipero Serra Boulevard	Residential	60	67.0	3 dBA increase in an area >60 dBA L_{dn}	67.0	0.0	67.0	0.0	No
Portola Drive from 15th Avenue to Sloat Boulevard	Residential	60	69.0	3 dBA increase in an area >60 dBA L_{dn}	69.2	0.2	69.2	0.2	No
Junipero Serra Boulevard from Eucalyptus Drive to Sloat Boulevard	Residential/ School	60	68.1	3 dBA increase in an area >60 dBA L_{dn}	69.0	0.9	69.0	0.9	No
Ocean Avenue from 19th Avenue to Aptos Avenue	Residential/ Park	60	62.6	5 dBA increase in an area <60 dBA L_{dn}	63.5	0.9	63.5	0.9	No

Roadway Segment[a,b]	Receptor Land Use Type	Compatibility Standard[c]	Existing (dBA, L_{eq})	Applicable Standard	Draft EIR Variant		Revised Variant		Exceed Standard?
					Existing + Draft EIR Variant (dBA, L_{eq})	Difference between Existing + Draft EIR Variant (dBA)[c]	Existing + Revised Variant (dBA, L_{eq})	Difference between Existing + Revised Variant (dBA)[c]	
Ocean Avenue from Aptos Avenue to Westgate Drive	Residential/ Park	60	62.6	3 dBA increase in an area >60 dBA L_{dn}	63.5	0.9	63.5	0.9	No

SOURCE: ESA 2022, 2023

ABBREVIATIONS:

dBA = A-weighted decibel; L_{dn} = day-night noise level; L_{eq} = average or constant sound level

NOTES:

[a] Road center to sensitive receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the algorithms of the Federal Highway Administration Traffic Noise Prediction Model.

[B] The analysis considered the vehicle mix based on truck percentages for 19th Avenue (State Route 1) as documented by the California Department of Transportation for the year 2020. Traffic speeds for all vehicle classes were set consistent with the City and County of San Francisco's interactive map of speed limits, https://data.sfgov.org/Transportation/Map-of-Speed-Limits/ttcm-fwt2.

[C] Compatibility standards are taken from the City and County of San Francisco's General Plan Noise Element.

CUMULATIVE IMPACTS

The draft EIR concluded that the variant's significant and unavoidable daytime construction and nighttime construction noise impacts could be exacerbated by other cumulative construction projects in the area, primarily the SFSU Future State 2035 long-term planning projects, and therefore the variant would result in a significant and unavoidable cumulative construction noise impact. As discussed above, the revised variant would have the same significant and unavoidable construction noise impacts as the draft EIR variant. Therefore, the revised variant would have a significant and unavoidable cumulative construction noise impact similar to the impact identified in the draft EIR for the variant.

The draft EIR concluded that the variant would result in a less-than-significant construction vibration impact and no mitigation measures are required. As discussed above, the revised variant's vibration levels from construction would be well below the 0.25 and 0.3 PPV thresholds and would have the same less-than-significant construction vibration impact as the variant analyzed in the draft EIR. Vibration from construction of other cumulative projects, even if those projects are located near the revised variant, would not combine to raise the maximum PPV, because there would be sufficient distance for attenuation, and it is unlikely that vibration peaks from separate construction sites would occur simultaneously. Therefore, the revised variant would also have a less-than-significant cumulative vibration impact. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative noise.

The draft EIR also concluded that, given the distance of the variant buildings from SFSU sites and the typical rate of noise attenuation, the potential for combined noise effects from operation of stationary equipment would be extremely limited, particularly considering that many of the existing SFSU housing units that would be replaced already have HVAC equipment. Therefore, the draft EIR variant, in combination with the cumulative projects, would not result in a significant cumulative noise impact from operation of stationary equipment. As discussed above, the revised variant would have operational noise impacts from stationary equipment similar to those assessed in the draft EIR for the variant. Therefore, cumulative noise impacts for the revised variant from stationary equipment would be less than significant.

The draft EIR concluded that traffic noise increases related to the variant along all 30 roadway segments analyzed in the project vicinity would not exceed the identified applicable standards, and that cumulative traffic noise impacts would be less than significant. As with the draft EIR variant, the traffic noise impacts related to the revised variant in combination with cumulative projects would not exceed the 3 dBA or 5 dBA standards for the applicable noise compatibility standards. Therefore, cumulative traffic noise impacts would be less than significant for the revised variant.

2.E.5 Wind

The impacts of the variant related to wind hazards have been described and analyzed in draft EIR Section 3.E, Wind, pp. 3.E-1 through 3.E-22. As described below, wind impacts of the revised variant would be the same as or similar to those of the variant.

The draft EIR determined that the variant could result in wind hazards in publicly accessible areas of substantial pedestrian use during partial buildout (Impact WI-1) and full buildout (Impact WI-2). As described in the draft EIR, Mitigation Measure M-WI-1a, Wind Safety Plan, would be implemented to reduce wind-related risks to the public from construction activities. Mitigation Measure M-WI-1b, Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet, would require that future buildings taller than 85 feet be

designed to reduce wind impacts at ground level. If the project sponsor cannot demonstrate that wind impacts of a future proposed building taller than 85 feet would not result in new exceedances of the wind hazard criterion, Mitigation Measure M-WI-1c, Maintenance Plan for Landscaping off the Project Site and Wind Baffling Measures in the Public Right-of-Way, and Mitigation Measure M-WI-1d, Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in the Private Right-of-Way, would be implemented to ensure that the maintenance features required under Mitigation Measure M-WI-1b are implemented in perpetuity. However, the draft EIR concluded that it cannot be stated with certainty that future buildings could be feasibly designed in a way that would reduce hazardous wind speeds compared to the then-existing conditions, even with mitigation incorporated. Therefore, the draft EIR concluded that wind impacts for the variant would be significant and unavoidable with mitigation.

The revised variant would have the same overall characteristics and components as the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of changes in the building envelopes for Block NW2 and, potentially, Block NW3, and the addition of a tower on Block S3. However, with respect to the latter, as described in Section 3.C.2, Summary of the Draft EIR Variant and the Revised Variant, p. 2-17, the proposed project and variant analyzed in the draft EIR studied a total of five towers, including a potential tower on Block S3, in the wind modeling conducted for the draft EIR. Therefore, this change to the revised variant requires no further analysis.

A supplemental wind analysis was prepared to reflect the proposed changes for the northwest portion of the project site (Blocks NW2 and NW3; see Attachment G of this RTC document).[11] This supplemental analysis found that the changes in the revised variant, and notably the enlargement of the Block NW2 building envelope, are considered minor and "would (only) result in localized wind changes in the NW corner and would not substantially affect other portions of the proposed project." The number of locations and the total hours of potential hazard exceedances with the revised design of Blocks NW2 and NW3 would be similar to those shown in the previous wind tunnel tests. While wind speeds at two locations may increase with the revised design, wind conditions at two other locations would be expected to improve. The analysis further found that extension of the NW2 building massing northwesterly toward Rolph Nicol Jr. Playground would shield locations between Blocks NW2 and NW3 from the prevailing west-northwest and westerly winds. This would improve conditions at two locations where the draft EIR found that the pedestrian wind hazard criterion would be exceeded with the draft EIR variant (and the proposed project), potentially avoiding those wind hazard exceedances. Conversely, two test locations to the northwest would be expected to experience greater wind speeds, and the changes could potentially result in new wind hazard exceedances there. Wind speeds at other nearby wind hazard exceedances would continue to exceed the wind hazard criterion. The supplemental wind analysis concluded that the "Overall, the number of locations and the total hours of potential hazard exceedances with the revised design of Blocks NW2 and NW3 would be similar to those identified in the previous wind tunnel tests." Moreover, the analysis noted that, as stated in the draft EIR, architectural detail on project or variant buildings, such as setbacks and façade articulation—which was not included in the wind tunnel testing of simple building massing models—would likely result in improved wind conditions, compared to those reported in the draft EIR. Existing and proposed landscaping, also not included in the wind tunnel testing in accordance with standard Planning Department protocol, could further improve wind conditions on and around the project site.

[11] RWDI, Memorandum to Florentina Craciun, San Francisco Planning Department, "Stonestown Galleria – San Francisco, CA: Pedestrian Wind Study – Northwest Corner Update – Letter of Opinion," January 22, 2024 (see Attachment G of this RTC document).

Mitigation Measures M-WI-1a through M-WI-1d as identified for the variant in the draft EIR would also apply to the revised variant. As with the variant, it cannot be stated with certainty at this time that future buildings developed for the revised variant could be feasibly designed in a way that would reduce hazardous wind speeds as compared to the then-existing conditions, even with mitigation incorporated. Therefore, the revised variant would result in the same impact related to wind hazards as the variant, which would be significant and unavoidable with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to wind hazards.

CUMULATIVE IMPACTS

The draft EIR concluded that implementation of the cumulative projects would result in a significant cumulative impact related to wind hazards, and the proposed project or variant alone would be responsible for a considerable proportion of this cumulative impact. The draft EIR determined that implementation of Mitigation Measures M-WI-1a through M-WI-1d would reduce wind hazard exceedances to the maximum extent feasible, but that it cannot be stated with certainty that no wind hazard exceedances would result from implementation of the variant, in combination with the cumulative projects, and the cumulative impact would be significant and unavoidable with mitigation. Because the revised variant would occur at the same location and within the same building envelope as the variant, the revised variant would result in the same or very similar cumulative impacts related to wind hazards as the variant, which would be significant and unavoidable with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative wind hazard impacts.

2.E.6 Shadow

The impacts of the variant related to shadow have been described and analyzed in draft EIR Section 3.F, Shadow, pp. 3.F-1 through 3.F-42. The analysis determined that the draft EIR variant would cast shadow on parks and open spaces in the vicinity of the project site at different times of the day and year. In particular, draft EIR variant shadow would reach the Rolph Nicol Jr. Playground throughout the year in the morning and afternoon, and the Junipero Serra Playground during the late afternoon in late spring and early summer. The draft EIR concluded that shadow from the variant would not substantially or adversely affect the most used portions of these spaces. Thus, implementation of the draft EIR variant (which represents the maximum shadow impact) would not adversely or substantially affect the use and enjoyment of these open spaces, and the impact would be less than significant and no mitigation measures are required. The draft EIR also concluded that given the limited extent, duration, and time of year when cumulative shadow would occur on the Rolph Nichol Jr. Playground and Junipero Serra Playground, cumulative shadow on these open spaces would not substantially or adversely affect the use and enjoyment of these open spaces, and the cumulative impact would be less than significant and no mitigation measures are required.

The revised variant would have the same overall characteristics and components as the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a change in the building envelope for Block NW2, Block NW3, and a tower on Block S3.[12] An additional shadow study was prepared to evaluate changes in the northwest portion of the project site (see Attachment H of this RTC document).

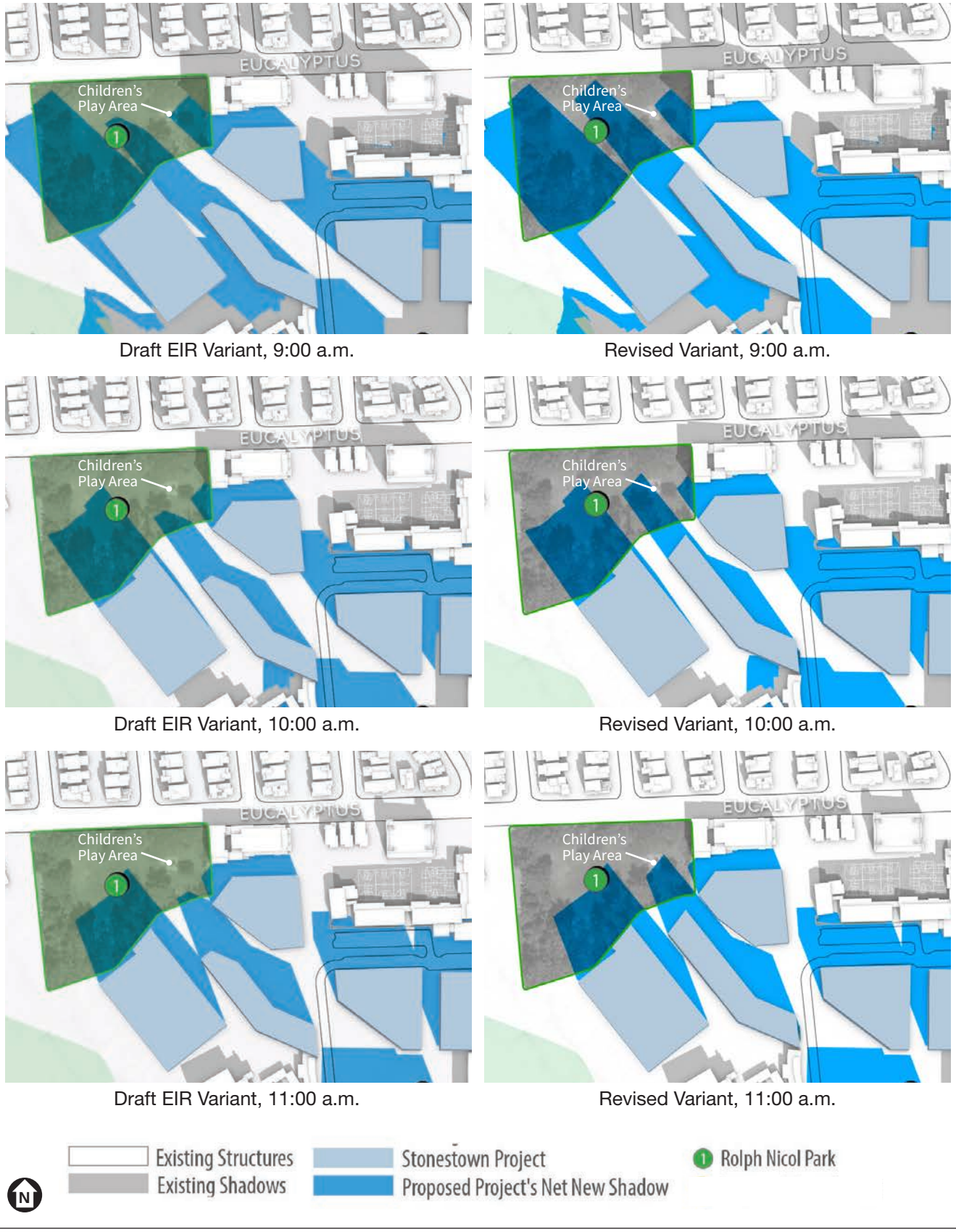
[12] As described in the draft EIR a tower location at S3 was included in the shadow scenario, therefore no further analysis is required.

As described in Section 2.D.2, Comparison of Draft EIR Variant and the Revised Variant, p. 2-17, the proposed project and draft EIR variant analyzed in the draft EIR studied a total of five towers, including a potential tower on Block S3, in the shadow modeling conducted for the draft EIR. The increased massing for Block NW2 would result in a larger area of shadow coverage of Rolph Nichol Jr. Playground. Similar to the draft EIR variant, under the revised variant, the largest new area of shadow would occur in the early morning in December, at 8:15 a.m. on December 13 and 28, with very similar shadow on the winter solstice. The revised variant would shade approximately 86 percent of the park at that time, 12 percent more than the draft EIR variant. However, similar to the draft EIR variant, substantial portions of the park's grassy area would remain in sunshine throughout the morning even on the winter solstice, the day that would be most affected by shadow. At other times of the year, shadow effects would be less pronounced. Similar to the draft EIR variant, the revised variant would shade portions of the park from 6:47 a.m. to 1 p.m. on the summer solstice, from 7:57 a.m. to 3 p.m. on the spring/fall equinoxes, and from 8:30 a.m. to 3:55 p.m. on the winter solstice.

As with the draft EIR variant, shadow from the revised variant would not substantially or adversely affect the most used portions of Rolph Nichol Jr. Playground. Specifically, on the summer solstice, the revised variant would cast a maximum of 207 square feet more shadow on Rolph Nicol Jr. Playground than would the draft EIR variant at any given time. This added shadow, covering 0.16 percent of the park, would fall only near the southwest corner of the park, in one of the park's most densely forested areas. The revised variant would add no additional shadow beyond that from the draft EIR variant after 12 noon.

On the spring/fall equinoxes, the revised variant would add as much as 10 percent more shadow to the park, covering about 12,850 square feet, at any given time, compared to the draft EIR variant. This would occur at 8 a.m. The most substantial increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9 a.m., and nearly all of this added shadow would fall on the grove of trees along the park's southern edge. A small amount of added shadow would also fall on the southern portion of the pathway leading from the park to the project site. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 3 percent of the park area. The revised variant would not generate any additional shadow on the children's play area on the spring/fall equinoxes, compared to the draft EIR variant. As with the draft EIR variant, the revised variant shadow (cast by the building on Block NW3, not NW2) would leave the children's play area by 9 a.m. Also as with the draft EIR variant, the revised variant would cast very little shadow on the park's grassy area.

On the winter solstice, the revised variant would add as much as 12 percent more shadow to the park, covering about 15,500 square feet, at any given time, compared to the draft EIR variant. This would occur at 8:19 a.m. The largest increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9 a.m. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 4 percent of the park area. Added shadow from the revised variant, compared to the draft EIR variant, would fall primarily on the grassy area in the center of the park. Between about 9:45 and 11:15 a.m. on the winter solstice, the revised variant would cast new shadow on the children's play area when it would not be shaded by the draft EIR variant. During this time period the play area would be fully covered for a few minutes, but in general, the revised variant would shade it only partially at any given time. **RTC Figure 2-2** provides a comparison of the draft EIR variant and revised variant on the winter solstice.



SOURCE: Fastcast, 2023

Stonestown Development Project

RTC FIGURE 2-2

SHADOW COMPARISON BETWEEN DRAFT EIR VARIANT AND REVISED VARIANT, WINTER SOLSTICE

On an annual basis, the greatest increase in shadow cast by the revised variant, compared to the draft EIR variant, would occur in February and October. The greatest instantaneous increment would occur on October 18, at 8:30 a.m., when the revised variant would shade nearly 20 percent more of the park (about 25,235 square feet) than would the draft EIR variant. The conditions on February 22 would be similar. This added shadow would fall primarily on the grassy area in the center of the park. The revised variant would cast no additional shadow on the children's play area on this date, compared to the draft EIR variant (see **RTC Figure 2-3**).

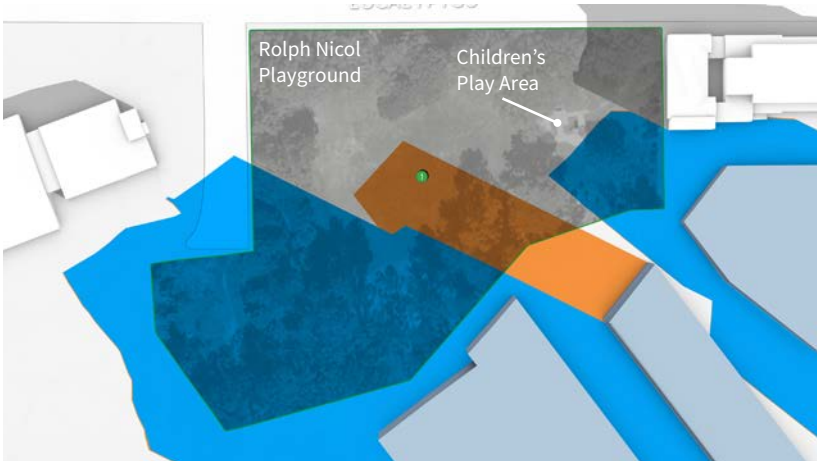
Based on the information above, the revised variant would result in similar less-than-significant project-specific and cumulative impacts related to shadow as the draft EIR variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to shadow.

2.E.7 Utilities and Service Systems

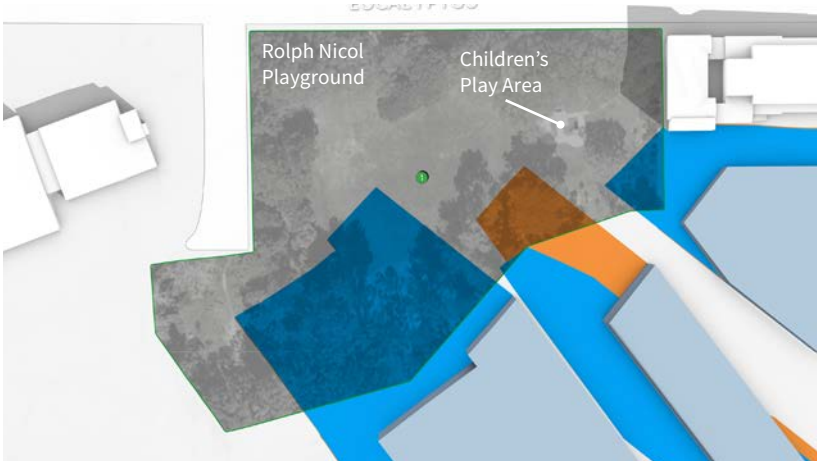
The impacts of the variant related to utilities and service systems have been described and analyzed in draft EIR Section 3.G, Utilities and Service Systems, pp. 3.G-1 through 3.G-28. The analysis concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to water supply; the need for new or expanded water, wastewater, or stormwater facilities; and generation of solid waste and no mitigation measures are required. As described below, the impacts of the revised variant related to utilities and service systems would be similar to those of the draft EIR variant.

The revised variant would complete the same upgrades to the existing infrastructure and utility systems as described in draft EIR pp. 2-32 through 2-39. However, the number of residential units would increase and the amount of non-retail sales and service uses and hotel uses would decrease under the revised variant. These changes would alter the project's overall water demand and the amount of wastewater and solid waste generated from the project. As presented in Section C.B, Population and Housing, p. C-2 of Attachment C, the revised variant would develop 3,491 residential units (411 more units than the variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant). The revised variant would reduce non-retail sales and service uses by 104,000 square feet and hotel uses by 100,000 square feet compared to the draft EIR variant. Thus, the revised variant would result in approximately 775 total employees at the project site, or 483 fewer employees than under the draft EIR variant.

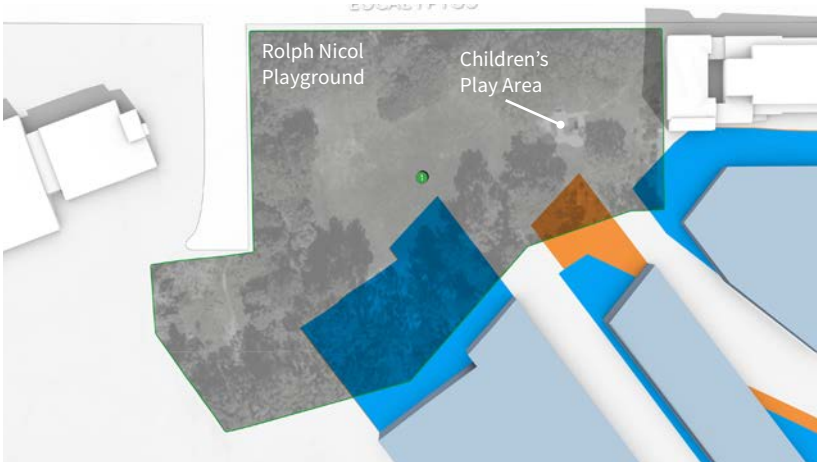
The revised variant would Involve a similar amount of construction activity compared to the variant because it would not require changes to the building footprint previously analyzed for the variant in the draft EIR. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a tower on Block S3. The magnitude and duration of construction for the revised variant would be similar to that for the variant analyzed in the draft EIR. As presented in RTC Table 2-2, p. 2-22, construction phasing for the revised variant would also be similar to that for the variant. Phases 1 through 5 would be the same, and Phase 6 would be extended by 3 months because of the additional vertical construction required for the tower on Block S3. As with the variant analyzed in the draft EIR, the maximum number of construction workers for the revised variant would range from 349 to 610 workers per day. Therefore, the revised variant would result in less-than-significant construction-related impacts on utilities and service systems similar to the impacts identified for the variant in the draft EIR. Accordingly, and unless otherwise noted, the following analysis compares the operational impacts of the variant and the revised variant related to utilities and service systems.



9:00 a.m.



10:00 a.m.



11:00 a.m.

SOURCE: Fastcast, 2023

Stonestown Development Project

RTC FIGURE 2-3

DRAFT EIR VARIANT AND REVISED VARIANT SHADOW, OCTOBER 18 (DAY OF MAXIMUM REVISED VARIANT SHADOW; FEBRUARY 22 SIMILAR)

WATER SUPPLY

The revised variant would require water for irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. Like the variant, the revised variant would include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated at a treatment plant or facility on the project site before being reused onsite. The potable water demand and total water demand of the draft EIR and revised variant are shown in **RTC Table 2-15** and further described below.

RTC Table 2-15 Draft EIR and Revised Variant Water Demand

	Draft EIR Variant	Revised Variant
Potable Water Demand	0.152 mgd	0.191 mgd
Total Water Demand	***0.249 mgd***	***0.309 mgd***

As described on draft EIR p. 3.G-19, the water supply assessment determined that the variant's potable water demand, 0.152 million gallons per day (mgd), would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045.[13] The variant's total water demand, 0.249 mgd, which does not account for the 0.097 mgd of savings anticipated through compliance with the non-potable water ordinance, would represent 0.31 percent of the city's 2045 total demand. Thus, the draft EIR concluded that the variant represents a small fraction of the total projected water demand in San Francisco through 2045. The revised variant's potable water demand, 0.191 mgd, would contribute 0.24 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045. The revised variant's estimated total water demand would be 0.309 mgd, which does not account for 0.118 mgd of savings anticipated through the non-potable water ordinance compliance,[14] and would represent 0.38 percent of the city's projected 2045 total demand. Like the draft EIR variant, the revised variant would result in less-than-significant project-specific and cumulative impacts related to water supply, as the potential increase represents a small fraction of the total projected water demand in San Francisco. The updated water supply assessment prepared concluded that water supplies would be available to meet the demand of the revised variant in combination with both existing development and projected growth in San Francisco through 2045 under each of the water supply scenarios with varying levels of rationing during dry years.[15] The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to water supply.

WATER TREATMENT AND TRANSMISSION FACILITIES

For the same reasons as discussed for the variant in the draft EIR, the revised variant's potable water demand is already accounted for in overall San Francisco retail water demands, which are the basis for the capacity of regional water treatment and transmission facilities. As described in Section C.B, Population and Housing, p. C-2 of Attachment C, the revised variant's population and employment growth is within the city's projected growth level, which is the basis for ongoing improvements to the emergency firefighting water system.

[13] A water supply assessment was prepared for the project using the draft EIR variant's projected demand because it represented the most conservative buildout for the project site from a water demand perspective.
[14] Non-potable demands were estimated using the San Francisco Public Utilities Commission's Non-potable Water Calculator included in San Francisco Public Utilities Commission, *Revised Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project,* September 26, 2023; approved by Resolution No. 23-0194, October 24, 2023.
[15] Ibid.

As discussed on draft EIR p. 3.G-14, the draft EIR variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue. Fire flow was simulated using a model based in part on field flow tests conducted by the San Francisco Fire Department to assess whether the proposed system would meet industry and SFPUC standards for flow and pressure. Fire flow demands of 2,000gallons per minute (consistent with San Francisco Fire Department requirements) would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch for the draft EIR variant. The draft EIR concluded that the variant would not require new or expanded low-pressure water system infrastructure. Fire flow simulations for the revised variant were conducted and would meet a higher fire flow demand of 2,500 gallons per minute[16] at a pressure requirement of 20 pounds per square inch.[17] Like the draft EIR variant, the revised variant would not require construction of new or expanded water facilities. Therefore, as with the draft EIR variant, both project-specific and cumulative impacts of the revised variant related to water treatment and transmission facilities would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to water treatment and transmission facilities.

WASTEWATER

The project site would generate wastewater from residential toilet flushes and drainage from sinks. This wastewater would be conveyed through the combined sewer system to the Oceanside Treatment Plant, which operates under a National Pollutant Discharge Elimination System permit from the regional board (Order No. R2-2019-0028, December 10, 2019). As described in the draft EIR (p. 3.G-23), estimated wastewater demand is approximately 230,720 gallons per day (approximately 0.2 mgd) for an average-day dry-weather flow. By comparison, estimated wastewater demand for the revised variant is approximately 290,400 gallons per day (approximately 0.3 mgd) for an average-day dry-weather flow.[18] As described in the draft EIR, the Oceanside Treatment Plant is permitted to treat an average dry-weather influent flow of up to 43 mgd, and in 2020 the average dry-weather flow to the treatment plant was 12 mgd. The plant has sufficient available capacity for anticipated wastewater flows from the project site. Therefore, like the draft EIR variant, the revised variant would not require the construction of new or expanded wastewater treatment facilities.

As described on draft EIR p. 3.G-23, the San Francisco Public Utilities Commission's infrastructure capacity plans account for projected population and employment growth relative to the capacity of its collection, storage, and treatment system.

With implementation of the revised variant, wastewater from the project site would continue to discharge to the existing combined sewer system facility via infrastructure located beneath Lowell High School, and wastewater south of Winston Drive would be conveyed through existing combined sewer system facilities within Buckingham Way. As discussed in the draft EIR, the existing combined sewer system is sized to accommodate both daily wastewater flows and stormwater runoff from a five-year storm. The design storm at the project site generates approximately 1.45 million gallons of runoff during a three-hour period (i.e.,

[16] The San Francisco Fire Department requires that the available fire flow capacity be no less than 2,000 gpm at a residual pressure of 20 pounds per square inch for the development. The National Fire Protection Association requires that sprinklers for buildings with car stacking or electric vehicle parking supply 3,500 gpm at a residual pressure of 20 pounds per square inch. Because it is currently unknown which buildings in the development will have car stacking or electric vehicle parking, all hydrants within the development were modeled to demand 2,500 gpm for fire flow scenarios to demonstrate compliance with the San Francisco Fire Department requirements.
[17] Carlson, Barbee & Gibson, Inc., Draft Infrastructure Plan, April 2024.
[18] Ibid.

1.45 mgd).[19] Therefore, the revised variant's estimated wastewater demand, 0.3 mgd (compared to the variant's 0.2 mgd), is a fraction of the capacity of the existing combined sewer system facilities. Like the variant, the revised variant would include green infrastructure for stormwater treatment, in compliance with the Stormwater Management Ordinance, to reduce peak flows from the site before discharging into the combined sewer system. Therefore, the existing combined sewer system would have sufficient capacity to accommodate the new wastewater flows from the revised variant.

As with the draft EIR variant, operation of the revised variant would not result in a determination that the combined sewer system or the Oceanside Treatment Plant has inadequate capacity to serve the project's anticipated wastewater demand. Like the draft EIR variant, the revised variant would not require construction of new or expanded wastewater facilities, and project-specific and cumulative impacts would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to wastewater facilities.

STORMWATER

The project site is currently paved, and stormwater and wastewater from the project site drain to the city's combined sewer system. Like the draft EIR variant, the revised variant would include new combined sewer system pipelines throughout the site to serve the new buildings as shown on draft EIR Figure 2-19, p. 2-39. The combined sewer system pipelines would collect wastewater and stormwater from the project site and connect to the combined sewer system's existing surrounding infrastructure. Stormwater from the project site would continue to discharge to the existing combined sewer system facilities; however, like the draft EIR variant, the revised variant would be required to implement runoff reduction measures consistent with the City's Stormwater Management Requirements and Design Guidelines, which would reduce the amount of stormwater runoff entering the combined sewer system compared with existing conditions. Like the draft EIR variant, the revised variant would reduce the amount of stormwater runoff entering the combined sewer system compared with existing conditions. No new or expanded stormwater drainage facilities other than those proposed as part of the revised variant would be required. As with the draft EIR variant, this impact would be less than significant at both a project-specific and a cumulative level. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to stormwater facilities.

SOLID WASTE

At buildout of the revised variant, up to 21 tons of waste per day could be generated at the project site (compared to 20 tons per day for the variant),[20] which is within the allowable total tonnage per day of many nearby landfills, including the Recology Hay Road Landfill, and represents far less than 1 percent of the Recology Hay Road Landfill's capacity. As with the draft EIR variant, the total operational solid waste generated under the revised variant that would require disposal in a landfill would represent less than 1 percent of the combined 38,046-ton maximum throughput per day for the Recology Hay Road Landfill. In addition, with implementation of the revised variant, as with the draft EIR variant, residents, employees, and

[19] This design storm generates 1.3 inches of rain over a three-hour period. At the 43-acre project site, this would amount to 1.45 million gallons during a design storm. San Francisco Public Utilities Commission, *SFPUC Sewer System Management Plan*, September 2021.

[20] The variant described in the draft EIR would result in a larger number of residents and employees at the project site. Under the variant, there would be 7,269 residents and 1,258 employees. Assuming the California Department of Resources Recycling and Recovery's 2019 solid waste production rates of 4.5 pounds per person per day for residents and 5.3 pounds per person per day for employees, residents and employees combined would generate approximately 39,378 pounds (19.7 tons) per day of solid waste. Under the revised variant, there would be 8,239 residents and 775 employees. Assuming the same solid waste production rates (4.5 pounds per person per day for residents and 5.3 pounds per person per day for employees), residents and employees combined would generate approximately 41,184 pounds (20.5 tons) per day of solid waste under the revised variant.

visitors to the project site would be required to separate waste materials consistent with the San Francisco Mandatory Recycling and Composting Ordinance, California's Mandatory Commercial Recycling Law, and California Public Resources Code section 42649.8.

The revised variant would not include features that would impede compliance with these requirements. Therefore, as with the variant, the impact of the revised variant related to solid waste would be less than significant at both a project-specific and a cumulative level. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to solid waste.

2.E.8 Alternatives

Draft EIR Chapter 5, Alternatives, satisfies all CEQA requirements for alternatives analysis with respect to the revised variant as well as the variant, and no additional alternatives analysis is warranted. As described above, when compared to the variant, the revised variant would not result in any new significant project-level or cumulative impacts, nor would it substantially increase the severity of any impacts previously identified in the draft EIR. For this reason, no new alternatives need to be analyzed. The findings in draft EIR Chapter 5 remain valid and are applicable to the revised variant.

2.F Overall Conclusion of the Potential Environmental Impacts of the Revised Variant

The revised variant would not result in any new significant or potentially significant impacts that were not already identified for the variant in the draft EIR or the initial study, included as draft EIR Appendix B, nor would the revised variant substantially increase the severity of any impacts identified for the variant in the draft EIR or the initial study. The same mitigation measures identified in the draft EIR and initial study for the variant would remain required to reduce or avoid the significant environmental impacts of the revised variant, except that Mitigation Measures M-TR-4a and M-TR-4b would not apply to the revised variant for transit delay because the four-minute transit delay threshold would not be exceeded. However, Mitigation Measure M-TR-4a would still be required for air quality and GHG impacts. No new or modified measures would be required to mitigate the significant impacts identified for the variant in the draft EIR. In addition, because there are no changes to the cumulative projects identified in the draft EIR, and the project-level impacts of the revised variant have been determined to be similar to the project-level impacts of the variant, the cumulative impacts of the revised variant would be similar to the cumulative impacts of the variant for all topics analyzed in the draft EIR. Therefore, references to the variant in this RTC document shall be interpreted to include and incorporate any changes proposed by the revised variant, unless otherwise noted. Specific references to the revised variant will be included where necessary for clarity in this RTC document.

CHAPTER 3
LIST OF PERSONS COMMENTING

3.A Public Agencies and Commissions and Individuals Commenting on the Draft EIR

This RTC document includes responses to all comments received on the draft EIR, including written comments submitted by letter or email, as well as oral comments presented at the public hearing that was held on February 9, 2023. This section lists all public agencies and commissions and individuals who submitted comments on the draft EIR. **RTC Table 3-1** lists the commenters' names, along with the corresponding commenter codes used in Chapter 4, Comments and Responses, to denote each set of comments received by category and date received by the planning department. Oral comments given at the planning commission hearing are included in Attachment A, Draft EIR Hearing Transcript. All written and oral comments submitted on the draft EIR are included in Attachment B, Draft EIR Comment Letters and Emails.

- Comments from public agencies and commissions are designated by "A-" and the agency's name or acronym.
- Comments from individuals are designated by "I-" and the commenter's last name.
- Comments from organization are designated by "O-" and the organization's name or acronym.

RTC Table 3-1 Persons Commenting on the Draft EIR

Comment Letter Code	Name and Title of Commenter	Agency/Organization	Comment Format	Comment Date
PUBLIC AGENCIES AND COMMISSIONS				
A-Caltrans	Yusheng Luo	Caltrans	Letter	February 8, 2023
A-CPC-Diamond	Commissioner Diamond	Planning Commission	Transcript	February 9, 2023
A-CPC-Koppel	Commissioner Koppel	Planning Commission	Transcript	February 9, 2023
A-CPC-Moore	Commissioner Moore	Planning Commission	Transcript	February 9, 2023
A-CPC-Tanner	Commissioner Tanner	Planning Commission	Transcript	February 9, 2023
A-HPC	Historic Preservation Commission	HPC	Letter	February 7, 2023
A-SFPUC	Monica Wu	SFPUC	Letter	January 18, 2023
INDIVIDUALS				
I-Anthony	Bob and Maha Anthony		Letter	February 7, 2023
I-Arbulu	Antonio Arbulu		Letter	February 11, 2023
I-Aslanian-Williams	Dena Aslanian-Williams		Transcript	February 9, 2023
I-Berman	Laurie Berman		Letter	February 8, 2023

Comment Letter Code	Name and Title of Commenter	Agency/Organization	Comment Format	Comment Date
I-Boken	Eileen Boken		Transcript	February 9, 2023
I-Cenpai	Cenpai		Letter	February 8, 2023
I-Chang	Mary Chang		Letter	February 7, 2023
I-Chou	Su-Syin Chou		Letter	February 12, 2023
I-Clee	Chen Young Lee		Transcript	February 9, 2023
I-Conroy1	Paul Conroy		Letter	January 5, 2023
I-Conroy2	Paul Conroy		Letter	February 13, 2023
I-DeBaun	Barbara and Robert DeBaun		Letter	February 9, 2023
I-EBirsinger	Eugene Bersinger		Letter	February 9, 2023
I-Finnegan	Lynn Finnegan		Letter	February 9, 2023
I-Full	David Full		Letter	February 12, 2023
I-Gardner	Karen Gardner		Letter	February 10, 2023
I-Goodman	Aaron Goodman		Letter	January 11, 2023
I-Hardeman	Donald Hardeman		Letter	February 7, 2023
I-Hardesty	Tara Hardesty		Transcript	February 9, 2023
I-Herlihy1	James P. Herlihy		Letter	January 14, 2023
I-Herlihy2	James P. Herlihy		Letter	February 8, 2023
I-Herlihy3	Jim Herlihy		Transcript	February 9, 2023
I-Herzfeld	Debbie Herzfeld		Letter	February 9, 2023
I-Ho	Hyesoon Ho		Letter	N/A
I-Hong	Dennis Hong		Letter	February 6, 2023
I-Howe	Donna Keuper Howe		Letter	January 14, 2023
I-Iwata	Jerry Iwata		Letter	February 7, 2023
I-Kashi	Kevin Kashi		Letter	February 8, 2023
I-Kiong	Mee Mee Kiong		Letter	January 27, 2023
I-Kiong2	Mee Mee Kiong		Transcript	February 9, 2023
I-LBirsinger	Laura Birsinger		Letter	February 5, 2023
I-Lee	Marie Lee		Letter	February 9, 2023
I-Lewis	Michele Ho Lewis		Letter	February 11, 2023
I-LG	LG		Letter	February 13, 2023
I-Lifur	Jeff Lifur		Letter	February 12, 2023
I-Lo	Cynthia Lo		Letter	February 11, 2023

Comment Letter Code	Name and Title of Commenter	Agency/Organization	Comment Format	Comment Date
I-Maldonado	Roland Maldonado		Transcript	February 9, 2023
I-Marzo	Steve Marzo		Transcript	February 9, 2023
I-Moore	Andrew Moore		Letter	N/A
I-Munoz	Martin Munoz		Transcript	February 9, 2023
I-Naraghi	Nasrin Naraghi		Letter	February 9, 2023
I-Parthasarathy	Hemai Parthasarathy		Letter	February 9, 2023
I-Pilpel	David Pilpel		Letter	February 13, 2023
I-Ressl	Jan Ressl and Ajith Ramanathan		Letter	February 13, 2023
I-Riley	Christine Riley		Letter	February 8, 2023
I-Schneider	William Schneider		Letter	February 8, 2023
I-Seratti	Karen Seratti		Transcript	February 9, 2023
I-Strassner	Howard Strassner		Letter	January 26, 2023
I-Troxel	Suzanne Troxel		Letter	February 11, 2023
I-Tsakalakis	Kath Tsakalakis		Letter	December 23, 2022
I-Tsang	D.W. Tsang		Letter	February 8, 2023
I-Will	Tina Will		Letter	February 3, 2023
I-Wong	Grace Wong		Letter	February 9, 2023
I-Zhou	Peiling Zhou		Letter	February 8, 2023
ORGANIZATION				
O-HAC-1	Jake Price	Housing Action Coalition	Transcript	February 9, 2023
O-ITHA	Mark V. Scardina	Ingleside Terraces Home Association	Letter	February 10, 2023
O-NorthernNeighbors	Jonathan Bunemann	Northern Neighbors	Transcript	February 9, 2023
O-SFSU	Jason Porth	SFSU	Letter	February 13, 2023
O-SierraClub	Howard Strassner	Sierra Club	Letter	January 27, 2023
O-SPEAK	Eileen Boken	Sunset-Parkside Education and Action Committee	Letter	February 13, 2023
O-WTPCC	Stephen Martin-Pinto	West of Twin Peaks Central Council	Letter	N/A

INTENTIONALLY BLANK

CHAPTER 4
COMMENTS AND RESPONSES

4.A Introduction

This chapter presents the substantive comments received on the draft EIR and initial study and responses to those comments. The comments and responses are organized by subject and are generally in the same order as presented in the draft EIR and initial study. General comments pertinent to CEQA and the draft EIR and general comments not pertinent to CEQA and the draft EIR are grouped accordingly at the end of this chapter. The order of the comments and responses in this chapter is shown in **RTC Table 4-1**, along with the corresponding section number, prefix to the topic code, and page of this chapter on which the comments and responses start.

RTC Table 4-1 Comment Organization

Section	Topic	Topic Code	Page No.
4.B	Project Description	PD	4-2
4.C	Cumulative Analysis	CU	4-12
4.D	Historic Architectural Resources	CR	4-12
4.E	Transportation and Circulation	TR	4-16
4.F	Noise and Vibration	NO	4-43
4.G	Air Quality	AQ	4-50
4.H	Shadow	SH	4-53
4.I	Utilities and Service Systems	UT	4-59
4.J	Other CEQA Considerations	OC	4-74
4.K	Alternatives	AL	4-75
4.L	Plans and Policies	PP	4-86
4.M	Aesthetics	AE	4-90
4.N	Greenhouse Gas Emissions	GHG	4-95
4.O	Recreation	RE	4-97
4.P	Public Services	PS	4-101
4.Q	Biological Resources	BI	4-108
4.R	Geology and Soils	GE	4-109
4.S	Hazards and Hazardous Materials	HZ	4-111
4.T	General Comments (CEQA)	GC-CEQA	4-113
4.U	General Comments (Non-CEQA)	GC NON-CEQA	4-126

Within each topic, similar comments are grouped together under subheadings, designated by a topic code and sequential number. For example, the comments in Section 4.B, Project Description, coded as "PD," are organized under subheading PD-1.

Under each subheading, the applicable comments are listed by comment code, as described in Chapter 3, List of Persons Commenting. Each comment is then presented verbatim and concludes with the commenter's name and, if applicable, title and affiliation; the comment source (i.e., public hearing transcript, letter, email); and the comment date. Following each comment or group of comments, a comprehensive response is provided to address environmental issues raised in the comments and clarify or augment information in the draft EIR, as appropriate. Response numbers correspond to the topic code; for example, the response to Comment PD-1 is presented under Response PD-1. The responses may clarify the draft EIR text or revise or add text to the Final EIR. To avoid unnecessary repetition, the impact analyses refer extensively to the information and analysis presented in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, where the environmental impacts would be substantially the same as those of the variant analyzed in the draft EIR. New or revised text, including text changes initiated by planning department staff, is <u>double underlined</u>; deleted material is shown in ~~strikethrough~~ (also see Chapter 5, Draft EIR Revisions). References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

4.B Project Description [PD]

The comments and corresponding responses in this section cover the subjects included in draft EIR Chapter 2, Project Description. The comment topics relate to:

- PD-1: Project Description Comments/Questions

4.B.1 Comment PD-1: Project Description Comments/Questions

This response addresses the following comments, which are quoted below:

A-CPC-Diamond-1

A-CPC-Koppel-1

A-CPC-Tanner-1

A-SFPUC-1

I-Full-3

I-Full-5

I-Full-7

I-Full-9

"We're at this pivotal point in time where not only is CEQA a very important consideration in the approval of the project, which is not yet in front of us, but we are also now dealing with a new Housing Element that's been adopted and certified that mandates that we find room for 82,000 additional units with the focus being on the west side. And this is one of the prime opportunity sites where we can really add a significant amount

of housing so long as it is done in an appropriate manner with Urban Design and with the appropriate infrastructure, in part, to ensure that whatever we add here is still beautiful and livable and adds to the quality of life in the city.

But approving units on paper doesn't do us any good. We need the developer to actually build them. And so I am hoping that when we get to the next stage, that the elements for this project will build in necessary flexibility that will allow the developer to pursue various parts of this project at appropriate times to meet market demand and to make changes as necessary.

And so what I am curious about is whether or not -- is really the limits of the existing analysis that's been done to allow for that flexibility in the future. And let me just give a couple of examples.

If they decide not to build the hotel and to add housing units instead, is the EIR, as currently drafted, adequate to handle that without the need for, you know, a supplemental EIR? Same thing if they decide to take out some of the retailers institutional uses and add in more housing units instead to go above the 3,000, even with the variant, or if they decide to add an extra floor or two, or three or four, or whatever it is on various parts of the project, because that's what makes sense from an economic perspective in order to move it forward without having to do a supplemental EIR.

So really the CEQA question that I have, that I'm hoping you can respond to is that, at the limits of this document, how far it can go in terms of providing coverage for the entitlements. And I'm -- as I say, entitlements that include flexibility to allow for shifts among the various uses." *(Sue Diamond, Commissioner, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Diamond-1, PD-1])*

"Yeah. Thanks again to the environmental review staff. You guys always do a very thorough job. So thanks again.

But I would like to echo the comments of Commissioner Diamond. You said it best when you said opportunity site. I mean, 20 acres in this seven-by-seven-mile-wide city is a huge opportunity. I just want to make sure we're not limited, with our limited horizontal footprint, in what we can do going upwards." *(Joel Koppel, Commissioner, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Koppel-1, PD-1])*

"I'll align myself with those comments as well. In particular, thinking about some of the, you know, mega multi-phase projects we have in this city that, you know, get going, and then they run into a problem and then need to rethink what they're doing and how the EIR does or does not allow that type of flexibility for, you know, a future that's unknown, and that we're trying to plan for as best we can. So having, you know, a ceiling that's higher, maybe, than we need it to be in terms of, you know, dwelling units, in order to shift as needed or shift space around. Maybe it is a hotel or proposed as another use now but dwelling units make a better -- better proposition in the future." *(Rachael Tanner, President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Tanner-1, PD-1])*

"Section 2.D.9, Infrastructure and Utilities, page 154 (2-36), paragraph 2. Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a

non-potable use as it is required. Also, the Water Supply Assessment indicates that residential laundry would be another end use for non-potable supply in addition to toilet and urinal flushing, irrigation, and cooling tower. Please list all anticipated end uses of non-potable supply.

Section 2.D.9, Infrastructure and Utilities, pages 155–156 (2-27 through 2-38). Why are the figures not showing non-potable water piping extending to building NW1?" *(Monica Wu, SFPUC BEM Coordinator, Letter, 1/18/2023 [A-SFPUC-1, PD-1])*

"Page 2-5, Figure 2-2. This figure showing the Project Site and Adjacent Land Uses is the same that was provided during the scoping process. I commented on that figure at the time and pointed out numerous errors in the figure. It was not updated or corrected. It is difficult to have confidence in the CEQA process when comments are not addressed and basic errors are not corrected.

Page 2-7, Section 2.D. The characterization of the northeast portion of Buckingham Way is misleading. This portion of Buckingham Way is not being 'straightened'. This portion of Buckingham Way is being abandoned and a new street is being created. Characterizing it is a street being 'straightened' is misleading.

Page 2-15, Figure 2-7. The legend includes something called 'CEQA Heights'. However, this term is not defined. Without such information, how is it possible to understand the importance of this term and what the blue line means?

Page 2-18, Section 2.D.6. The text indicates the proposed project would provide 2,940 vehicle parking spaces embedded within the proposed building podiums and/or below grade (or 3,140 parking spaces with the variant). However, this information is not consistent with Table 2-1 on page 2-12. How can environmental analysis be completed when inconsistent information is provided?

Page 2-20, Section 2.D.8. The EIR continues to indicate that secondary access to the project site is at Eucalyptus Drive and 20th Avenue. However, data provided in Appendix D.1 shows that traffic volumes at the intersection of Buckingham Way and Winston Drive are actually greater than at Eucalyptus Drive and 20th Avenue. Characterizing the intersection of Eucalyptus Drive and 20th Avenue as the secondary access point is misleading.

Page 2-20, Section 2.D.8, bullet #1. The text indicates that 20th Avenue would have two travel lanes (one lane in each direction) between Eucalyptus and Winston Drives. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction. Which is it? What was used in the travel analysis and trip generation?" *(Dave Full, Letter, 2/12/2023 [I-Full-3, PD-1])*

"Page 2-24, Figure 2-14. This figure shows that 20th Avenue would have two travel lanes in the southbound direction and one travel lane in the northbound direction. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction, or with the text presented on page 2-20.

Section 2.D.8, bullet #1 (see comment above). Given that this segment of 20th Avenue leads to the 'secondary access point' for the proposed project, why is there such contradictory information provided in

the EIR. It simply is not possible to understand what is being proposed and what is being analyzed in the EIR when such inconsistencies are presented in the EIR.

Page 2-28, bullet #1. The description on the number of travel lanes on Buckingham Way between 20th Avenue and Winston Drive is not consistent with Figure 2-12 on page 2-22 or Figure 2-18 on page 2-29.

Page 2-28, bullet #2. The description of Street A is misleading in indicating that it 'straightens' Buckingham Way. This is a new street and should be described as a new street in the EIR.

Page 2-28, paragraph 2. This paragraph indicates that there will be a traffic signal at Buckingham Way and Winston Drive. However, Figure 2-13 on page 2-23 indicates that this will be a stop-sign-controlled intersection. Which is it? What was assumed when doing the traffic analysis in the EIR?" *(Dave Full, Letter, 2/12/2023 [I-Full-5, PD-1])*

"Pages 2-35 through 2-39, Figures 2-23 through 2-26. Each of these figures mislabels 20th Avenue north of Buckingham Way." *(Dave Full, Letter, 2/12/2023 [I-Full-7, PD-1])*

"Page 2-40, Table 2-3. This table does not provide any information on the construction of roadway improvements. This table only describes the construction schedule for buildings. Given that roadway and intersection improvements are an integral part of the proposed project, this information needs to be provided.

Page 2-40, Section 2.E.1, paragraph 2. This paragraph basically states that construction can occur any time, day or night. There needs to be some assurance as to when construction will occur." *(Dave Full, Letter, 2/12/2023 [I-Full-9, PD-1])*

RESPONSE PD-1

The comments relate to the proposed project and draft EIR variant described in Chapter 2, Project Description, in the draft EIR. The comments ask if there is flexibility in the development program to increase the number of housing units or adjust other uses and request clarification regarding the non-potable water infrastructure description. The comments also ask questions or provide comments regarding the project description text and figures and the overall development program.

The response is organized as follows:

- Flexibility in the Overall Development Program
- Non-Potable Water Use Description
- Project Description Text and Figures

FLEXIBILITY IN THE OVERALL DEVELOPMENT PROGRAM

Comments ask whether there is flexibility in the proposed project or variant to allow the developer to adjust for future market conditions, such as increasing the number of housing units; reducing or shifting hotel, retail, or institutional uses to residential; or adding vertical height.

In response to comments, the project sponsor elected to revise the draft EIR variant to increase the number of residential units on site and remove the proposed hotel use. The revised variant would include 201 senior housing units. Residential units would also be added to other blocks on the project site by converting commercial space to residential space and modifying a midrise building to a tower building on Block S3. Overall, the revised variant would include an additional 411 residential units (334,000 square feet), an additional 411 parking spaces, no hotel use, and 104,000 square feet less office use at the project site compared to the draft EIR variant.

A description of the revised variant, its environmental impacts, and a comparison to the draft EIR variant, is presented in Chapter 2 of this RTC document. The analysis of the revised variant in Chapter 2 of this RTC document concludes that the revised variant's impacts would be similar to the draft EIR variant and would not result in any new significant impacts not already identified in the draft EIR, nor would the changes substantially increase the severity of impacts identified in the draft EIR.

As presented in Section 2.D.2, Comparison of Draft EIR Variant and the Revised Variant, of this RTC document, the revised variant would have the same overall characteristics and components as the draft EIR variant, including creating a new special use district (SUD) and Height and Bulk District that would rezone the project site and establish development controls for construction of a multi-phase, mixed-use project and a Special Sign District (SSD) that would establish site specific signage controls for the project, along with the Stonestown Galleria Mall. As is the case with the proposed project and the draft EIR variant, the revised variant would also include approval of a development agreement[21] between the project sponsor and the City. While there is some flexibility built into the SUD and development agreement approval process, should the project sponsor elect to make future changes to the scope of the approved project that are beyond the scope of the SUD, Height and Bulk District, SSD and/or the development agreement, the changes would be subject to further environmental review, as applicable, at such time they are proposed.

In addition, the proposed project, draft EIR variant, or revised variant scenarios proposed in the draft EIR and this document do not preclude the project sponsor from implementing variations of the approved project or to phase project construction in response to market needs. Per CEQA Guidelines Section 15160, lead agencies may use EIR variations consistent with the Guidelines to meet the needs of other circumstances, including preparation of a subsequent EIR pursuant to CEQA Guidelines section 15162, or preparation of a supplement to an EIR pursuant to CEQA Guidelines section 15163.

NON-POTABLE WATER USE DESCRIPTION

Comments state that all anticipated end uses of non-potable supply should be included in draft EIR Section 2.D.9, Infrastructure and Utilities, and ask why the non-potable water piping is not shown extending

[21] Development agreements ("DAs") are contracts between the City and a developer that lay out development rights and commitments; project rules and regulations; additional public benefits of the project; and implementation. City agencies work closely to ensure that development agreements contain community benefits that address the need for equitable outcomes, including significant affordable housing and local employment components. San Francisco Planning Department, 2020, Development Agreements, https://shorturl.at/ouPSW, Accessed September 14, 2023.

to NW1. In response to the comment, the text on draft EIR p. 2-36 was revised to clarify the non-potable supply uses to be consistent with the water supply assessment as follows:

- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of water from HVAC/cooling systems, graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or decentralized treatment facilities located within certain buildings as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.

Regarding Figures 2-25 and 2-26 on draft EIR pp. 2-37 and 2-38, these are intended to be high-level conceptual plans and do not show detailed connections. As noted on draft EIR p. 2-36 and above, the treated graywater would be distributed to all of the proposed buildings on the project site. Detailed plans showing infrastructure connections would be part of the infrastructure plan and master utility plans developed for the approved project. The master utility plans are subject to review and approval by the SFPUC prior to submittal of the basis of design or first street improvement plan approvals, before construction can begin. The infrastructure connections outlined above would not result in additional environmental impacts not analyzed in the draft EIR.

PROJECT DESCRIPTION TEXT AND FIGURES

Comments state that Figure 2-2 on draft EIR p. 2-5 contains errors pertaining to the land uses and has not been updated since the notice of preparation (NOP).

Figure 2-2 is intended to be a high-level general land use map indicating the primary uses in the area and does not necessarily correspond to the zoning designations. The existing zoning and height and bulk districts for the project site and immediate vicinity are presented in Figure 2-3, draft EIR p. 2-8. Regardless, Figure 2-2 (see p. 5-31) has been updated to address the comments.

In response to comments, the text under draft EIR Section 2.D, Project Characteristics and Components, p. 2-7, was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

> … Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3 (shown as Street A in Figure 2-4). …

In response to comments, the last sentence on draft EIR p. 2-1 and the first line on p. 2-2 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

> … The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned, and a new ~~straightened and converted to a~~ two-way connection to 19th Avenue (Street A) would be created between Blocks E1 and E3. …

In response to comments, the second bullet point on draft EIR p. 2-28 was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be ~~straightened~~ abandoned and ~~converted to~~ a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3 (shown as Street A on Figure 2-12). The westbound approach at 20th Street along Street A would be a right-turn-only lane. Street A would be approximately ~~20~~22 feet wide.

In response to comments, the second paragraph under Impact LU-1 on initial study p. 8 (see draft EIR Appendix B) was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east-west street between Blocks E1 and E3:

> Proposed modifications to existing streets include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3.

In response to a comment, the "CEQA Heights" noted on Figures 2-7 to 2-9 on draft EIR pp. 2-15 to 2-17 refer to the maximum building envelopes evaluated in the EIR, specifically for the wind and shadow analyses. Figures 2-7 to 2-9 (see pp. 5-32 to 5-34) were revised to clarify the definition of "CEQA Heights."

The following note has been added to the legends on Figures 2-7 to 2-9:

> ~~CEQA Heights~~ Maximum Building Envelope for Shadow and Wind Analyses

One comment seeks clarification about the vehicle parking spaces presented on draft EIR p. 2-18 and Table 2-1 on p. 2-12. The vehicle parking spaces in Table 2-1 show the spaces that would be retained, removed, and added to the project site, while the description on draft EIR p. 2-18 is for the total proposed for the project and variant without the net change comparisons. The 2,940 and 3,140 vehicle parking spaces for the proposed project and variant described on draft EIR p. 2-18 and in Table 2-2 on draft EIR p. 2-20 is inclusive of the 250 spaces retained under the shopping mall. In addition, the 540 vehicle parking spaces under Blocks W3/W4 would include both retail and residential spaces. The vehicle parking spaces in Tables 2-1 and 2-2 on draft EIR pp. 2-12 and 2-20, respectively, and text on p. 2-18 have been updated to clarify and correct the information.

In addition, as described in Chapter 2 of this RTC, the revised variant would add 411 parking spaces compared to the proposed project and draft EIR variant. For the sake of clarity, this response will address the specific elements of the revised variant where it differs from the variant.

As noted in Section D.4, Aesthetics and Parking (see draft EIR Appendix B, p. 7), the proposed project or draft EIR variant meets all of the criteria of CEQA section 21099. The revised variant also meets all of the criteria, for the same reasons described in the draft EIR. Therefore, the analysis does not consider parking in determining the significance of project impacts under CEQA. The text changes below do not change the analysis and are intended to present the vehicle parking information consistently.

The "vehicle parking spaces" row in Table 2-1 on draft EIR p. 2-12 was revised as follows:

Project Characteristics	Existing	Proposed Project	Proposed Project Including Variant
PROPOSED PARKING	**NUMBER (APPROXIMATE)**		
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,250** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,040~~ 2,690 spaces distributed throughout site *850 net new spaces*[e]	**4,450** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,240~~ 2,890 spaces distributed throughout site *1,050 net new spaces*[e]
Car-share parking spaces	0	66	68

The text under Section 2.D.6, Vehicle Parking on draft EIR p. 2-18 was revised as follows:

> In addition to the 250 spaces retained under the shopping mall, expanded 540-space parking garage below the shopping mall and the new 770-space parking garage, the proposed project would provide ~~2,940~~ 2,690 vehicle parking spaces embedded within the proposed building podiums and/or below grade throughout the site (see Figure 2-11). With the variant, ~~3,140~~ 2,890 vehicle parking spaces would be embedded within the proposed building podiums and/or below grade throughout the site, including an additional 200 parking spaces on Block E3E.

In addition, as described in Chapter 2 of this RTC, the revised variant would provide 4,861 vehicle parking spaces. As with the draft EIR variant, the revised variant would demolish the 700-space parking garage, remove 2,450 surface parking spaces, add 540 spaces for expanded parking below the shopping mall, and construct a new 770-space parking garage. The revised variant would add 411 spaces. Therefore, the remaining 3,301 spaces would be distributed throughout the site.

Table 2-2 on draft EIR p. 2-20 was revised as follows:

Block	Proposed Project Parking Spaces	Proposed Project Including Variant Parking Spaces
W2 Public Parking Garage	770	770
W3 and W4 Expanded Parking Garage Below Shopping Mall	540	540
Existing Shopping Mall Retained Parking	250	250
Parking spaces in remaining block podiums and/or below grade parking	~~2,940~~ 2,690	~~3,140~~ 2,890
Total	***4,250***	***4,450***

Comments state that indicating that the secondary access point for the project site is at Eucalyptus Drive and 20th Avenue is misleading. A project site can have multiple secondary access points and these are described in the third paragraph on draft EIR p. 2-6: "Secondary access points are located at Eucalyptus Drive and 20th Avenue at the north end of the site, Winston Drive and Buckingham Way at the west end of the site, and 19th Avenue and Buckingham Way at the south end of the site." In response to this comment, the first paragraph under Section 2.D.8, Transportation and Circulation Plan, draft EIR p. 2-20, was revised as follows for consistency:

> … The primary ~~and secondary~~ access point~~s~~ to the project site would continue to be at 19th Avenue at Winston Drive~~, and Eucalyptus Drive at 20th Avenue, respectively~~. Secondary access points would continue to be at Eucalyptus Drive and 20th Avenue, Winston Drive and Buckingham Way, and 19th Avenue and Buckingham Way. …

Comments state that the description of 20th Avenue on draft EIR p. 2-20 is not consistent with Figure 2-12 on p. 2-22. The analysis in the transportation and circulation section is based on the changes proposed by the proposed project or variant shown in Figure 2-12 and Figure 2-13, as noted on draft EIR p. 3.B-24. In response to these comments, the last bullet point on draft EIR p. 2-20 was revised as follows to clarify the range of travel lanes on 20th Avenue:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened, would have two to four travel lanes (predominantly one lane in each direction)~~,~~ and would range between 25 and ~~35~~ 44 feet in width. Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (one through lane in each direction and one lane in each direction for right turns). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one lane in each direction and one lane dedicated for left turns). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 2-17**, pp. 2-14 to 2-27.

In response to comments regarding Figure 2-14 on draft EIR p. 2-14, these are noted as conceptual illustrative street sections. Figure 2-14 on draft EIR p. 2-14 has been updated to reflect project sponsor updates and to address the comments (see p. 5-37).

One comment states that the description of the number of travel lanes on Buckingham Way between 20th Avenue and Winston Drive is not consistent with Figure 2-12 and Figure 2-18 on draft EIR pp. 2-22 and 2-29, respectively. In response to the comment, the first bullet on draft EIR p. 2-28 was revised as follows to clarify the range of travel lanes on Buckingham Way:

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to ~~two~~ three lanes ~~(one lane in each direction)~~ along the frontage of Block E5 near the intersection with 20th Avenue. West of Block E5, Buckingham Way would remain three travel lanes. Along Block E5, Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left-turn lane and one dedicated right-turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right-turn lane and one dedicated left-turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left-turn lane and one dedicated right-turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.

It should be noted that while the text was revised to clarify the range of travel lanes on Buckingham Way, the street configuration presented in draft EIR Figure 2-18 is what was analyzed in Section 3.B, Transportation and Circulation, of the draft EIR. The text was revised as a correction and refinement of information and is not a project change.

Comments request clarification regarding the traffic signal at Buckingham Way and Winston Drive. A traffic signal is proposed at Buckingham Way and Winston Drive. Figure 2-13 on draft EIR p. 2-23 has been corrected (see p. 5-36). A signalized intersection is assumed in the traffic analysis in the EIR, as noted on draft EIR p. 3.B-25 in the last bullet above the heading "Walking Network Features."

In response to comments, Figures 2-23 through 2-26 on draft EIR pp. 2-35 to 2-39 were revised to correct the street label for 20th Avenue (see pp. 5-45 to 5-48).

A comment states that Table 2-3 on draft EIR p. 2-40 does not provide information on the construction of roadway improvements. However, as noted in the last paragraph on draft EIR p. 2-40, "[e]ach phase would include demolition, site preparation, grading, excavation, infrastructure modifications, and building construction, with some phases overlapping." The roadway improvements would be constructed in the corresponding phases shown in Figure 2-27, draft EIR p. 2-41, and are included in the analysis for relevant resource topics.

A comment also claims that construction can occur at any time and there should be assurances as to when construction would occur. As noted in the last paragraph on draft EIR p. 2-40, construction would occur between the hours of 7 a.m. and 8 p.m., five days a week. The EIR identifies specific construction activities

that would extend beyond construction hours, "which include concrete pours, utility work, site maintenance activities and material delivery and handling." Nighttime construction noise is analyzed in Section 3.C, Noise and Vibration, on draft EIR pp. 3.C-33 to 3.C-34. As described on draft EIR p. 3.C-33, the analysis conservatively assumes concrete pours for each phase to be 24 to 48 hours in duration and concludes that even with implementation of Mitigation Measure M-NO-1, it would not reduce noise increases to below the 45 dBA interior standard; therefore, the nighttime construction impact is identified as significant and unavoidable with mitigation. As noted on draft EIR p. 3.C-33, noise level increases in excess of 5 dBA over the ambient noise levels during nighttime work require a special permit under section 2908(d) and are subject to approval by the director of public works or building inspection, who weigh in on factors such as noise and sleep disturbance effects, economic hardship, and general public interest. The permit would prescribe conditions under which nighttime construction could occur. Therefore, the project sponsor and its contractor(s) are subject to regulations and permit processes by which nighttime construction is allowed to occur and would not occur at any time as stated in the comment.

4.C Cumulative Analysis [CU]

The comments and corresponding response in this section cover the subjects included in Draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, related to cumulative projects. The comment topics relate to:

- CU-1: Cumulative Projects

4.C.1 Comment CU-1: Cumulative Projects

This response addresses the following comments, which are quoted below:

I-Boken-3

I-Full-12

"The cumulative impacts should include not only SF State housing and Park Merced but also Balboa Reservoir;" *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-3, CU-1])*

"Page 3-7, Table 3-1, Key No. 2, paragraph 2. The first sentence is not complete. It is not possible to understand the full scope of the Parkmerced project based on the information provided in this table." *(Dave Full, Letter, 2/12/2023 [I-Full-12, CU-1])*

RESPONSE CU-1

The comments relate to cumulative projects identified in the draft EIR, which are considered in the draft EIR's analysis of cumulative impacts.

A comment states that the cumulative projects considered in the draft EIR should include the Balboa Reservoir project.

In response to the comment, as discussed in the Approach to Cumulative Impact Analysis, pp. 3-5 through 3-6, in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, two approaches to a cumulative impact analysis are provided in CEQA Guidelines section 15130(b)(1). The analysis can be based on a list of present and probable future projects producing related or cumulative impacts, or a summary of projections contained in a general plan or related planning document. As discussed in the aforementioned approach to the cumulative impact analysis, the following factors have been used to determine an appropriate list of projects to be considered in the draft EIR's cumulative impact analysis:

- **Similar Environmental Impacts.** A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project or plan is defined as one that is "reasonably foreseeable," such as a proposed project for which an application has been filed with the approving agency or has approved funding, or an approved plan that amended the land use controls applicable to an adjacent neighborhood.
- **Geographic Scope and Location.** A relevant project is located within the defined geographic scope for the cumulative effect.
- **Timing and Duration of Implementation.** Effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with the effects of the proposed project.

As further discussed in the aforementioned approach to the cumulative impact analysis, the analyses in the draft EIR and the initial study (included as Appendix B to the draft EIR) employ a list-based approach and projections-based approach, depending on the environmental topic analyzed. For instance, the cumulative analysis for noise considers individual projects that are anticipated to occur in the project site vicinity that may affect noise-sensitive receptors also affected by the proposed project (list-based approach). By comparison, the cumulative utilities analysis relies on a projection of overall citywide growth and other reasonably foreseeable projects, which is the typical methodology the planning department applies to analysis of utilities impacts (projections-based approach).

For the resource topics using the list-based approach, draft EIR Table 3-1, pp. 3-7 to 3-8, presents a comprehensive list of cumulative development and infrastructure projects generally located within a 0.5-mile radius of the project site that are considered in the various cumulative analyses. These cumulative projects are projects that are currently under review by the planning department or for which a building permit is on file or was approved by the San Francisco Department of Building Inspection (building department). The Balboa Reservoir project was approved in August 2020. The Balboa Reservoir project site is north of the Ocean Avenue commercial district, west of the City College of San Francisco Ocean Campus, east of the Westwood Park neighborhood, and south of Archbishop Riordan High School, approximately 1 mile east of the project site. The Balboa Reservoir project is not located within the defined geographic scope (i.e., within a 0.5-mile radius of the project site) for the analysis of cumulative effects and is therefore not included in the list of projects to be considered in the draft EIR cumulative impact analysis. The 0.5-mile radius for the list-based approach was determined by the planning department to be the appropriate geographic scope for localized cumulative effects because impacts beyond that geographic scope grow more diffuse and therefore unlikely with increased distance beyond the 0.5-mile radius. The Balboa Reservoir project is reflected in the projected citywide growth assumptions applicable to other topics such as utilities impacts or traffic growth.

A comment states that the first sentence of the second paragraph in the description of the Parkmerced project in Table 3-1 on draft EIR p. 3-7 is not complete, and it is not possible to understand the full scope of the Parkmerced project based on the information provided in this table.

In response to the comment, the comment correctly identifies that the first sentence of the second paragraph in the description of the Parkmerced project in draft EIR Table 3-1 is incomplete. This is a typographical error. In response to this comment, the description of the Parkmerced project in Table 3-1 on draft EIR p. 3-7 was revised as follows:

> **Parkmerced (2008.0021ENV)**
>
> Subsequent phases of the Parkmerced project would add up to 5,679 new residential units to the 152-acre site's existing 3,221 housing units. It would also provide new commercial and retail services and open space. The transportation plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood and would include rerouting of the M-line light rail through the development and five major intersection improvements (including State Route 1/19th Ave), and structured underground parking beneath each block.
>
> The full project has a 15- to 30-year construction horizon, and would include demolition of existing buildings, utility relocation, site clearance, and grading. At buildout, the project would consist of approximately 8,900 dwelling units (including approximately 5,679 new units), approximately 6,252 net new spaces, 310,000 gross square feet of commercial use, 25,000 square feet of educational use, and 164,000 gross square feet of other uses (100,000 square feet of building and maintenance use, and 64,000 square feet of recreation/fitness center/community center).

The commenter's assertion that it is not possible to understand the full scope of the Parkmerced project based on the information provided in Table 3-1 is not supported. The relevant details of the Parkmerced project are provided in Table 3-1 of the draft EIR, and the inadvertent typographical omission that site preparation would include utility relocation, site clearance, and grading, which are typical components of site development, does not preclude an understanding of the scope of the Parkmerced project as relevant to the draft EIR's analysis related to cumulative impacts. In addition, the Parkmerced project is reflected in the projected citywide growth assumptions and therefore accounted for in the draft EIR's analysis related to cumulative impacts.

4.D Historic Architectural Resources [CR]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.A, Historic Architectural Resources. The comment topics relate to:

- CR-1: Historic Architectural Resources Analysis
- CR-2: Original Purpose of the Stonestown Mall

4.D.1 Comment CR-1: Historic Architectural Resources Analysis

This response addresses the following comments, which are quoted below:

A-CPC-Moore-3

A-HPC-1

I-Full-13

I-Full-15

"The other thing -- and that is my own personal comment, probably not really a DEIR comment -- the New Formalist-styled theater and its value kind of somewhat eludes me. I will be very honest. I have looked at it. I've been there.

The site is complicated due to the fact that the theater is actually in a bowl, so to speak, which makes the usability of that particular site, even in -- under any theater configuration difficult because the theater, as it is built, does not meet ADA requirements of how you get there.

That said, I would like to see a slightly larger elaboration historically, with pictures or whatever, to explain the New Formalist style. Having practiced in my field and my entire education, which is quite extensive, in architecture and architectural history, et cetera, the style of New Formalist has never crossed my desk. And it may be a regional expression. There is obviously similar styles practiced by Eero Saarinen with concrete that takes form similar to what's attempted here.

Without trying to sound facetious, I would like to see a slightly more in-depth explanation of the value of this building and its stylistic importance." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-3, CR-1])*

"The HPC had no comments on the analysis of historic resources on the site and found the analysis to be accurate. Some commissioners expressed their preference regarding the architectural style of the theater." *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-1, CR-1])*

"Page 3.A-9, Section 3.A.3, paragraph 1. It is news to residents in the vicinity of Stonestown that the project site is in the Lakeshore area of San Francisco. This is basic information and does not lead to confidence in the quality of the EIR.

Page 3.A-9, Section 3.A.3, paragraph 2. There is a description of the single-family homes east of the project site and an indication that they are Category B properties. Why is there no similar description of the single-family homes of Merced Manor, immediately north of the project site. This neighborhood was developed in the 1930s and has greater potential for being considered historic than the neighborhood east of 19th Avenue that was developed in the 1930s. This is a major oversight in the EIR and an analysis of the Merced Manor neighborhood and the impacts to the historic character of the neighborhood needs to be addressed in the EIR.

Page 3.A-15, paragraph 3. Something is not quite right with the first sentence. How can the building function as a twin theater from 1970 through 2020 and also acknowledge that the single auditorium was bisected in 1973?" *(Dave Full, Letter, 2/12/2023 [I-Full-13, CR-1])*

"Page 3.A-24, Impact CR-2. This impact analysis is not complete. Given that the EIR does not recognize the potential for Merced Manor to be a neighborhood with historic and architectural resources, this analysis is not complete. The EIR needs to include such an analysis." *(Dave Full, Letter, 2/12/2023 [I-Full-15, CR-1])*

RESPONSE CR-1

The comments relate to the value of New Formalism as an architectural style and consideration of adjacent neighborhoods, specifically Merced Manor, as a historic resource. Comments request additional discussion regarding the architectural stye attributed to the UA Stonestown Twin Theater and note that the historic architectural resources analysis is accurate. Comments express concern for the adequacy of the analysis pertaining to impacts on Merced Manor, the neighborhood immediately north of the project site, and question the architectural terminology and phrasing used in discrete sentences in the draft EIR.

A comment pertains to the characterization of the UA Stonestown Twin Theater as an example of the New Formalism style of architecture. The stylistic designation of this building as New Formalist appeared in the 2011 *San Francisco Modern Architecture and Landscape Design 1935–1970 Historic Context Statement*,[22] and the 2022 historic resource evaluation continued to identify the theater as an example of the New Formalism style (see draft EIR Appendix C.1). As part of their review of the draft historic resource evaluation, planning department preservation staff requested that a more thorough discussion of the style be included in the final draft historic resource evaluation. A separate memo was prepared, and its contents were "inserted in full" into the final draft.[23] The commenter is directed to the historic context statement (specifically p. 134 and several other references throughout the document) and the final historic resource evaluation (see draft EIR Appendix C.1, specifically pp. 107–113) for more information about the national and international context for the New Formalism style of architecture embodied by the UA Stonestown Twin Theater.

In response to the comment, the text on draft EIR p. 3.A-15 was revised to expand upon the local use of New Formalism:

> Compared to many other midcentury modern styles of architecture defined in the *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, New Formalism buildings in San Francisco are relatively rare. This style was most often applied to banks designed from 1963 into the 1970s, including the buildings at 275 Ellis Street (built in 1963, extant), 4947 Third Street (built in 1964, extant), and 2500 Mission Street (built in 1968, extant).[52] Larger-scale examples of institutional buildings in San Francisco designed in the New Formalism style include Kendrick Hall at the University of San Francisco (2100 Fulton Street, built in 1962, extant) and St. Mark's Urban Life Center (1031 Franklin Street, built in 1965, extant).[53] Architects associated with the New Formalism style in San Francisco include George K. Raad (who designed the UA Stonestown Twin Theater at 501 Buckingham Way); Wurster, Bernardi & Emmons; and Milton Pflueger.[54]
>
> <u>The UA Stonestown Twin Theater illustrates the New Formalist style through its strict symmetry, the round-arch, groin-vaulted colonnade that encloses three sides of theater lobby, its flat projecting roofline, the use of extensive glazing to enclose the theater lobby, and the presence of a small</u>

[22] San Francisco Planning Department, *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, January 2011, p. 134.
[23] Page & Turnbull, "Additional Content on New Formalism and the UA Stonestown Twin Theater for Stonestown Galleria HRE," prepared for the San Francisco Planning Department, April 12, 2022, p. 1.

> sunken courtyard with large aggregate concrete hardscaping and landscaping within concrete planters. The theater demonstrates nearly all of the features that are considered characteristic of the style, apart from a use of high-quality materials like stone. While the building's stylistic elements are limited to its front portion which encloses the lobby, as a freestanding building with a front plaza, the building is more expressive of the formal nature of New Formalism, providing an open-air arcade along three faces of the lobby, articulating the cross-vaulted groined arches, and carrying these design elements into the interior with the inclusion of blind arches along the rear wall of the lobby. The building is an excellent example of the New Formalist style along its primary façade, while the rear of the building is entirely undecorated, in keeping with movie theater typologies that prioritize the decoration of the public-facing façades and entrances of the building.

Additionally, a comment notes a preference for the architectural style of the UA Stonestown Twin Theater and states that the analysis presented in draft EIR Section 3.A is accurate. The comment is noted, and no further response is required.

Comments pertain to the consideration of adjacent neighborhoods—specifically the Merced Manor neighborhood—to include potential historic architectural resources. On draft EIR p. 3.A-9, it is stated that "potential historic and identified historic resources in the project vicinity and within the project site are shown in Figure 3.A-1 and described below." The Merced Manor neighborhood, while not identified by name in draft EIR Section 3.A, Historic Architectural Resources, is subsequently described on draft EIR p. 3.A-11 as "Properties north of the project site include single family homes just north of Eucalyptus Avenue" and is also identified in Figure 3.A-1 as "Age-Eligible Potential Historic Architectural Resources." Such resources are considered by the planning department to be Category B properties, meaning that they are at least 50 years old and have not been evaluated for historic significance. Regarding potential impacts related to potential historic architectural resources adjacent to the project site, the commenter is directed to the analysis under Impact CR-2 on draft EIR pp. 3.A-24 through 3.A-26, which specifically analyzes whether the proposed project or variant would result in a substantial adverse change in the significance of an adjacent historical resource. As stated in the analysis, the proposed project or variant would not have a significant impact on the setting of adjacent potential historic architectural resources due to the distance between the potential historic architectural resources and the project site. Furthermore, as discussed on draft EIR p. 3.A-25, the overall size, scale, and location of the buildings proposed to be located along the northern boundary of the project site were determined by planning department preservation staff to be compatible with the scale and location of the surrounding properties and therefore would not have the potential to significantly impact any of these adjacent potential historic architectural resources. For these reasons, the Impact CR-2 analysis is complete, and no further response is required.

A comment also raises concerns regarding the nomenclature used in two discrete sentences in draft EIR Section 3.A. Regarding the name of the neighborhood where the project site is located, the planning department considers the project site and all areas surrounding Lake Merced as being located within the greater Lakeshore neighborhood.[24] The commenter is directed to the San Francisco Property Information Map available online at https://sfplanninggis.org/pim/map.html. Therefore, the draft EIR correctly identifies the geographic setting of the project site and vicinity and correctly refers to it by the planning department's

[24] San Francisco Planning Department, San Francisco Property Information Map, https://sfplanninggis.org/pim/map.html, accessed March 15, 2023. Under the "Property" tab, check the "Neighborhoods" box to see the planning department's recognized neighborhoods.

designation although it may also be known in the community or in other documents by different names in documents not associated with planning department classifications.

In response to a comment, the third paragraph of draft EIR p. 3.A-15 was revised for clarity:

> The building functioned continuously as ~~the UA Stonestown Twin Theater~~ a movie theater from 1970 to 2020, and it has been minimally altered. ~~In 1973~~ Originally known as the UA Cinema Stonestown Theater, the ~~original~~ single auditorium was bisected in 1973 to create two smaller auditoriums, and it was renamed the UA Stonestown Twin Theater at that time. In 1998, amenities including a drinking fountain and public telephone were added, and renovations including new auditorium doors and improved restrooms were completed. That same year, the primary (east) façade was altered to include a new accessible entrance. Most recently, the roof was covered with built-up roofing in 2016.

4.D.2 Comment CR-2: Original Purpose of the Stonestown Mall

This response addresses the following comment, which is quoted below:

> I-Conroy2-7
>
> ---
>
> "In the 'history' section of the Draft EIR, there is no discussion of the public process by which the Stonestown Mall was first established. The EIR should analyze the initial purpose of the Stonestown Mall as described in the Planning Department documents governing the establishment of the mall, consider the benefits to the surrounding neighborhoods as expressed in those documents, and determine the negative impacts caused by the deviation from the parameters originally established for the Stonestown Mall." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-7, CR-2])*
>
> ---

RESPONSE CR-2

Draft EIR Section 3.A presents a summary of the historic development of the Stonestown Galleria Complex, which is discussed in greater detail in the historic resource evaluation (see draft EIR Appendix C.1). For the purposes of CEQA, effects on the environment are assessed through comparison of the existing conditions to changed conditions that may result from a project. Draft EIR Section 3.A assesses environmental effects on historic architectural resources. As determined in the historic resource evaluation response (see draft EIR Appendix C.3), the Stonestown Galleria Complex is not considered a historic architectural resource for purposes of CEQA. Therefore, an analysis of the initial purpose or original approval process of the Stonestown Galleria Complex as compared to its current purpose and that of the proposed project is not included in draft EIR Section 3.A because the Stonestown Galleria Complex is not considered a historic architectural resource. No further response is required.

4.E Transportation and Circulation [TR]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.B, Transportation and Circulation. References to the variant in this section also apply for the

revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topics relate to:

- TR-1: VMT Analysis
- TR-2: Pedestrian and Bicycle Safety Impacts
- TR-3: Transit Impacts
- TR-4: Transportation Analysis Methodology
- TR-5: Construction Traffic Plan
- TR-6: Characterization of 20th Avenue

4.E.1 Comment TR-1: VMT Analysis

This response addresses the following comments, which are quoted below:

I-Full-24

I-Pilpel-10

I-Riley-2

"Page 3.B-70, Induced Automobile Travel, paragraph 2. The statement that the 'features fit within the general types of project that would not substantially induce automobile travel' is not supported by any evidence. This project includes all sorts of development that WOULD induce automobile travel. Much more evidence is needed to back up this statement because the traffic volumes presented in Appendix D.1 show that there would be an increase in traffic as a result of the proposed project. That is the very definition of 'induced automobile travel'. As a result, there is no way to conclude that the project would NOT significantly increase traffic on local streets. This is a major flaw in the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-24, TR-1])*

"9. I found no coherent discussion in the Draft EIR of Vehicles Miled Traveled (VMT), energy consumption from being stuck in traffic, or emergency evacuation methods and routes.

10. The Draft EIR implausibly claims that the Project would have no impacts on VMT. New high-rises with thousands of residential units will of course impact VMT, which must be analyzed and mitigated." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-10, TR-1])*

"However, after reviewing the Environmental Impact Report, and as a resident that lives directly across the street from the mall, I am deeply concerned with three specific areas that the development will have on our neighborhood. The addition of 2,930 residences and a hotel will surely impact traffic, public transportation and emergency services.

As a neighbor I have first hand experience in observing the congestion that currently exists, the air quality issues that additional vehicles will add, and the need for additional transportation options and staffing for

emergency responders. I recommend scaling the project down in size to be less invasive." *(Christine Riley, Letter, 2/13/2023 [I-Riley-2, TR-1])*

RESPONSE TR-1

Several commenters express concerns regarding the impact of project-generated traffic volume on area roadways and disagree with the draft EIR's less-than-significant determination of vehicle miles traveled (VMT) impact. Commenters state that the proposed land uses and project-generated traffic would affect traffic, public transit, and emergency services and seek analysis of the proposed project and variant's impact on evacuation routes. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

As discussed below, the draft EIR adequately analyzed the impact of project-generated traffic volume on VMT, induced automobile travel, emergency access, and public transportation in the study area. Comments regarding traffic and congestion associated with development of the proposed project are addressed under Response GC-NON-CEQA-5: Non-CEQA Transportation Impacts, p. 4-133.

One commentor incorrectly states that there is no coherent discussion of VMT, energy consumption from being stuck in traffic, or emergency evacuation methods and routes. To the contrary, the draft EIR analysis provides analysis and discussion of project effects on VMT in EIR pp. 3.B-70 through 3.B-71. Energy consumption from sitting in traffic is not relevant to CEQA findings because VMT is more directly related to environmental impacts.[25] Discussion of the adequacy of emergency evacuation routes is provided in Response TR-4.

The comments incorrectly state that the draft EIR lacks evidence to support the conclusions regarding VMT and induced automobile travel. The draft EIR analysis does not rely on total VMT to assess the VMT efficiency of the project. The analysis uses VMT efficiency metrics (per capita or per employee) for thresholds of significance, consistent with standard and accepted department practice.[26] VMT per capita reductions mean that individuals will, on average, travel less by automobile than previously but, because the population will continue to grow, it may not mean an overall reduction in the number of miles driven. Impact TR-5 on draft EIR pp. 3.B-70 through 3.B-71and Impact C-TR-4 on draft EIR p. 3.B-84 address how the proposed project or variant meets the department's VMT efficiency screening criteria, which demonstrates how the project or variant would not cause substantial additional VMT on a per-capita basis.

The draft EIR, on p.3.B-71, states that certain features of the proposed project or variant, which qualify as "Active Transportation, Rightsizing, and Transit Projects" and "Other Minor Transportation Projects," fit within the general types of projects that would not substantially induce automobile travel. The commenters incorrectly state that the statement is not supported by any evidence. Appendix L of the planning department's Transportation Impact Analysis Guidelines (SF transportation guidelines)[27] provides the

---

[25] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA,* April 2018, https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf.
[26] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update,* February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.
[27] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update,* February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.

substantial evidence that this type of infrastructure does not generate additional VMT.[28] The qualifying features are physical changes (transportation elements), as opposed to land use development. For these reasons, the analysis is adequate and meets CEQA requirements. VMT impacts under the revised variant are discussed in Chapter 2 of this RTC document.

A commenter opines that the proposed land uses would affect traffic, emergency access, and public transit, and recommends scaling down the project. The draft EIR follows the planning department's SF transportation guidelines to evaluate emergency access under Impact TR-3 (draft EIR pp. 3.B-63 through 3.B-65) and Impact C-TR-2 (draft EIR p. 3.B-78) and identified the impacts to be less than significant. The impact of increased demand for emergency services is discussed under Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105. For transit impacts, the draft EIR identified Mitigation Measures M-TR-4a, Reduce Project Vehicle Trips; M-TR-4b, Transit Travel Time Reduction Measure; and M-C-TR-3, Signal Coordination and Transit Signal Priority along 19th Avenue, to address the significant transit delay impacts identified under Impact TR-4 and Impact C-TR-3. Transit impacts under the revised variant are discussed in Chapter 2 of this RTC document. Under the revised variant, the project-level impact would be less than significant with mitigation, which is the same with the proposed project and different from the draft EIR variant. The cumulative impact would be the same as the proposed project and draft EIR variant and would be significant and unavoidable with mitigation. The comment does not provide evidence that the draft EIR's analysis on those topics is inadequate. The commenter is also referred to Response AL-4, Adequacy and Reasonable Range of Alternatives, on p. 4-86.

4.E.2 Comment TR-2: Pedestrian and Bicycle Safety Impacts

This response addresses the following comments, which are quoted below:

I-Chang-3

I-Full-6

I-Full-21

I-Kashi-2

I-LBirsinger-4

I-Will-1

O-SFSU-3

O-SFSU-4

I-Parthasarathy-1

I-Naraghi-1

---

[28] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Appendix L Vehicle Miles Traveled (VMT)/ Induced Automobile Travel*, February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.
Page L-11 describes the methodology for assessing a transportation project's impacts to VMT. Existing research supporting the methodology are presented in Attachment C of the appendix.

"(3) We have a lot of foot traffic near the Stonestown mall, with the increase of traffic and populations, it will likely to have more car/pedestrians accidents." *(Mary Chang, Letter, 2/7/2023 [I-Chang-3, TR-2])*

"Page 2-34, Figure 2-22. An explanation is needed for how bicyclists will be safe when transitioning from one-way bikeway each of 20th Avenue on Winston Drive to a two-way bikeway west of 20th Avenue on Winston Drive. Will there be a separate traffic signal cycle for bicyclists traveling westbound through the intersection? Given the Safe Streets initiative in the City of San Francisco, this needs to be addressed. In a similar fashion explain the same transition at the intersection of 20th Avenue and Eucalyptus Drive and at the intersection of Buckingham Way and Winston Drive." *(Dave Full, Letter, 2/12/2023 [I-Full-6, TR-2])*

"Page 3.B-57, Impact TR-2. As stated in the comments on page 2-34, there is no analysis of the impacts associated with bicyclists needing to weave through intersections and the impact on the safety of bicyclists as a result of the location of the bike lanes. This analysis needs to be included in the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-21, TR-2])*

"If you review the record drawings for 19th Avenue, you would notice that the side slope from the back of the sidewalk towards the property lines on Lakeside is cut to a 1:1 slope over imported sand. This is why the sidewalk on 19th Avenue is useless and constantly covered with soil and vegetation. Public sidewalk should have been protected with retaining walls decades ago. Once again, deferred maintenence has made the sidewalk vulnerable which burdens the Stonestown Development." *(Kevin Kashi, Letter, 2/8/2023 [I-Kashi-2, TR-2])*

"**Section 3.2. Traffic**

- Of particular concern is for pedestrians crossing at the intersections of 19th and 20th Avenues at Winston and Eucalyptus. These pedestrians are students, shoppers, and residents walking to and from public transportation." *(Laura Birsinger, Letter, 2/5/2023 [I-LBirsinger-4, TR-2])*

"Please provide safe access during all phases of construction between the student-accessed pathway in Rolph Nichol park and the stop-sign controlled crosswalk on Buckingham Way in front of the existing movie theater for Lowell High School students to access the Stonestown Mall during the 10-years planned development. Lowell High School is a neighbor of the Stonestown mall, and is the biggest high school in San Francisco with 2,800 students. Lowell students are frequent mall customers both during lunch and after school." *(Tina Will, Letter, 2/3/2023 [I-Will-1, TR-2])*

"3) Pedestrian and Bicycle Connections: Currently, there is a great deal of pedestrian and bicycle activity between SF State and the project site. We expect this level of activity to increase significantly under the proposed project—both from residents and patrons of the Sonestown site, as well as residents and students at SF State. It will be critical that bike and pedestrian routes are mutually planned and

implanted to ensure safe and clear paths of travel. Ample bicycle parking will also be needed to support this effort." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-3, TR-2])*

"4) Street Configuration: Please assess the proposed layout of both Buckingham Way and Winston Drive, as they relate to the anticipated increase in travel between SF State and the project site. We expect that many students, faculty and staff who live on campus or who will live at the project site and walk to SF State will cross one or both of these streets. Safe passage, clear paths of travel, and appropriate vehicle signals will be critical to support this activity." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-4, TR-2])*

"Hello, I am a homeowner in Lakeside and am writing to express my concern about the environmental impact of the proposed Stonestown project. I am particularly concerned about the traffic on Winston Drive and 19th Avenue, the resulting decrease in air quality (which is already noticeable the closer you get to 19th avenue) and hazards to pedestrians. The traffic situation at the corner of Winston & 19th is already quite bad: I have witnessed multiple accidents and was personally almost run over by a car. I am particularly concerned for the many schoolchildren in the area." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-1, TR-2])*

"My family has been living in the Lakeside neighborhood since 2010 and like the close proximity to Stonestown and the other retail outlets in the area. As it is, the traffic congestion has become much more dense. We feel the Stonestown redevelopment will adversely affect the standard of living in our neighborhood due to the following factors:

1. Congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues." *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-1, TR-2])*

RESPONSE TR-2

The commenters express concerns regarding potential increases of pedestrian-related collisions due to additional vehicle traffic generated by the proposed project or variant and state that the project should provide safe bike and pedestrian access to the project site during construction and after project completion.

As discussed below, the draft EIR adequately analyzed the potential impacts to pedestrians and bicyclists that would result from the construction and operation of the proposed project and variant. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

Responses to comments are organized as follows:

- Construction Impacts

- Operational Impacts
  - Intersection Safety
  - Proposed Walking and Bicycling Infrastructure
  - Pedestrian Access

CONSTRUCTION IMPACTS

Commenters state that nearby school students access the Stonestown Galleria shopping mall during lunch time and after school and that the proposed project or variant should provide safe access to the mall during all phases of construction. Section 3.B, Transportation and Circulation, in the draft EIR documents the requirements regarding potentially hazardous conditions and accessibility during construction on pp. 3.B-51 to 3.B-53, which include providing a 4-foot-wide clear path of travel on any public sidewalk at all times when a sidewalk is closed during construction activities. The analysis also identifies Mitigation Measure M-TR-1 to apply to both public and private streets, which requires the project sponsor to submit a plan to the City for approval that would demonstrate how the proposed project or variant's construction contractor(s) would reduce potential conflicts with people walking or bicycling and minimize sidewalk closures.

OPERATIONAL IMPACTS

INTERSECTION SAFETY

Several comments refer to increased automobile, pedestrian, and bicycle activity under the proposed project or variant and express concern regarding collisions. The intersections of concern mentioned by the commenters are:

- 19th Avenue/Winston Drive
- 19th Avenue/Eucalyptus Drive
- 20th Avenue/Winston Drive
- 20th Avenue/Eucalyptus Drive
- Buckingham Way/Winston Drive

The draft EIR assesses whether the proposed project or variant would create potentially hazardous conditions for people walking, bicycling, or driving or public transit operations under Impact TR-2 on pp. 3.B-57 through 3.B-63. For purposes of CEQA, an impact is considered significant if it would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. Hazardous conditions include engineering aspects of a project (e.g., speed, turning movements, complex designs, substantial distance between street crossings, sight lines) that may cause a greater risk of collisions that result in serious or fatal physical injury. Existing walking and bicycling conditions, including collision history and general impediments to walking, are described on draft EIR pp. 3.B-7 through 3.B-12. Existing walking impediments identified at the intersections mentioned above are lack of marked crosswalks (at the south leg of 19th Avenue/Winston Drive and the east leg of 20th Avenue/Winston Drive) and multiple turn lanes, which create long pedestrian crossing distances and increased exposure to risk for people walking compared to single turn lanes (at 19th Avenue/Winston Drive and 19th Avenue/Eucalyptus Drive).

The additional vehicle trips generated by the proposed project or variant have been considered and the five intersections mentioned by the commenters are analyzed in the draft EIR. The analysis identifies potential queue spillovers from 19th Avenue to 20th Avenue at both Winston Drive and Eucalyptus Drive intersections during weekday p.m. peak hour. However, because the proposed project or variant would not introduce design features that would block sightlines or increase vehicle speeds as compared to existing conditions, the draft EIR concludes that the proposed project or variant would not create potentially hazardous conditions and no mitigation measures are required. Furthermore, the project or variant proposes a series of modifications at those intersections (and other study area intersections and roadway segments) that would improve safety for people walking or biking. These modifications are described in Section 2.D.8, Transportation and Circulation Plan, on draft EIR pp. 2-20 to 2-32 and in Section 2.B, Summary of Revisions to the Proposed Project, on p. 2-2. and include:

- Removing existing channelized right-turn lanes ("slip lanes")
- Reducing lanes and restricting turning movements
- Providing additional crosswalks
- Providing bike facilities including Class I, Class III, and Class IV facilities

The modifications would be implemented with the proposed project or variant and would promote slower speeds along study area roadways and would reduce the number and type of potential conflicts among competing travel modes at the intersections where commenters raised concerns.

The revised variant would implement the same modifications except that it would retain the separated westbound right-turn on Winson Drive at 20th Avenue. As analyzed in Chapter 2 in this RTC, similar to the proposed project and draft EIR variant, the revised variant would not create potentially hazardous conditions and no mitigation measures are required.

PROPOSED WALKING AND BICYCLING INFRASTRUCTURE

Walking and bicycling accessibility to and within the project site are analyzed in the draft EIR under Impact TR-3 on pp. 3.B-63 through 3.B-65. As noted above, the proposed project or variant would provide infrastructure modifications that would enhance accessibility for people walking and bicycling to and through the project site.

One comment notes that ample bicycle parking will be necessary for the proposed project or variant but does not dispute the adequacy or accuracy of the draft EIR. The supply of bicycle parking is not a CEQA topic. For informational purposes, the draft EIR documents the proposed new bicycle parking spaces on p. 3.B-27 (1,130 in the proposed project and 1,176 in the draft EIR variant) and estimates weekday p.m. peak-hour bike trips on p. 3.B-34 (106 generated by the proposed project and 110 generated by the draft EIR variant). As presented in Chapter 2 of this RTC, the revised variant would provide 1,277 bicycle parking spaces (101 more than the draft EIR variant) and estimates 115 weekday p.m. peak-hour bike trips (five more than the draft EIR variant).

Several comments state that bicyclists would need to weave through intersections where one-way bike facilities transition into two-way bike facilities (or vice versa), and the draft EIR should analyze the corresponding safety impact. Contrary to these comments, this analysis is included in the draft EIR. As discussed under Impact TR-3 in the draft EIR, on pp. 3.B-63 through 3.B-65, the proposed project or variant

would provide signals to separate competing travel modes in space (dedicated paths) and/or time (dedicated signal phases) at intersections. This would also be provided under the revised variant, presented in Chapter 2 of this RTC document. The plans presented in the draft EIR are conceptual. As revised under Chapter 2 of this RTC, separated one-way and two-way bicycle lanes would be included. The project sponsor would also coordinate with SFMTA for detailed design to implement best practices and agency design standards that minimize the potential for conflict among competing travel modes at intersections. Based on this, the project, variant, or revised variant would not create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations.

A commenter opines on deferred sidewalk maintenance and states that the east side of 19th Avenue is covered by soil and vegetation. As discussed under draft EIR Impact TR-3 on p. 3.B-63, sidewalks provided by the proposed project or variant would conform to the Better Streets Plan, comply with the Americans with Disabilities Act (ADA), and provide streetscape elements to encourage walking. This comment addresses existing sidewalk conditions beyond the boundary of the project site and not the project impacts on sidewalks in the study area.

PEDESTRIAN ACCESS

A commenter states that many students, faculty, and staff of San Francisco State University (SFSU) would walk to and from the project site via Buckingham Way and Winston Drive. The commenter asks that the project provide safe pedestrian access along the two streets. As presented in draft EIR Table 3.B-10, on p. 3.B-34, walk trips (including those between SFSU and the project site) were considered in the trip generation and distribution process, and are reflected in the discussion of Impact TR-2, on draft EIR pp. 3.B-57 through 3.B-63, Impact TR-3, on draft EIR pp. 3.B-63 through 3.B-65, and Impact C-TR-2, on draft EIR p. 3.B-78. The draft EIR concludes that the proposed project or variant would not create potentially hazardous conditions for people walking and would not interfere with pedestrian accessibility to and from the site.

Furthermore, as part of the proposed project or variant, continuous sidewalks would be provided along Buckingham Way (North and South) and Winston Drive throughout the project site. The project or variant also proposes to add crosswalks at the following locations:

- North leg and east leg at 20th Avenue/Buckingham Way South
- North leg and east leg at Winston Drive/Winston Drive near Block S3
- North leg and west leg at Buckingham Way East/Street C

These features would reduce potential conflicts between pedestrians and other competing travel modes for pedestrians traveling between SFSU and the project site.

4.E.3 Comment TR-3: Transit Impacts

This response addresses the following comments, which are quoted below:

I-Chang-8

I-DeBaun-9

I-Full-23

I-Goodman-1

I-Goodman-3

I-Goodman-5

I-Herlihy1-12

I-Hong-2

I-Naraghi-12

I-Parthasarathy-13

I-Pilpel-3

I-Pilpel-4

I-Tsakalakis-3

O-SFSU-1

"(8) SFMTA streetcar platform is already at capacity during rush hours. can you address the impact of increased ridership." *(Mary Chang, Letter, 2/7/2023 [I-Chang-8, TR-3])*

"8. Section 3.2: The platform for the SFMTA streetcar on 19th Avenue and Holloway are already not adequate during peak times such as morning and evening rush hours. The impact this project will have on ridership must be addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-9, TR-3])*

"Page 3.B-65, MUNI Transit Service, paragraph 2. The 28R MUNI route has been suspended and should not be included in the transit analysis. In addition, Table 3-B-15 on page 3.B-66 and Table 3.B-19 on page 3.B-80 need to be revised to not include the 28R route to determine impacts associated with transit delay. The EIR preparers should search for '28R' and modify the analysis throughout the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-23, TR-3])*

"I attended the initial Stonestown proposal meetings and submitted comments in person on the need to look carefully at the transit options and alternatives to properly link and loop transit lines into and around the 3 major projects on the west side.

I also suggested and submitted some simple pencil sketches on an alternative for the M-Line and L-Taraval to be linked via SLOAT Blvd and the 20th Street being the connection point vs. the undergrounding of the M-Line through the Ocean Ave neighborhood and residential areas.

The suggestion was to help quicken the transit changes which have so far been negligent on all redevelopment projects since their inception.

The L-Taraval if linked back up Sloat deals with the loss of the ocean highway area and the need to bring the train line up to sunset blvd or loop the L-Taraval up sloat and to a 'T' intersection where the undergrounding could begin off of 19th Ave and on the broader sloat blvd area. The existing pumpkin patch site and Stern Grove music festival and outsidelands music festival could all benefit from the entry to stern grove and a mixed use redevelopment for access to the underground station at the pumpkin patch and run the train on 20th south into Stonestowns redevelopment area.

We had suggested the need to look at the YMCA (existing main facility) and the YMCA Annex and pet-co site as where the train would turn up along the existing ramp for cars exists, and bring it up level and alongside 19th Ave on the west side of the street across from Mercy HS. This could also become a new urban plaza with additional density and office space on both sides of the existing parking lot for the fitness sports center, and possible reworking of the church buildings as noted as possible future redevelopment sites.

There is a need to look comprehensively at ALL 3 projects and the lacking movement on the M-Line undergrounding or at or above grade. Using topography there is significant changes out to the Daly City BART station, and providing the direct linkage to Daly City BART is a key component of ANY mall redevelopment. The fact that Parkmerced and SFSU both ignored this entirely only making it a gesture with the SFMTA calling it Tier-5 future connections ignores the upfront need to get people out of there cars and onto the main transit linkages.

When this project and the other projects are in construction or moving forward, trucks, deliveries, and work crews will be at ALL sites, and it would be preferable to have access via public transportation already implemented vs lagging severely in changes and implementation.

We had discussed this also prior with Peter Albert who worked with the SFMTA on transit issues on the other initial projects.

The stonestown proposal cannot be expected to fix all the transit issues, but Parkmerced and SFSU also ignored the lacking MOU's an push and need to get a transit plan in place and moving forward. Due to the SFMTA being overly invested downtown they have missed a great opportunity to increase the linkages and equitable investment in transit on the westside of San Francisco.

The delays getting downtown and to other districts or future lines like the Geary system or future subway, and the presidio via sunset blvd indicates a lacking equitable policy on transit solutions across the board as a network system." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-1, TR-3])*

"The lack of traffic and transit coordination is highlighted by the turn at the Target, and Trader Joe's from Winston and the problems with timing and dangerous turning at this location, and the impacts of traffic flows from the sunset and 19th ave into and around the stonestown mall during school and work hours.

The other issue is the lack of forthright communication on the 1952 Interchange at Brotherhood Way, the Alemany 'fly-over' that connects to Daly City and south I-280 and the need to look at the Junniperro Serra intersection interchange out to daly city BART as a new entrance into SF and redevelopment project that addresses lacking transit connectivity, air-rights and redevelopment of Caltrans and BART property, and looks at including Daly City and there mall and office block tower area towards parkmerced and possibly plinthing over the freeway to improved pedestrian and housing options nearby. The Tier-5 level connection issues that are needed for federal funding and linkages and address of the older overpass clover-leaf and over-pass flyway is important as an egress route from the city, and infrastructure that is much older and needed to be changed and improved due to the pressures of redevelopment.

The cambon supermarket site also may cause a need for a station stop for muni at or above if it is redeveloped as a senior center and housing towers per John Jweinat's proposal, so the need to discuss the transit issues becomes a priority when you see the domino effect of redevelopment and lacking progress on the M-line or future extension to Daly City BART not even in initial planning for the M-Line or linkages to other bi-county transit hubs." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-3, TR-3])*

"I will attached any prior documents I have sent under separate email to be included in the comments for the EIR deadline for written comments.

Thank you for your time and consideration in the review of the SFMTA plans and the need to push all three developers to the table for a more robust and serious conversation on the transit changes that can help people get to the mall without a car, and connect other districts to the mall area." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-5, TR-3])*

"12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-12, TR-3])*

"After reviewing the document and as a shopper since the mid 1960's and ditching my car, I would like to entertain and see if Muni/MTA could make the 'M' some how make the stop at 19th and Winston a bit safer, i.e. run under ground in to the mall. Currently I believe there are plans to upgrade the 19th route. Currently there are several muni stops in the mall itself but are from the West Portal station and not from downtown via the tunnel. But lets save this for the RTC phase." *(Dennis Hong, Letter, 2/6/2023 [I-Hong-2, TR-3)*

"12) The impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-12,TR-3])*

"12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-13, TR-3])*

"3. The Draft EIR admits that the Project would cause 'significant and unavoidable impacts related to transportation and circulation, air quality, noise, historic architectural resources, and wind after implementation of mitigation measures.' The Draft EIR fails to fully address transportation and circulation impacts and air quality impacts. After admitting that the Project would 'substantially delay public transit,' the Draft EIR claims that impact is unavoidable. The Draft EIR does not adequately address or mitigate impacts on either automobiles or public transit." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-3, TR-3])*

"4. The environmental impacts must be addressed and not relegated to a Statement of Overriding Considerations (SOC). The impacts will have regional impacts, not just local impacts. 19th Avenue, part of State Route 1, connects the Golden Gate Bridge to Interstate 280 in Daly City." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-4, TR-3])*

"While there was discussion of public transportation in the EIR, there doesn't seem to be acknowledgement that the Mline is woefully inadequate today. **What will the Stonestown developers contribute financially to improving the Mline?** The Stonestown station has a small platform that barely accommodates passengers today. It also makes no sense for stations to be located above ground in the middle of the busy 6-lane 19th Avenue. The M-line should go underground from West Portal station so that trains can be longer and not muddle along with cars/ bicycles/ buses. Locating stations on the West side of 19th would remove the need for most passengers to cross 19th Avenue from the Mall. By comparison, there is relatively little demand for public transport from the low-density Lakeside district on the East side of 19th Avenue. The K should also go underground until at least after St. Francis Circle." *(Kath Tsakalakis, Letter, 12/23/2022 [I-Tsakalakis-3, TR-3])*

"1) Transit Services: With a significant increase in the anticipated number of transit riders on the SFMTA's M-Line, please analyze whether there may be value in any of the following approaches:

- A) extending platforms at stations along the corridor to permit three-car trains;
- B) extending the J-Church line to the Holloway/SFSU or Winston/Stonestown Stations, so that both the M and J lines can serve the project site and others in the vicinity." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-1, TR-3])*

RESPONSE TR-3

The comments opine on inadequate M Ocean View station platform capacity during peak hours and the approach to the transit analysis, and express concerns regarding lagging transit development and lack of coordination with existing land use and other proposed plans and suggest measures to improve transit service.

As discussed below, the EIR adequately analyzes the potential transit impacts that would result from the proposed project, draft EIR variant, and revised variant. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

The response is organized as follows:

- Muni Route 28R
- Transit Station Capacity
- Transit Mitigation Measures
- Cumulative Transit Impacts

MUNI ROUTE 28R

One commenter questions why the suspended Muni route 28R was included in the transit delay analysis.

As discussed in Appendix D.2, Transit Analysis Memorandum, the selection of transit routes to analyze, including the suspended Muni route 28R, were coordinated with SFMTA and were documented in the scope of work attached to the memorandum. The transit analysis memorandum scope of work states that a description of transit lines and stops would "reflect conditions prior to the COVID-19 pandemic (i.e., before March 2020), except for the changes the MTA made to the 57 and 58 during the pandemic and anticipates keeping after the pandemic." At the time the analysis conducted, the MTA anticipated Muni route 28R would be in service by fall 2023, well before the time the earliest phase of the Stonestown project is in operation (currently in 2028).[29] As of September 2023, Muni route 28R is in service.

TRANSIT STATION CAPACITY

Some comments seek impact analysis on Muni M Ocean View station capacity and associated measures to address issues, citing over-capacity conditions at the two stations near the project site (Stonestown/Lakeside/Winston and 19th Avenue and Holloway Avenue) during peak travel times.

Transit capacity or transit station capacity is not used to determine the significance of a transportation impact, by itself. This is consistent with guidance from the Governor's Office of Planning and Research, which recommends not treating the addition of new users on a transit system as a significant impact. As stated by the Governor's Office's Technical Advisory on Evaluating Transportation Impacts in CEQA:[30]

> *"When evaluating impacts to multimodal transportation networks, lead agencies generally should not treat the addition of new transit users as an adverse impact. An infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network."*

[29] Smith, Adam, Transportation Planner, San Francisco Municipal Transportation Agency, e-mail correspondence with Kei Zushi, Senior Planner, San Francisco Planning Department, October 12, 2023.
[30] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA,* April 2018, https://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf.

However, the addition of new transit users was considered for the draft EIR transit delay impact analysis in two ways:

1. As described on draft EIR pp. 3.B-42 and 3.B-43, passenger boarding delay is one of three components factored in the analysis. Table 11 in Draft EIR Appendix D.2, Transit Delay Analysis shows these detailed delays for each study transit route.
2. In addition, Draft EIR Appendix D.2, Transit Analysis Memorandum, assessed if the proposed project or variant may contribute increased transit ridership that would cause a transit line or route to exceed its 100 percent or "crush" capacity, requiring a reassessment of the estimated project mode share. The analysis shows that the increased ridership demand from the proposed project or variant would not cause ridership on K Ingleside Bus, T Third Street, or M Ocean View to exceed capacity. As shown in Table 17 in Draft EIR Appendix D.2, the proposed project and variant would add approximately 10 to 15 percent to existing ridership during the weekday p.m. peak hour at these platforms.

TRANSIT MITIGATION MEASURES

One comment questions how the project would mitigate the transit delay impacts. The draft EIR follows the planning department's SF transportation guidelines[31] to evaluate transit impacts and identified Mitigation Measures M-TR-4a, Reduce Project Vehicle Trips; M-TR-4b, Transit Travel Time Reduction Measure; and M-C-TR-3, Signal Coordination and Transit Signal Priority along 19th Avenue, to address the significant transit delay impacts identified under Impact TR-4 and Impact C-TR-3, which would apply to the proposed project, draft EIR variant, and revised variant. The proposed project's project-level impacts are less than significant but cumulative impacts are significant and unavoidable with mitigation. For the draft EIR variant, the impacts remain significant and unavoidable after mitigation at the project-level and cumulative conditions. The revised variant, as with the proposed project, has less-than-significant project-level transit delay impacts but would be significant and unavoidable with mitigation under cumulative conditions. Mitigation measures M-TR-4a, M-TR-4b, and M-C-TR-3 apply to the proposed project, draft EIR variant, and revised variant. The comments received on the draft EIR do not present evidence that the transportation analysis was inadequate, or that there would be any new significant impacts not addressed in the draft EIR or a substantial increase in the severity of impacts identified in the draft EIR.

Several comments propose measures to reduce transit delay and increase Muni Metro Rail station capacity or additional transit design features. The commenters propose a series of other possible measures or design features, as shown below:

- Underground K Ingleside Bus and/or M Ocean View
- Extend station platforms to permit three-car trains
- Extend J Church line to serve stations near the project site
- Financial contribution to Muni M-Ocean View route

As discussed below, the commenters do not raise feasible mitigation measures to address the project's significant environmental effects.

[31] San Francisco Planning Department, *Transportation Impact Analysis Guidelines Update,* February 14, 2019, last updated in October 2019, https://sfplanning.org/project/transportation-impact-analysis-guidelines-environmental-review-update#impact-analysis-guidelines.

CEQA Guidelines section 15126.2 states that "[a]n EIR shall identify and focus on the significant effects of the proposed project on the environment … the EIR shall also analyze any significant environmental effects the project might cause or risk exacerbating by bringing development and people into the area affected." In addition, under CEQA and US constitutional requirements, mitigation measures in an EIR must have an essential nexus (i.e., connection) between the mitigation measure and a legitimate government interest and the mitigation must be "roughly proportional" to the impacts of the project (CEQA Guidelines section 15126.4(a)(4)(A) and (B)). Mitigation measures are not required for effects that are not found to be significant (CEQA Guidelines section 15126.4(a)(3)).

The mitigation measures identified in the draft EIR meet these requirements. The Transit Analysis Memorandum identifies additional transit delay reduction strategies considered but rejected (p. 30).

Extending station platforms would improve passenger boarding and alighting time for Muni Metro Rail passengers. However, no significant delay impact was identified for the Muni Metro Rails in the draft EIR section. The suggestion would not be applicable to bus routes where significant delay was identified (Muni 57 Parkmerced, 28 19th Avenue and 28R 19th Avenue Rapid, and SamTrans 122). Similarly, other suggested measures (i.e., underground and extend Muni Metro Rail lines) would not reduce the significant delay identified on bus routes. The project sponsor cannot be required under CEQA to make a financial contribution to improve the operation of Muni M-Ocean View route because the project, variant, or revised variant would not result in a significant transit delay impact on the Muni route. However, for informational purposes, the project sponsor would be required to make a Transportation Sustainability Fee (TSF) contribution per Planning Code section 411A. TSF contributions are in place to fund the SFMTA and other regional transportation agencies in an effort to maintain the existing levels of transportation service as demands on the system grow.

CUMULATIVE TRANSIT IMPACTS

Several comments seek coordination with developers of Parkmerced and SFSU on transit improvements. As documented in draft EIR Table 3-1 on p. 3-7, both projects, along with other projects proposed within a 0.5-mile radius of the project site and other projects assumed in the future year projections, are considered under cumulative conditions in the analysis.

On draft EIR p. 3.B-83, the analysis also discusses an identified cumulative significant impact from the Parkmerced project on SamTrans Route 122 northbound. The Parkmerced EIR identified mitigation measures, including additional lane capacity along Lake Merced Boulevard and queue jump lanes along SamTrans Route 122.[32] If they were implemented, the significant cumulative impact would be reduced. However, as noted on draft EIR p. 3.B-83, the implementation of these mitigation measures cannot be guaranteed because they are tied to Parkmerced's construction and because the associated transit improvements have not been approved by public agencies (e.g., Caltrans) for construction at the time the Stonestown Development Project draft EIR was circulated for public review.

A commenter states that the draft EIR should address regional impacts on 19th Avenue. Cumulative transit delay is addressed under Impact C-TR-3 on draft EIR pp. 3.B-78 through 3.B-83. Under cumulative conditions, the proposed project or variant, in combination with anticipated future development, would increase transit delay and would exceed the significance threshold for Muni 57 Parkmerced, 28/28R combined, and SamTrans

[32] San Francisco Planning Department, *Parkmerced Project Final EIR*, November 18, 2010, https://sfplanning.org/project/parkmerced#info, accessed October 2, 2022.

Route 122. Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3 are identified to address the transit delay impact. However, the effectiveness of these mitigation measures cannot be guaranteed and, therefore, the draft EIR conservatively identifies the impact as significant and unavoidable. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated cumulative transit delay analysis related to the revised variant is provided in Chapter 2 of this RTC. Cumulative transit delay for Muni 57 Parkmerced, 28/28R combined, and SamTrans Route 122 under the revised variant would be slightly less than the proposed project or the draft EIR variant but would remain significant and unavoidable with mitigation.

Further transit coordination and infill development opportunities mentioned by commenters, such as rerouting transit lines and converting existing land use to high-density urban plaza, aims to address transit and land use challenges beyond the scope of the environmental impact analysis of a single project. The discussion about infrastructure project prioritization and citywide equitable investment also exceeds the scope of impacts of the proposed project. As mentioned in this response above, mitigation measures in an EIR must be "roughly proportional" to the impacts of the project. The changes proposed by the commenters are noted but are beyond the purview of this draft EIR and not required to be addressed under CEQA. Note that the department consulted with the SFMTA, SamTrans, and Caltrans on the draft EIR.

4.E.4 Comment TR-4: Transportation Analysis Methodology

This response addresses the following comments, which are quoted below:

I-Boken-4

I-Full-4

I-Full-16

I-Full-19

I-Full-22

I-Hardeman-7

I-Herlihy1-1

I-LG-1

O-ITHA-1

O-WTPCC-1

"the issue of limited evacuation routes from the site should be investigated;" *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-4, TR-4])*

"Page 2-23, Figure 2-13. This figure shows a traffic signal at the intersection of Eucalyptus Drive and 20th Avenue. Was a traffic signal warrant study conducted for this intersection to determine that a traffic signal is needed? Where is the result of that study in the EIR? Also, the intersection of Buckingham Way and Winston Drive is proposed to continue to be a stop-sign-controlled intersection. Given that the traffic volumes at this

intersection are similar (as presented in Appendix D.1), why does this intersection not need a traffic signal?" *(Dave Full, Letter, 2/12/2023 [I-Full-4, TR-4])*

"Page 3.B-1, Section 3.B.2, paragraph 2. The statement that there is an 'unlikelihood of the project or variant to result in significant transportation and circulation impacts in those areas' is not supported by any evidence. This statement is arbitrary and baseless without any information to back it up.

Page 3.B-2, Figure 3.B-1. Why were the intersections of 20th Avenue and Ocean Avenue and 20th Avenue and Sloat Boulevard not included as a study intersection. The EIR indicates that 20th Avenue and Eucalyptus Drive is a 'secondary access' to the project site yet the intersections immediately north of this 'secondary access' are not included as study intersections and other intersections much farther removed from the project site included (e.g., Ocean Avenue and Ashton Avenue). This is a major flaw in the approach to analyzing traffic impacts." *(Dave Full, Letter, 2/12/2023 [I-Full-16, TR-4])*

"Page 3.B-30, paragraph 4. The text indicates that a Sunday peak period was chosen based on 'the size and type of land uses proposed by the project, as well as travel characteristics of the study area'. As a resident in the vicinity of Stonestown, Saturday traffic volumes in the neighborhood appear to be greater than that on Sunday. Unfortunately, the EIR does not provide any specific rationale for choosing Sunday over Saturday. A comparison of traffic volumes on those days should be provided.

Page 3.B-36, Table 3.B-11. The text on the preceding page does not provide any details as to how the percent reduction in vehicle trips due to internal trip capture was calculated. There is no information to verify the assumptions that were made for this internal trip capture. This information needs to be provided in the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-19, TR-4])*

"Page 3.B-59, paragraph 2. The EIR indicates that traffic queues on Eucalyptus Drive approaching 19th Avenue could extend back to 20th Avenue. However, there is no indication that any analysis was done to address vehicles that would choose NOT to turn right (eastbound) on Eucalyptus Drive from northbound 20th Avenue. Appendix D.1 indicates that the number of vehicles turning right would be 471 during the p.m. peak hour (or about 8 vehicles per minute). Given the traffic signal timing at the intersection of 19th Avenue and Eucalyptus Drive and the capacity of the roadway, this queue would occur for every traffic signal cycle. Thus, there is the potential for drivers to choose to travel northbound on 20th Avenue toward Ocean Avenue and Sloat Boulevard. No analysis of the ability for eastbound vehicles to queue at either 19th Avenue and Ocean Avenue or at 19th Avenue and Sloat Boulevard has been presented. Given the 20 percent in traffic volumes on 20th Avenue north of Eucalyptus Drive, this analysis should be presented in the EIR. In addition, this increase of 20 percent is on a neighborhood residential street. In accordance with the Better Streets Plan, a '*Neighborhood Residential streets are quieter residential streets with relatively low traffic volumes and speeds. Though they have low levels of activity relative to other street types, they plan a key role to support the social life of a neighborhood*.' An analysis of the impacts to this residential street need to be included in the EIR and mitigation measures to preserve the character of a neighborhood residential street need to be identified and provided." *(Dave Full, Letter, 2/12/2023 [I-Full-22, TR-4])*

"**3) THE TRAFFIC STUDY IS INADEQUATE**

Lowell high school has the largest enrollment of any school in the SFUSD, and is directly adjacent to the proposed tower. As indicated, each school day our neighborhood is inundated with over 3,500 students, primarily using Eucalyptus Ave (2,786 students at Lowell High School, 466 students at Lakeshore Elementary, and 306 students at St. Stephens). The vehicle traffic creates gridlock on Eucalyptus Ave from 22nd avenue to Middlefield Ave, and the streets running perpendicular to Eucalyptus, particularly 24th, 25th 26th, Inverness and Forest View Avenues. Yet, the traffic study not only downplayed the vehicle traffic, it also stopped at 25th Avenue. While the project itself ends parallel to 25th Ave, the effect of the project extends well to the west. The EIR does not adequately address the increased traffic in the area which as noted, is already at gridlock twice a day." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-7, TR-4])*

"1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-1, TR-4])*

- "Cumulative effect of multiple construction projects on traffic and mass transit (Chapter 3). The report only considers projects within a .5 mile radius, however, new residents of the large Balboa Reservoir project (1000+ units) can also be expected to patronize Stonestown and increase traffic congestion on Ocean Avenue and Holloway Avenue from City College to 19th Avenue." *(LG, Letter, 2/13/2023 [I-LG-1, TR-4])*

- "We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [O-ITHA-1, TR-4])*

- "We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA." *(Stephen Martin-Pinto, President, West of Twin Peaks Central Council, Letter, no date [O-WTPCC-1, TR-4])*

RESPONSE TR-4

The commenters opine on the adequacy of the transportation analysis methodology, including the geographic boundary used to select study intersections and the use of Sunday versus Saturday to evaluate peak weekend traffic conditions. Some comments seek clarification and additional analysis on various topics covered in the analysis, including adequacy of emergency evacuation routes, intersection signal warrants, and queue backups at intersections near the project site. Comments regarding studying and monitoring congestion and automobile delay are addressed in Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, p. 4-137. The details of these comments are included in the response below.

References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. Responses are organized as follows:

- Signalized Intersections
- Study Period
- Scope of the Analysis
- Trip Internalization Methodology
- Trip Diversion
- Emergency Evacuation Routes

SIGNALIZED INTERSECTIONS

A commenter requests that a traffic signal study be provided for the 20th Avenue/Eucalyptus Drive intersection, which is proposed to be signalized as part of the project or variant. The commenter also questions why Buckingham Way/Winston Drive is not proposed to be signalized as part of the proposed project or variant. In response to the comment, the study of whether a signal is warranted would either be within the purview of the project sponsor in coordination with SFMTA (if on public property) or the purview of the project sponsor and their design team if on private property. Therefore, the draft EIR transportation analysis evaluated the intersection layouts and traffic controls as defined by the project sponsor and proposes mitigation measures if the project results in significant impacts. At the Buckingham Way/Winston Drive intersection, the project or variant proposes to add signal control at the intersection, which is presented correctly on draft EIR p. 3.B-62. Figure 2-13 has been corrected, as described under Response PD-1, Project Description Comments/Questions, p. 4-5.

STUDY PERIOD

A commenter seeks clarification regarding the Sunday peak hour being chosen as a study period as opposed to the Saturday peak hour. The rationale, discussed on draft EIR p. 3.B-30 and on p. 4 in Appendix D.2, Transit Analysis Memorandum, cites the abundance of retail and church-related activity in and around the project site, which would occur on Sunday. The commenter does not provide supporting evidence why the Saturday peak hour should be used as opposed to Sunday peak hour. The analysis is not intended to represent every hour of every day but to represent the impacts that may occur at other time periods.

SCOPE OF THE ANALYSIS

The commenters seek additional traffic analysis as it relates to congestion and diversion of project traffic at the following locations:

- Adjacent neighborhoods, including Lakeside and Merced Manor
- Eucalyptus Avenue, west of the project site
- 19th Avenue connection to South I-280
- 20th Avenue/Ocean Avenue and 20th Avenue/Sloat Boulevard intersections
- Ocean Avenue/Cerritos Avenue and Junipero Serra Boulevard/Winston Drive intersections
- Ocean Avenue and Holloway Avenue from City College to 19th Avenue

The basis for selecting intersections is based on substantial evidence, including a series of conservative assumptions about the number of project-related vehicle trips and the potential to result in significant impacts (e.g., substantial transit delay, potentially hazardous conditions, accessibility), and the hourly distribution and routing of those trips. As documented in draft EIR Appendix D.1, Travel Demand Memorandum, and in the draft EIR on p. 3.B-37, the analysis assumes drivers would use available project entries and exits and take the most convenient route to their destinations. Given the variation in trip lengths, origins, and destinations, the draft EIR assumption that all drivers would take the same route from the project boundary is likely overly conservative. Additionally, travel demand is elastic with respect to congestion (the travel cost of time). In the event of increased congestion, some drivers would likely shift their departure and arrival times to avoid peak congestion, again implying that the draft EIR analysis is conservative with respect to the peak-hour condition. Thus, the analysis conducted in the draft EIR reflects representative worst-case transit delay impacts from project-generated traffic and expanding the transportation study area to include additional study intersections is not necessary.

Similarly, a commenter states that drivers making northbound right turns at 20th Avenue/Eucalyptus Drive to travel east might divert to 20th Avenue due to queue spillover, resulting in a 20 percent increase in traffic on 20th Avenue north of Eucalyptus Drive, and the draft EIR should incorporate the diversion in trip assignment and impact analysis, including further queuing analysis. The commenter correctly cites numbers used in the draft EIR analysis for northbound vehicles turning right (east) from 20th Avenue onto Eucalyptus Drive under existing plus project conditions. However, the commenter does not provide supporting evidence for the 20 percent increase described in the comment.

Table 3.B-2 of the draft EIR presents the vehicular counts at the 17 study intersections. The selection criteria used to identify study intersections are presented on draft EIR p. 3.B-1. The location of the 17 intersections is where the proposed project or variant could potentially significantly affect localized transportation and circulation. Vehicular counts were collected at the additional intersections and used for the operational analysis conducted to evaluate transit delay but were not presented as they are outside the transportation study area.

Although some diversion is possible, it is speculative to assume that 20 percent of northbound drivers would divert to 20th Avenue north of Eucalyptus Drive. No delay analysis was conducted on 20th Avenue north of the project site because that portion of the roadway does not serve any transit line, and thus, as detailed in Response GC-NON-CEQA-5, p. 4-137, the travel time delay is not relevant for CEQA analysis. The other

locations referenced by the commenters are farther from the project site. It is unlikely that all project-generated trips would take the same route at the same time of day and would be concentrated at any intersection from the project site. Therefore, the draft EIR concludes that the proposed project or variant would not add a significant number of trips to intersections outside the study area or create potentially hazardous conditions or significant accessibility impacts. Further queue-related diversion analysis is not necessary.

A comment questions the adequacy of the 0.5-mile radius used to evaluate cumulative traffic and transit impacts, as it may not consider large projects such as Balboa Reservoir. As discussed under Cumulative Conditions on draft EIR pp. 3.B-45 through 3.B-49, the analysis of cumulative conditions includes both (1) growth projected by the regional travel demand model (SF-CHAMP) and (2) active development projects and transportation network changes within a 0.5-mile radius of the project site. The SF-CHAMP projections appropriately account for traffic growth due to reasonably foreseeable future development, which includes the referenced Balboa Reservoir development project as well as other infrastructure and land use development projects anticipated to occur by the year 2050. Inputs to the SF CHAMP model are detailed on draft EIR p. 3.B-45.

A commenter (noted in Section 4.U.5) questioned the utility of providing "total entering vehicles." Table 3.B-2 on p. 3.B-5 shows "total entering vehicles" rather than traffic delay or congestion information. As noted in draft EIR pp. 3.B-3 through 3.B-5, "total entering vehicles" provides context, allowing for a comparison of the relative magnitude of traffic volume served at the study intersections. These multimodal turning movement counts were collected to inform the description of existing conditions and understand the volume of vehicles, pedestrians, and bicyclists within the study area. The vehicle turning movement counts were also used as an input to the transit impact analysis and the analysis in draft EIR Section 3.D, Air Quality and draft EIR Section 3.C, Noise and Vibration.

TRIP INTERNALIZATION METHODOLOGY

Some commenters opine on the trip generation methodology used in the draft EIR. The comments seek clarification on trip internalization methodology.

The internal trip capture methodology is presented on draft EIR p. 3.B-35. The assumptions are documented in draft EIR Appendix A of Appendix D.1, Travel Demand Memorandum, on pp. 37 through 38, which include:

- The daily trip capture estimates were calculated based on the assumption that the p.m. peak hour represents 9 percent of daily travel (i.e., dividing p.m. peak-hour numbers by 0.09 to achieve a daily estimate). The daily factor is based on the ratio of p.m. peak-hour person trips to daily person trips (4,998 weekday p.m. peak-hour person trips divided by 55,012 daily person trips).
- Internal Trip Capture rates are typically calibrated for weekday a.m. and p.m. peak-hour trips. The Sunday p.m. trip capture rate factors are determined by using the Sunday peak-hour trip estimates (adjusted weekday p.m. peak-hour trips).

Detailed internal trip capture calculations and a step-by-step approach are included in Appendix E of draft EIR Appendix D.1, Travel Demand Memorandum, on pp. 42 through 47.

EMERGENCY EVACUATION ROUTES

A commenter stated that the analysis should investigate evacuation routes. However, the draft EIR did provide relevant information and discussion. Figure 2-12 on draft EIR p. 2-22 shows the multiple ingress and egress routes serving the project site. Furthermore, as discussed under Impact TR-3 on draft EIR p. 3.B-64, prior to finalizing the design and dimensions of the internal street network and onsite pedestrian network, the project sponsor would coordinate the design details with the police and fire departments for review and approval, as required, to minimize the potential for impacts on emergency access, including evacuation routes, to the project site or adjacent locations.

4.E.5 Comment TR-5: Construction

This response addresses the following comments, which are quoted below:

I-Full-11

I-Full-20

"Page 2-42, Section 2.E.3. This section does not provide any information regarding a construction traffic plan. Will construction vehicles be restricted to certain streets? What guarantee is there that construction trucks will not use residential streets to access the project site? A construction traffic plan needs to be provided for that purpose." *(Dave Full, Letter, 2/12/2023 [I-Full-11, TR-5])*

"Page 3.B-55. Mitigation Measure M-TR-1. This mitigation measure needs to be expanded to require the construction coordination plan to designate routes to be used by construction vehicles accessing the project site. This plan needs to guarantee that construction truck traffic would not use residential streets in the vicinity of the project site." *(Dave Full, Letter, 2/12/2023 [I-Full-20, TR-7])*

RESPONSE TR-5

The commenters express concern regarding construction trucks using residential streets and states that a construction traffic plan should be provided.

As described below, the draft EIR has adequately analyzed and documented potential construction impacts under Impact TR-1.

As stated under Impact TR-1 in the draft EIR on pp. 3.B-49 to 3.B-56, prior to construction, as part of the construction permit process the project sponsor and construction contractor(s) would be required to meet with San Francisco Public Works and SFMTA staff to develop and review the construction plans for compliance with the blue book.[33] The project sponsor or contractor(s) would also be required to submit truck routing plans for review if deemed necessary by SFMTA. Construction-related traffic entering and leaving the project site would be required to comply with SFMTA street restrictions. The preliminary haul routes are discussed on p. 3.B-52, which includes I-280, Junipero Serra Boulevard, and 19th Avenue. With regard to residential streets in the vicinity of the project site, per San Francisco Street Restrictions Effective

[33] San Francisco Municipal Transportation Authority, Regulations for Working in San Francisco Streets, 8th Edition, January 2012, https://www.sfmta.com/sites/default/files/reports-and-documents/2020/06/blue_book_8th_edition_6-23-20.pdf, accessed October 2023.

December 2017,[34] vehicles that weigh three tons or more are prohibited on Everglade Drive between Eucalyptus Drive and Sloat Avenue with limited exemptions. Other streets within the project study area do not have restrictions on commercial or oversize vehicles.

In response to the comment, the fourth paragraph on draft EIR p. 3.B-52 was revised as follows:

> … Vehicles that weigh three tons or more are prohibited on Everglade Drive between Eucalyptus Drive and Sloat Avenue with limited exemptions. None of the other streets within the project study area ~~are~~ is restricted to commercial or oversize vehicles. …

4.E.6 Comment TR-6: Characterization of 20th Avenue

This response addresses the following comment, which is quoted below:

> I-Full-17
>
> ---
>
> "Page 3.B-4, Table 3.B-1. In this table, the Better Streets Plan Classification for 20th Avenue is listed as N/A. In a short search on-line, it is evident that 20th Avenue north of Eucalyptus Drive is a 'Neighborhood Residential' street. The EIR incorrectly considers 20th Avenue only as a street within the project site. This street also exists between Eucalyptus Drive and Sloat Boulevard and no effort has been made in the EIR to properly characterize this street. For example, this table indicates that MUNI route 57 travels on 20th Avenue. It does, but only as far north as Eucalyptus Drive. The EIR needs to make a distinction between the 20th Avenue on the project site and the 20th Avenue north of Eucalyptus Drive. This designation as a 'Neighborhood Residential' street is important when considering the impacts of the proposed project." *(Dave Full, Letter, 2/12/2023 [I-Full-17, TR-6])*
>
> ---

RESPONSE TR-6

The commenter opines on the characterization of 20th Avenue and seeks additional analysis of the portion north of Eucalyptus Drive, which is designated as a Neighborhood Residential Street. The draft EIR adequately analyzes 20th Avenue, and no additional analysis is required.

The following text revisions clarify the distinction between 20th Avenue north of Eucalyptus Drive and 20th Avenue south of Eucalyptus Drive but do not change any of the impact determinations in the draft EIR, nor do they require that any additional analysis be conducted.

[34] SFMTA, San Francisco Street Restrictions Effective December 2017. Available online at: https://www.sfmta.com/sites/default/files/pdf_map/2017/12/streetrestrictions.pdf. Accessed July 6, 2023.

In response to the comment, draft EIR Table 3.B-1 on p. 3.B-4 has been revised as follows:

Table 3.B-1 Roadway Facilities in the Study Area

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
19th Avenue	N-S	3[d]	Vision Zero Network	Residential Throughway	28, 29, M	N/A
~~20th Avenue~~	~~N-S~~	~~1~~	~~N/A~~	~~N/A~~	~~57~~	~~Class III~~
20th Avenue (North of Eucalyptus Drive)	N-S	1	N/A	Neighborhood Residential	N/A	Class III
20th Avenue (South of Eucalyptus Drive)	N-S	1	N/A	N/A	57	Class III
Buckingham Way (North and South)	E-W	1	N/A	Neighborhood Residential	N/A	Class III
Eucalyptus Drive	E-W	1	N/A	Neighborhood Residential	57	—
Font Boulevard	E-W	1	N/A	Boulevard	57	Class III
Holloway Avenue	E-W	1	N/A	Neighborhood Residential	29	Class II
Junipero Serra Boulevard	N-S	3	N/A	Residential Throughway	KT	N/A
Lake Merced Boulevard	N-S	3	Vision Zero Network	Park Edge	57, 58, 18, 29, 122	Class I
Mercedes Way	E-W	1	N/A	Neighborhood Residential	N/A	N/A
Middlefield Drive	N-S	1	N/A	N/A	N/A	N/A
Ocean Avenue	E-W	2	N/A	Residential Throughway/ Commercial Throughway	KT	Class III
Portola Drive	N-S	1	N/A	Residential Throughway	KT, M, 57	Class IV
Sloat Boulevard	E-W	3	N/A	Park Edge/Residential Throughway	18, 58	Class III/ class IV
Sunset Boulevard	N-S	2	Vision Zero Network	Parkway	29	Class I
Wawona Street	E-W	1	N/A	Park Edge/Paseo/ Neighborhood Residential	N/A	N/A
West Portal Avenue	N-S	3	N/A	Residential Throughway	KT, M, 57	N/A

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
Winston Drive	E-W	2	N/A	Neighborhood Residential/ Neighborhood Commercial	58, 122	Class III

SOURCES: *San Francisco General Plan*, 2017; San Francisco Vision Zero High Injury Network, 2017; *San Francisco Better Streets Plan*, 2010

ABBREVIATIONS:

E-W = east–west; N-S = north–south; N/A = value not applicable

NOTES:

The descriptions associated with each street (Vision Zero network, Better Streets Plan Classification, Transit Routes, etc.) are those that apply to some portion of the street near the project site and may not apply to the entire length of the street.

[a] Based on the 2017 Vision Zero Network. Obtained from the San Francisco Transportation Information Map, http://www.sfplanninggis.org/TIM/, accessed September 1, 2022.
[b] The transit routes are operated by Muni, except for the SamTrans Route 122 route.
[c] Bikeway class definitions are provided in the Bicycling Conditions discussion, beginning on p. 3.B-9.
[d] Three travel lanes in each travel direction, with a center-running Muni light-rail line for a portion.

4.F Noise and Vibration [NO]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.C, Noise and Vibration. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topics relate to:

- NO-1: Construction and Operational Noise
- NO-2: Noise Mitigation Measures
- NO-3: Construction Vibration Impacts

4.F.1 Comment NO-1: Construction and Operational Noise

This response addresses the following comments, which are quoted below:

I-Arbulu-1

I-Arbulu-4

I-Full-25

I-Full-26

I-Full-27

I-Herlihy1-4

I-Herzfeld-1

I-LBirsinger-1

I-Naraghi-4

I-Parthasarathy-5

"We reside in Merced Manor which is right across the street from Phase 1 of the project. We have just seen the plans for the parking lot near our home and are very concerned about the scope of the project and the construction noise that they estimate will take at least 4 years for Phase 1 alone, AND the noise and traffic that will be in our neighborhood forever." *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-1, NO-1])*

"Finally, the construction noise over a minimum of 4 years will be a terrible nuisance. Pile driving etc. Would YOU like to hear that from your home for 1/2 a decade? Of course not! So don't allow the developer to do that to us!" *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-4, NO-1])*

"Page 3.C-14, Construction Noise, paragraph 2. The text in this paragraph is not consistent with the information on Page 2-40, Section 2.E.1, paragraph 2, which states that construction could occur at any time. The EIR should identify when construction is to occur and to limit construction only to daytime hours.

Page 3.C-21, Daytime Construction Noise, paragraph 2 and Table 3.C-11 on page 3.C-22. The significance standard for construction noise impacts is 80 dBA at 100 feet. Stating that the use of the concrete saw is of 'limited duration' is misleading by trying to downplay the fact that it is significant. The 'limited duration' statement is irrelevant to the analysis. The concrete saw exceeds the 80 dBA at 100 feet and is, therefore, significant. Stating anything else or qualifying it should not be included in the EIR.

Page 3.C-25, Table 3.C-22. The heading of the sixth column in this table states 'Exceed 90 dBA Daytime Standard?' Where did this 90 dBA standard come from? The text on page 3.C-18 indicates that the threshold is 80 dBA. Which is correct? If it is 80 dBA, then many of the 'no' on this table need to be changed to 'yes'." *(Dave Full, Letter, 2/12/2023 [I-Full-25, NO-1])*

"Page 3.C-31, Mitigation Measure M-NO-1, paragraph 1. This is similar to the previous comment. Where did the 90 dBA standard come from? Why does the mitigation measure not require meeting the 80 dBA standard identified on page 3.C-18? This 90 dBA reference also is presented on page 3.C-32. *(Dave Full, Letter, 2/12/2023 [I-Full-26, NO1])*

"Page 3.C-33, Nighttime Construction, paragraph 4. The last sentence of this paragraph is meaningless. This states that some City employee can decide to grant permission to do nighttime construction at any time. This does not provide residents who may be affected by construction noise with any real remedy and actually creates greater uncertainty regarding the noise that will occur during construction. Given that construction is scheduled to occur over a seven-year period, it is not unreasonable to provide some better assurances as to when nighttime construction will occur. As written, there is no real mitigation associated with construction noise at nighttime hours. The EIR needs to address this issue.

Page 3.C-35, Impact NO-2. This analysis is inconsistent with other statements made in the EIR. The impact statement is related to an 'increase in ambient noise levels along access streets in the project vicinity'. Table 3.C-19 on the same page provides roadway noise levels associated with construction truck and worker traffic. The issue is that throughout the rest of the EIR, the intersection of 20th Avenue and Eucalyptus Drive is identified as a 'secondary access' to the project site. Yet, no analysis is provided for that access point. Unless there is a guarantee that this intersection will NOT be used for construction truck traffic or worker traffic, this analysis should be included. Or, a statement that this intersection will not be used needs to be included in the EIR. This is a major flaw of the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-27, NO-1])*

"4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-4, NO-1])*

"This plan is absurd. The impact on our neighborhood for noise construction parking cars and so many new redid we Mrs will not only negatively impact our quiet enjoyment of our homes but traffic and ability to transport from one part if the city to another." *(Debbie Herzfeld, Letter, 2/9/2023 [I-Herzfeld-1, NO-1])*

"**Section 3.c. Noise**

- Address how nearby residents can be assured that very early morning loud demolition/construction practices will not occur during the many phases of this project?
- Recent construction at Stonestown (tear down of Olive Garden and conversion to restaurant and bank) included frequent instances of very loud work between 2:00 and 6:00 am
- A point of contact is required should there be any such occurrences. This contact must be able to take action real time. (Relying on the police to control is not a viable solution.)." *(Laura Birsinger, Letter, 2/5/2023 [ILBirsinger1, NO1])*

"4) The construction and operational noise in the surrounding neighborhoods. Section 3.3" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-4, NO-1])*

"4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-5, NO-1])*

RESPONSE NO-1

The comments express concern about construction and traffic noise associated with the proposed project or variant, as well as construction-related vibration impacts. The comments also request clarification regarding noise impact thresholds, nighttime construction, construction truck routes, hours for daytime construction activities, and request a point of contact for complaints related to construction noise. The response below separately addresses construction and operational noise.

References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

CONSTRUCTION NOISE

Phase 1 is expected to take place over a 45-month span. Construction of the proposed project or variant is anticipated to occur between the hours of 7 a.m. and 8 p.m., five days a week. On p. 3.C-14, the draft EIR identifies that a nighttime construction permit would be required for any work that would take place between the hours of 8 p.m. and 7 a.m. Construction outside of those hours that generate over 5 dBA ambient noise levels at the nearest property line must apply for a nighttime construction permit from the City. Nighttime construction work (between 8 p.m. to 7 a.m.) would occur, as necessary, to avoid conflicts with the existing shopping mall loading dock operations, utilities connections and switchovers, and for concrete pours, which would require the granting of a special use permit by the city.

Early morning construction noise impacts (considered before 7 a.m. by the noise ordinance) are addressed on draft EIR pp. 3.C-33 and 3.C-34. As shown in Table 3.C-18, nighttime construction noise (8 p.m. to 7 a.m.) is projected to exceed 45 dBA at the closest residential receptors during phases 1, 2, 3, 4, and 6 of construction. These nighttime construction noise impacts are identified as significant and unavoidable with implementation of Mitigation Measure M-NO-1, Construction Noise Control. This mitigation measure (draft EIR pp. 3.C-31 to 3.C-32) contains specific measures to address potential nighttime construction noise impacts. These include notifying noise-sensitive receptors (e.g., residents) within 300 feet of project construction at least 30 days in advance of nighttime noise activities; posting a sign on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction; and requiring compliance noise monitoring during nighttime construction to determine the effectiveness of noise attenuation measures and, if necessary, implementing additional noise control measures. However, even with implementation of this mitigation measure, the nighttime construction noise impact is identified as significant and unavoidable.

With respect to the commenter's statement that a recent conversion project at the Stonestown Galleria resulted in very loud construction work in the early morning hours, the draft EIR analyzes all potential impacts resulting from construction noise with implementation of the proposed project and variant. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

Regarding specific construction methods, no impact or vibratory pile driving would be necessary for construction of the proposed project or variant. Foundations would be installed using drilled micro piles[35] as discussed on p. 2-42 of the draft EIR, which cause substantially less noise and vibration than impact pile driving. Therefore, pile-driving noise would not occur as part of project construction. In addition, concrete saws would be used for only approximately 4 workdays out of the entire 5-week-long period for demolition for each phase, which is a limited duration (approximately 10 percent) in the overall context of the demolition period for each phase. The use of concrete saws was analyzed as part of the overall construction noise of the project, and the results of that analysis were presented in Impact NO-1 of the draft EIR (pp. 3.C-21 to 3.C-34). Because concrete saws would be one of the noisiest pieces of equipment associated with demolition activities, their operation is included in the analysis of construction noise for all phases of construction, as shown in draft EIR Tables 3.C-12 through 3.C-17, pp. 3.C-25 through 3.C-30. The construction

[35] Micro piles are deep foundation elements constructed using high-strength, small-diameter steel casing and/or threaded bars.

noise impact is identified as significant and unavoidable even with implementation of Mitigation Measure M-NO-1, Construction Noise Control. Implementation of Mitigation Measure M-NO-1 would reduce the severity of the proposed project or variant's construction noise impacts on existing offsite sensitive receptors, including nearby residents. However, given the duration of construction activities and the increase in noise over existing ambient levels, the impact is identified as significant and unavoidable even with identified mitigation measures, as discussed on draft EIR pp. 3.C-32 and 3.C-33.

CONSTRUCTION NOISE CRITERIA

The daytime construction noise criterion is discussed in the methodology section on draft EIR p. 3.C-18. The tables cited by the commenter identify the daytime construction noise impacts using the 90 dBA daytime criterion assuming simultaneous operation of the two noisiest pieces of equipment, consistent with the general assessment methodology of the FTA. Therefore, these tables include an assessment of the potential to exceed the 90 dBA criteria for daytime construction operations. The 80 dBA threshold the commenter is referencing on p. 3.C-18 is related to noise ordinance section 2907(a), which establishes a noise-level limit of 80 dBA at 100 feet for *individual pieces of equipment*. Impacts associated with this noise ordinance provision are addressed in the second paragraph of draft EIR p. 3.C-21. The analysis includes construction noise levels generated by the proposed project or variant at offsite sensitive uses (Table 3.C-12 through Table 3.C-17).

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The conversion of the midrise building on Block S3 to a tower would require three additional months of construction compared to the draft EIR variant. The updated construction noise analysis related to the revised variant is provided in Section 2.E.4, Noise and Vibration, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, construction noise impacts of the proposed project, draft EIR variant, or revised variant would be significant and unavoidable with mitigation.

OPERATIONAL NOISE

With respect to the commenter's concern regarding operational traffic noise, noise impacts from project-generated traffic are addressed on draft EIR pp. 3.C-43 and 3.C-44. As discussed in the analysis, increases in noise due to project-generated traffic along the 30 roadway segments analyzed in the draft EIR would be less than the applicable significance threshold (5 dBA increase or a 3 dBA increase, depending on the existing conditions). Therefore, noise impacts related to project-generated traffic with implementation of the proposed project or variant are identified as less than significant. See Response GC-NON-CEQA-5, p. 4-137, regarding increases in traffic associated with the proposed project or variant.

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated operational noise analysis related to the revised variant is provided in Section 2.E.4, Noise and Vibration, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, operational traffic noise of the proposed project, draft EIR variant, or revised variant would be less than significant.

4.F.2 Comment NO-2: Noise Mitigation Measures

This response addresses the following comments, which are quoted below:

I-Full-26

O-ITHA-2

O-WTPCC-2

"Page 3.C-31, Mitigation Measure M-NO-1, paragraph 2. Prohibiting nighttime noise should be considered as a way to reduce sleep disturbance for residents in the vicinity of the project site. In addition, can the mitigation measure have financial penalties for exceeding noise levels? There needs to be a real consequence associated with disruptive noise events." *(Dave Full, Letter, 2/12/2023 [I-Full-26, NO-2])*

"1. We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a nonprofit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [O-ITHA-2, NO-2])*

"1. We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a nonprofit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-2, NO-2])*

RESPONSE NO-2

The comments request clarification regarding establishing a financial penalty for exceeding noise levels, and limiting amplified performances to daytime only as part of Mitigation Measure M-NO-5, Noise Limits for Outdoor Amplified Sound.

FINANCIAL PENALTIES

Noise ordinance section 2908 prohibits nighttime construction (between 8 p.m. and 7 a.m.) that generates noise exceeding the ambient noise level by 5 dBA at the nearest property line unless a special permit has been issued by the City. The noise ordinance allows for certain construction activities, like concrete pours or utility installation, to take place at night due to the operational needs for those types of activities that would make it technically infeasible to occur during daytime hours. For example, a concrete pour would need to take place at night to avoid potential conflicts with daytime shopping mall loading dock operations. As noted, the nighttime noise permit would be required for work during the hours of 8 p.m. to 7 a.m. that would

exceed the 45 dBA standard by more than 5 dBA. The permit would allow the applicant to exceed the 45 dBA levels. Penalties cannot be imposed if the project sponsor is conducting work that is allowed by the nighttime construction permit. In addition, a financial penalty is beyond the scope of CEQA and mitigation measures, as mitigation measures are aimed at avoiding or minimizing impacts, and a financial penalty would not reduce noise levels from construction activities.

AMPLIFIED NOISE

Mitigation Measure M-NO-5 on draft EIR p. 3.C-42 restricts amplified sound equipment use to the hours between 9 a.m. and 10 p.m., unless an amplified sound permit is received from the Entertainment Commission that would outline a different operation window, in compliance with existing regulations. The draft EIR analyzes potential impacts from amplified noise and covers all types of performance that may occur, including daytime community performances managed by a nonprofit as proposed by the project sponsor. As there is no specific programming proposed, any additional analysis or mitigation measures would be speculative and beyond the scope of CEQA.

4.F.3 Comment NO-3: Construction Vibration Impacts

This response addresses the following comments, which are quoted below:

I-Kashi-1

I-LBirsinger-2

"I reviewed the attached comments and like to add that the Stonestown project must include pre-construction survey, vibration monitoring devices, and noise monitoring stations in the Lakeside neighborhood. This responsibility must be shared by the designer, the owner, and the contractor.

The recent development by SFSU shook the ground severely and continuously for about three months. This happened during the demolition and caused damage to my house and the neighborhood. We have cracks throughout the house inside and outside and more than half of our windows do not open. I went through these damages with the SFSU staff, contractor, and their insurance companies. I asked SFSU staff to install vibration monitoring devices in the neighborhood for the entire duration but that was ignored.

I have a claim for $250k to repair the walls and cracks and replace a few windows. Like most claims SFSU, the general contractor, subcontractor, and their insurance companies are dragging their feet. Last I heard was that they were trying to decide if they were actually responsible.

The homes in Lakeside neighborhood were built in the early 30's. Walls were made with lath and plaster with canvas cover and a coat of paint over it. This system of construction is vulnerable to continuous vibrations. Vibrations delaminate the canvas and the plaster from the lath.

Do not make the same mistake. Take proactive action and hire structural engineers and architects and install monitoring devices. Broaden your perspective and consider the history in the neighborhood. This entire neighborhood was built on densely compacted dry sand that was imported from West Portal tunnel.

There is a muni wall at 19th Avenue and Wyton Lane. This wall has been cracked for many decades. The vibrations from SFSU demolition made this wall fail. Although this is not entirely the fault of SFSU team but

keep in mind that deferred maintenance and lack of attention by the City has made public infrastructures vulnerable. This burdens Stonestown Development with additional responsibilities." *(Kevin Kashi, Letter, 2/8/2023 [I-Kashi-1, NO-3])*

"**Section 3.c. Vibration**

- Address how nearby residents (plus churches and schools) can be assured that vibrations resulting from extensive construction don't damage the integrity of their structures? (Of particular concern is the potential damage resulting from the anchoring taller buildings may require, such as the possible hotel.)
- A point of contact must be provided to deal promptly with any structural issues which occur.
- Note that residents on Denslowe Drive reported cracks in their walls and other structural damage most likely caused by the recent SFSU major building project, so this concern is valid." *(Laura Birsinger, Letter, 2/5/2023 [ILBirsinger2, NO3])*

RESPONSE NO-3

The comments express concerns regarding construction-related vibration impacts on nearby structures. The draft EIR analyzed construction-related vibration impacts under Impact NO-3 on pp. 3.C-36 through 3.C-37. The standards and methodology are provided on draft EIR pp. 3.C-11 to 3.C-13 and pp. 3.C-18 to 3.C-19 and are based on the California Department of Transportation and Federal Transit Administration guidance. Table 3.C-8, Vibration Guidelines for Potential Damage to Structures, on draft EIR p 3.C-13 identifies the vibration level at which different structure types (i.e., from "extremely fragile historic buildings, ruins, ancient monuments" to "modern industrial/commercial buildings") would be subject to potential damage. As noted on draft EIR p. 3.C-36, construction equipment such as bulldozers and vibratory rollers could generate groundborne vibration. As shown in Table 3.C-20 on draft EIR p. 3.C-37, and under the proposed project, the greatest vibration level would be 0.2 PPV from the operation of a vibratory roller at a distance of 25 feet from the Authentic Church building. This vibration level would be below the 0.3 PPV threshold for an older structure. Other vibration levels at the other buildings within 90 feet of the project site would range between 0.013 and 0.064 PPV, which would be well below the 0.3 PPV threshold for older structures and the 0.25 PPV threshold for historic structures as stated on draft EIR p. 3.C-36. As such, and as concluded in the draft EIR, impacts due to construction vibration would be less than significant and no mitigation measures are needed.

The structural damage concerns identified by commenters are not related to the to the proposed project or variant implementation, as they are potentially the result of other projects in the area. Under CEQA, the described conditions are considered part of existing conditions. The areas described in the comments (19th Avenue/Wyton Lane and Denslowe Drive) are approximately 360 to 500 feet from the project site. The neighborhood on the east side of 19th Avenue is over 125 feet from the project site. As described above and as shown in Table 3.C-20 on draft EIR p. 3.C-37, construction vibration levels would be less than significant within 25 feet of the potential construction areas. Therefore, the potential for construction-related vibration impacts with respect to building damage is identified as less than significant and no mitigation measures, including installing vibration monitors on buildings, are required. Mitigation Measure M-NO-1 would require the project sponsor to have a complaint hotline number.

This determination is based on project-specific equipment and substantial evidence with respect to building damage

4.G Air Quality [AQ]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.D, Air Quality. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topic relates to:

- AQ-1: Air Quality Analysis

4.G.1 Comment AQ-1: Air Quality Analysis

This response addresses the following comments, which are quoted below:

I-Chang-4

I-Full-10

I-Full-28

I-Herlihy1-5

I-LG-6

I-Naraghi-5

I-Parthasarathy-6

I-Pilpel-8

I-Pilpel-11

O-SFSU-8

"(4) The air quality will get worsened with the proposed apartment and hotel construction." *(Mary Chang, Letter, 2/7/2023 [I-Chang-4, PS-1])*

"Page 2-42, Section 2.E.2. This section does not describe where excavated materials will be transported. Does the air quality analysis include the emissions associated with the use of trucks to transport this material? Without a destination of where excavated materials will be transported, how can the air quality analysis be considered complete?" *(Dave Full, Letter, 2/12/2023 [I-Full-10, AQ-1])*

"Page 3.D-13, paragraph 2. This paragraph identifies the 'sensitive receptors' near the project site. Why were the residential land uses west of the project site (i.e., the multi-story buildings along Buckingham Way and Winston Drive) not included? These are directly adjacent to the project site and should be considered 'sensitive receptors'. The analysis should be revised to include these land uses as 'sensitive receptors'.

Page 3.D-13, paragraph 3. The last sentence of this paragraph indicates that 'a small portion of the project site that borders 19th Avenue does meet the APEZ criteria' but does not actually indicate where this small portion is actually located. Figure 3D.-1 on page 3.D-14 does not provide any information in this regard.

Page 3.D-14, Figure 3.D-1. Why is this land use map so different from the one presented in Figure 2-2 on page 2-5? There are literally dozens of differences between these two land use maps and leads the reader to wonder which is correct. This lack of consistency in the EIR is most troubling because it is not possible to clearly understand the analysis when basic information is not reliable.

Page 3.D-14, Figure 3.D-1. Although this land use map actually acknowledges commercial uses along Ocean Avenue (compare with Figure 2-2 on page 2-5), there are still a variety of land uses that are not correct on this figure. For example, what is the 'commercial' land use on 21st Avenue? What is meant by the 'residential-mixed use' designation? This is not explained in the EIR. I, for one, can assure you that my residence on 20th Avenue, which is designated as 'residential-mixed use' on Figure 3.D-1 is a single-family home with no other land uses associated with it. Given the number of such parcels identified on this figure as 'residential-mixed use' within residential neighborhoods, it undermines any confidence that the preparers of the EIR did their due diligence in preparing the document." *(Dave Full, Letter, 2/12/2023 [I-Full-28, AQ-1])*

"5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-5, AQ-1])*

- "More detail about the risks of exposure to dust and toxic materials is needed. The Draft EIR seems to say that the anticipated risks of additional cancer cases and other morbidities are acceptable. However, considering the number of schools (pre-school through university) in the area, even a small increase would be tragic. (Appendix B. Section E. 17)." *(LG, Letter, 2/13/2023 [ILG6, AQ1])*

"5) The adverse effect of Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-5, AQ-1])*

"5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-6, AQ-1])*

"The Air Quality impacts are narrowed to include only construction impacts, which does not comply with CEQA." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-8, AQ-1])*

"11. I also found no coherent discussion or mitigation of how added traffic will affect long-term air quality. I found the air quality discussion to be mostly about construction air quality impacts." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-11, AQ-1])*

– "B) Please consider electric/battery generators, rather than gas-powered so as to reduce air pollution." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-8, AQ-1])*

RESPONSE AQ-1

Some comments relate to the adequacy of the draft EIR's analysis of air quality impacts during construction and operation of the proposed project or variant, while other comments provide a general statement of the air quality impacts that are disclosed in the draft EIR. The comments express concern about the proposed project or variant's air quality impacts, request additional detail of localized air quality impacts on nearby sensitive receptors from both construction and operational activities, provide comment on the figures in the draft EIR and on the mitigation measures.

Other comments express general concerns regarding wind and glare impacts. The draft EIR evaluates the wind impacts of the proposed project or variant in Section 3.E, Wind. Glare is addressed in Section E.14, Biological Resources, in draft EIR Appendix B. As noted on initial study p. 71, the proposed project or variant is subject to building standards, which limit glazing and lighting of the building.

This response is organized as follows:

- Air Quality Impacts
- Mobile Source Emissions
- Sensitive Receptors
- Air Quality Section Figure
- Air Quality Mitigation Measures

AIR QUALITY IMPACTS

One commenter states that the air quality impacts only address construction impacts. This is incorrect. The draft EIR does evaluate the air quality impacts of all phases of the proposed project or variant from construction through full build out of project operations. Draft EIR pp. 3.D-28 through 3.D-30 describes the methods used to model operational air quality impacts. Impact AQ-1 analyzes construction criteria air pollutant impacts in addition to operational emissions that would begin to occur as the proposed project or variant is constructed and portions of the project become operational. Starting in the fifth year of construction, portions of the site would become operational resulting in criteria air pollutants from both construction and operations (see draft EIR pp. 3.D-36 through 3.D-52). Impact AQ-2 then analyzes full build out operational criteria air pollutant emissions (draft EIR pp. 3.D-52 through 3.D-59), and Impact AQ-3 analyzes health risk impacts associated with TAC emissions from both construction and operation (draft EIR pp. 3.D-60 through 3.D-72).

Comments state that air quality will worsen with implementation of the proposed project or variant, and that any increase in human health risk, even if small, "would be tragic." The draft EIR does acknowledge that the proposed project or variant would affect air quality. The analysis under Impacts AQ-1 and AQ-2 on draft EIR pp. 3.D-36 through 3.D-59 identifies significant and unavoidable impacts from the proposed project or variant associated with construction and operational criteria pollutant emissions. Impact AQ-3 on draft EIR pp. 3.D-60 through 3.D-72 finds that the proposed project or variant would result in a significant health risk impact, but that this impact would be mitigated to a less-than-significant level with implementation of mitigation measures. Consequently, the draft EIR identifies air quality impacts from both construction activities and operations, and includes mitigation measures to reduce these impacts.

Impact AQ-3 finds that without mitigation, the health risk impacts associated with the proposed project or variant's TAC emissions during construction and operation would be significant (see draft EIR Table 3.D-15, p. 3.D-63 and Table 3.D-16, p. 3.D-64). With implementation of Mitigation Measures M-AQ-1a, M-AQ-1c, M-AQ-1e, M-AQ-1g, M-AQ-1h, M-AQ-1i, and M-TR-4a, all health risk impacts would be reduced to less-than-significant levels (see draft EIR Table 3.D-17, p. 3.D-68 and Table 3.D-18, p. 3.D-69). Comment I-LG-6 states that the draft EIR determined that these health risks are "acceptable." The draft EIR evaluates the proposed project and variant's health risk impacts against the City's thresholds of significance to determine whether the impacts would exceed the thresholds and would therefore be significant. This approach is consistent with CEQA Guidelines sections 15064and 15064.7. As defined in CEQA Guidelines section 15064(a), a "threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." Thresholds of significance "may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant" (CEQA Guidelines section 15064.7(c)). The thresholds of significance related to human health risk are discussed on draft EIR pp. 3.D-30 through 3.D-33. The draft EIR does not make any statement about acceptability of risk, but only discloses whether the risk values exceed the City's significance thresholds.

One comment requests additional detail regarding the health risks of exposure to dust and toxic air contaminants (TACs). Concerns regarding exposure to dust during construction are addressed under Impact AQ-1. Because the proposed project would be required to comply with the Construction Dust Control Ordinance, which requires implementation of a site-specific dust control plan that would include measures that effectively control dust during construction, the draft EIR determined construction dust impacts would be less than significant. Concerns regarding exposure to hazardous materials are addressed in Response HZ-1, p. 4-113.

MOBILE SOURCE EMISSIONS

One comment claims that the analysis does not consider the use of trucks to transport excavated materials. Draft EIR p. 3.D-27 discusses the modeling methods used to estimate criteria pollutant and TAC emissions associated with on-road construction trucks, including haul trucks exporting excavated material. Draft EIR Appendix F, Air Quality and Health Risk Assessment Results, presents the detailed modeling methods for this analysis (see draft EIR Appendix F, specifically Section 4.1.1, p. 5/19 and Section 4.1.2, p. 6/19). Draft EIR Appendix F Table 5 presents the assumptions used to model emissions associated with on-road construction vehicles, including haul trucks. As noted, heavy-duty haul trucks operating during the Grading, Shoring, and Excavating subphase would travel 28 miles per one-way trip. The 28-mile hauling trip length was provided by

the project sponsor, which reasonably assumed that all trucks would travel south down 19th Avenue, to the Bay Bridge or the San Mateo Bridge, and to San Leandro. The project sponsor obtained this information from its contractor, who has extensive experience and expertise in this area. The air dispersion modeling only models the route within 1,000 feet of the local receptors because TAC emissions typically decrease substantially or can even be indistinguishable from upwind background concentrations beyond approximately 1,000 feet from sensitive receptors (see draft EIR p. 3.D-83).[36] However, the entire truck trip length is modeled for the regional criteria air pollutant emissions analysis.

In response to a comment, the draft EIR does evaluate the operational air quality impacts from on-road mobile sources (i.e., traffic). Draft EIR pp. 3.D-28 through 3.D-29 discusses the methods used to evaluate operational on-road mobile sources. Impacts AQ-1, AQ-2, and AQ-3 evaluate the air quality impacts of proposed project and variant operations, which include mobile sources. For example, draft EIR Table 3.D-10 and Table 3.D-11 on pp. 3.D-53 and 3.D-54 show unmitigated criteria pollutant emissions for the category *Mobile*, which represents on-road vehicles added by the proposed project and variant, respectively. In addition, draft EIR Appendix F, Air Quality and Health Risk Assessment Results, presents detailed modeling methods and air quality analysis results associated with mobile sources (see Appendix Section 4.2.1, p. 8/19 and Section 4.5, p. 12/19). Health impacts from traffic are explicitly shown in Tables 40 through 45 of draft EIR Appendix F.

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The revised variant would increase the development on Block NW2 by approximately 12,700 square feet (76 residential units) and require additional excavation for 84 parking spaces in Block NW1. The additional development and excavation at Blocks NW1 and NW2 would be taken from Phases 2 and 3 and would not change construction durations. The conversion of the midrise building on Block S3 to a tower would require three additional months of construction compared to the draft EIR variant. The updated criterial air pollutant analysis related to the revised variant is provided in Section 2.E.3, Air Quality, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, construction and interim-year combined construction-related and operational emissions would be significant and unavoidable with mitigation, and would not result in any new of more severe impacts than those identified for the draft EIR variant.

SENSITIVE RECEPTORS

One comment expresses concern that certain sensitive receptors west of the project site were not included in the health risk assessment (HRA) and that the draft EIR does not adequately disclose receptor locations that meet the Air Pollution Exposure Zone (APEZ) criteria. In response to this comment, the residential land uses west of the project site, including SFSU apartment buildings along Buckingham Way and Winston Drive, are included in the air quality analysis. Figure 3.D-1 on draft EIR p. 3.D-14 shows all the modeled sensitive receptor locations. The areas shown in light yellow are classified as a residential sensitive receptor in the health risk assessment. This includes all residential locations to the west of the project site. As noted on draft EIR p. 3.D-60, all sensitive receptors within 1,000 meters of the project site have been evaluated in the health risk assessment. The 1,000-meter distance is discussed on draft EIR p. 3.D-35 and above on p. 4-56.

[36] Bay Area Air Quality Management District, California Environmental Quality Act Air Quality Guidelines Appendix A: Thresholds of Significance Justification, April 2023, p. A-37, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-a-thresholds-of-significance-justification_final-pdf.pdf?la=en, accessed September 20, 2023.

Several comments state that the air quality of the surrounding neighborhoods of Lakeside and 19th Avenue would be impacted. The draft EIR analyzes air quality impacts on the surrounding neighborhoods of Lakeside and 19th Avenue. Impacts are assessed under Impact AQ-3. As discussed above, all sensitive receptors within 1,000 meters of the project site have been evaluated in the health risk assessment, as presented in Figure 3.D-1 on draft EIR p. 3.D-14.

AIR QUALITY SECTION FIGURE

One comment identifies inconsistencies in land use types between Figure 3.D-1 on draft EIR p. 3.D-14 and Figure 2-2 on draft EIR p. 2-5. In response to the comment regarding the location of the APEZ, the commenter is correct that neither the draft EIR text nor Figure 3.D-1 on draft EIR p. 3.D-14 indicate the specific location of receptors that meet the APEZ criteria, only that a small portion of the project site that borders 19th Avenue does meet the APEZ criteria. To respond to this, Figure 3.D-1 was been revised to show the locations of the receptors that do not meet the APEZ criteria, which are located at the northeast portion of the site.

Regarding the differences between Figure 2-2 on draft EIR p. 2-5 and Figure 3.D-1 on draft EIR p. 3.D-14, the commenter does not identify any specific differences. The commenter could be referring to institutional land uses, which are different on the two figures. Figure 2-2 on draft EIR p. 2-5 shows the SFSU student housing as institutional; Figure 3.D-1 on draft EIR p. 3.D-14 shows the SFSU student housing as residential. This is because for the purposes of the health risk assessment, all SFSU student housing is conservatively considered residential. As explained in Response PD-1, p. 4-5, Figure 2-2 is intended to be a high-level general land use map indicating primary uses in the area and does not necessarily correspond to the detailed zoning district designations. However, Figure 2-2 on draft EIR p. 2-5 has been updated to respond to the commenter and is provided on p. 5-31 of this RTC document. In response to a comment regarding potential errors in Figure 3.D-1 on draft EIR p. 3.D-14, the commercial land use classification for the parcel on 21st Avenue near Sloat Boulevard is in fact a single-family residence. Figure 3.D-1 was corrected to show this as a residential land use type. Figure 3.D-1 has also been revised to separate “Residential” and “Mixed Use” designations. The Mixed Use designation refers to parcels that may include both residential and retail/commercial land use types. This does not affect the analysis, as these mixed-use receptors were conservatively analyzed as residential. **Revised Figure 3.D-1** is provided on p. 5-49.

AIR QUALITY MITIGATION MEASURES

One comment expresses concern that the draft EIR does not evaluate traffic-related air quality impacts and associated mitigation. Another comment requests that the City consider the use of electric or battery-powered backup emergency generators instead of diesel-fueled generators to reduce air quality impacts.

The draft EIR identifies mitigation measures to reduce the air quality impacts caused by proposed project or variant traffic. Mitigation Measure M-AQ-1g, Operational Truck Emissions Reduction, requires the project sponsor to incorporate specific project design features to reduce ROG emissions associated with operational trucks, along with the potential health risk caused by exposure to toxic air contaminants. Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure, requires the project sponsor to comply with the 2022 California Green Building Standards (CALGreen Code) Tier 2 voluntary electric vehicle (EV) charging requirements or the mandatory requirements of the most recently adopted version of the City building code, whichever is more stringent. The presence of EV charging stations would encourage residents to purchase and use battery electric and plug-in hybrid electric vehicles, which would eliminate tailpipe criteria pollutant

and TAC emissions from these vehicles.[37] Finally, Mitigation Measure M-TR-4a, Reduce Project Vehicle Trips, would reduce criteria pollutant and TAC emissions associated with operational traffic (see draft EIR Section 3.B, Transportation and Circulation, Impact TR-4 on pp. 3.B-65 through 3.B-70) by reducing overall proposed project or variant single-occupancy vehicle trips and VMT through measures that encourage transit and other modes of travel, such as bicycling, walking, and ride-sharing.

In response to one of the comments, Mitigation Measure M AQ 1e, Best Available Emissions Controls for Stationary Emergency Generators, requires that as non-diesel-fueled emergency generator technology becomes readily available and cost effective in the future (subject to the fire department), non-diesel-fueled generators shall be installed in new buildings. These could include electric and battery generators. However, an electric generator would not serve the purpose of providing power in the event of an electric power outage. A battery-powered generator would also have a limited power-generating duration. Diesel fuel is a more reliable fuel source for a generator that is meant to provide an emergency source of power. After implementation of all identified mitigation measures, criteria pollutant impacts are identified as significant and unavoidable for ROG emissions (draft EIR Table 3.D-13, p. 3.D-58). However, diesel generators represent only 0.5 percent of total operational ROG emissions (0.38 pounds per day for generators compared to 83 pounds per day total for all operations, as reported in draft EIR Appendix F, Table 35a). Therefore, non-diesel generators would not reduce the criteria air pollutant impact to less-than-significant levels. In addition, health risk impacts would be reduced to less-than-significant levels with implementation of all identified mitigation measures (Impact AQ-3, pp. 3.D-60 to 3.D-72). Therefore, additional mitigation to reduce generator TAC emissions is not required.

The revised variant would require an additional diesel generator as a result of the increased height of the building at Block S3. The updated criterial air pollutant analysis related to the revised variant is provided in Section 2.E.3, Air Quality, of this RTC. As concluded in the draft EIR and Chapter 2 of this RTC, construction and interim-year combined construction-related and operational emissions would be significant and unavoidable with mitigation, and would not result in any new of more severe impacts than those identified for the draft EIR variant.

4.H Shadow [SH]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.F, Shadow. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topic relates to:

- SH-1: Shadow Impacts

[37] California Energy Commission and National Renewable Energy Laboratory, *Quantifying the Tangible Value of Public Electric Vehicle Charging Infrastructure*, July 2020, https://www.nrel.gov/docs/fy21osti/70340.pdf, accessed September 20, 2023.

4.H.1 Comment SH-1: Shadow Impacts

This response addresses the following comments, which are quoted below:

I-DeBaun-4

I-Hardeman-2

I-Herlihy1-3

I-Lifur-1

I-Moore-3

I-Naraghi-3

I-Parthasarathy-4

I-Troxel-2

"3. Section 3.6: there are multiple schools in the area that will be impacted by shadows/loss of sunlight." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-4, SH-1])*

"* A small neighborhood park, Rolph Nicol is used daily by people in the neighborhood to walk their dogs, congregate, chat, and to enjoy a respite from the 3,500 students and their vehicles that inundate the neighborhood daily to attend school (see below). A tower situated immediately adjacent to the park, rising above the tree line, would permanently alter this sanctuary forever. The EIR acknowledges that the building would create shadows on the park" *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-2, SH-1])*

"3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-3, SH-1])*

"As a daily user of the Rolph Nicol Jr. park, I strongly object to the misleading and false conclusion stated in the draft Stonestown Development Project EIR that the increased shading of Rolph Nicol Jr. park would be 'less than significant' and 'would not be expected to substantially affect people's enjoyment of the park'. As a daily user of the park, the additional shading which will cast significant additional shading throughout most of the day including before 11 am and after 3 pm when I and many others in the Merced Manor neighborhood use the park will significantly adversely impact enjoyment of the park. Furthermore, the nature of shading of ninety feet tall buildings (NW1, NW2, NW3 and W1) is significantly different from the filtered light through the existing eucalyptus trees. No light passes through a building. The language in the EIR needs to reflect the actual impact on residents who use the park and not dismiss the impact as 'not substantial' which is simply not true. The sunlight in the colder morning and late afternoon hours, especially during the winter months is even more critical to the enjoyment of the park and this is completely disregarded by the draft report. The fact that the proposed buildings will block the southern exposure to light (up to 74% of the light at its peak in the early morning according to the report) will absolutely have a detrimental impact on the park and those of

us who use it. The proposed development, instead of ruining the park should add green space directly along the entire border of the park back for a distance of at least 2.5 times the height of the nearest building (i.e. at least 225 feet from the edge of the park in the case of 90-foot high buildings) to ensure natural light is not blocked at any time of the year." *(Jeff Lifur, Letter, 2/12/2023 [I-Lifur-1, SH-1])*

"Apart from the esthetics, these buildings would create permanent shadows during certain times of the day over dozens of homes on the first two streets in Lakeside to the east of 19th Avenue. (see map, Appendix H, page 14) While the report analyzes the impact of the shadows on the Junipero Serra Playground (which is enclosed by Lakeside), the permanent impact on the homes affected by the shadows created by the proposed buildings along 19th Avenue is not discussed." *(Andrew Moore, Letter, no date [I-Moore-3, SH-1])*

"3) Causing potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St. Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres). Section 3.6" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-3, SH-1])*

"3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres). Section 3.6" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-4, SH-1])*

"The Park is not only used by the adjacent neighborhoods of Merced Manor and Lakeshore Acres, but also by students and family of students attending Lowell High School, Lakeshore Elementary School, St. Stephens School and other neighborhood schools, families that visit or live near Stonestown and many others. Eight story buildings looming over the Park to its south will impact the light and sun that the Park receives and generally change its atmosphere. The weather in this neighborhood is often foggy and colder than other parts of San Francisco, so restricting the current light and sun that the Park receives will have an even more adverse impact on the Park." *(Suzanne Troxel, Letter, 2/11/2023 [I-Troxel-2, SH-1])*

RESPONSE SH-1

The comments address the draft EIR's analysis of shadow that would be cast by the proposed project or variant. One comment disputes the draft EIR's conclusion that "increased shading of Rolph Nicol Jr. park would be 'less than significant' and 'would not be expected to substantially affect people's enjoyment of the park.'" This comment states that the proposed project or variant "will cast significant additional shading throughout most of the day including before 11 a.m. and after 3 p.m. when I and many others in the Merced Manor neighborhood use the park will significantly adversely impact enjoyment of the park," and further states that shadow cast by proposed project or variant buildings would be different than the "filtered light" through the existing eucalyptus trees along the park's southern border. Other comments call attention to the shadow that that the proposed project or variant's eight-story buildings would cast on the park, altering light

and sun; another comment further states that the impact would be worsened by the neighborhood's often foggy and relatively colder weather. Several comments state that the draft EIR should address shadow impacts on nearby schools, churches, neighborhoods, and/or residences.

In regard to shadow that would be cast by the proposed project or variant on Rolph Nicol Jr. Playground, the draft EIR identifies shadow effects on this open space as less than significant because of the limited extent of shadow that would be cast by the proposed project or variant, in terms of both area covered and length of coverage, and because the shadow cast by the proposed project or variant would not fall on the park during times of heaviest use. In particular, shadow cast by the proposed project or variant on the children's play area would occur primarily in the early morning (before 9 a.m. most of the year), with a small amount of additional shadow between about 1 p.m. and 2 p.m. around the winter solstice. As can be seen in draft EIR Appendix H, Shadow Analysis Report, the children's playground would be mostly in sunlight even during this afternoon period. The draft EIR further finds that most of the large grassy area of the park would be unshaded between the hours of 11 a.m. and 3 p.m., when use of the park was observed to be at its highest. Although the draft EIR notes that the proposed project or variant would shade a maximum of nearly three-quarters of Rolph Nicol Playground in the early morning on the winter solstice, shadow coverage of the park would decrease to 61 percent by 9 a.m. to less than 35 percent by 10 a.m.; and, as noted on draft EIR p. 3.F-24, as revised herein, to 17.8 percent by noon. Moreover, as can be seen in draft EIR Figures 3.F-12 and 3.F-13, pp. 3.F-18 and 3.F-19, substantial portions of the park's grassy area would remain in sunshine throughout the morning. This means that a park user seeking sunshine would be able to find it in the grassy area of Rolph Nicol Jr. Playground even on the winter solstice, the day that would be most affected by shadow from the proposed project or variant. At other times of the year, shadow effects would be less pronounced. Accordingly, the draft EIR's conclusion, that "As a result of the limited extent of potential net new shadow that would be cast by the proposed project or variant, both in terms of area covered and length of time on any given day, and because the new shadow would not affect the park during times of heaviest use, new shadow would not be expected to substantially affect people's enjoyment of the park" (draft EIR p. 3.F-24), remains valid.

As presented in Chapter 2 of this RTC, the revised variant would include a larger building envelope for Block NW2. The updated shadow analysis related to the revised variant is provided in Section 2.E.6, Shadow, of this RTC. As explained there, the revised variant would cast somewhat more shadow on Rolph Nicol Jr. Playground than would the proposed project or draft EIR variant. Similar to the proposed project and the draft EIR variant, under the revised variant, the largest new area of shadow would occur at 8:19 a.m. on the winter solstice; however, the revised variant would shade just over 86 percent of the park at that time, 12 percent more than the proposed project or draft EIR variant. However, even with the revised variant, substantial portions of the park's grassy area would remain in sunshine throughout the morning even on the winter solstice, the day that would be most affected by shadow. At other times of the year, increased shadow would be less pronounced. As concluded in the draft EIR and Chapter 2 of this RTC, the revised variant would not result in any new or substantially more severe impacts than those identified for the draft EIR variant.

Concerning shadows on schools, churches, neighborhoods, and/or residences, as set forth on draft EIR p. 3.F-4, under Significance Criteria, the proposed project or variant would have a significant effect with respect to shadow if it would "[c]reate new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces." The City does not consider shadow on spaces other than publicly accessible open spaces to be subject to shadow impacts under CEQA; therefore, schools, churches, residences, and neighborhoods in general are not analyzed in the draft EIR. Nevertheless, draft EIR

Figures 3.F-2 through 3.F16, pp. 3.F-8 through 3.F-22, provide the reader with information as to where shadow from the proposed project or variant would be cast in relation to these spaces. No further response is required.

4.I Utilities and Service Systems [UT]

The comments and corresponding responses in this section cover the subjects included in draft EIR Section 3.G, Utilities and Service Systems. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant. The comment topics relate to:

- UT-1: Water Supply Analysis
- UT-2: Utilities Infrastructure
- UT-3: Increase in Trash Impacts

4.I.1 Comment UT-1: Water Supply Analysis

This response addresses the following comments, which are quoted below:

A-SFPUC-2

I-Boken-6

O-ITHA-3

O-SFSU-9

O-WTPCC-3

"Section 3.G.2, Environmental Setting, page 501 (3.G-1), paragraph 2. Edit paragraph to align with 2020 UWMP:

- Remove 'Hetch Hetchy' in first sentence
- Change to 26 wholesale customers instead of 27
- Revised last sentence as follows: 'Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, and recycled water, and non-potable water.'

Section 3.G.2, Environmental Setting, page 502 (3.G-2), paragraph 2. Last sentence of paragraph may be redundant since similar to next paragraph. Suggest removing. If not, revise as follows to align with 2020 UWMP: 'During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed.'

Section 3.G.2, Environmental Setting, page 502 (3.G-2), paragraph 3. Revise sentence as follows to align with WSA language: 'Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~ corresponding to water use reductions throughout the SFPUC's regional water system service area, including San Francisco.'

Section 3.G.2, Environmental Setting, page 503 (3.G-3), paragraph 1. At top of page, add following language before sentence that reads 'To date, those negotiations are ongoing': 'On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the State environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement.'

Section 3.G.2, Environmental Setting, page 503 (3.G-3), paragraph 3. Edit last sentence as follows: 'The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant and the 2020 plan~~.'

Section 3.G.3, Regulatory Framework, page 508 (3.G-8), paragraphs 4–5. Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a non-potable use as it is required.

Section 3.G.4, Impacts and Mitigation Measures, page 512 (3.G-12), paragraph 2. Discussion of the Non-potable Ordinance requirements differs from what is described on page 508 (3.G-8). These should be consistent with each other and should follow the language on page 508.

Section 3.G.4, Impacts and Mitigation Measures, page 512 (3.G-12), paragraphs 2–3. The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.

Section 3.G.4, Impacts and Mitigation Measures, page 513 (3.6-13), paragraph 5. The existing wording suggests that the regional treatment and distribution system is sized to meet the growing water demands, but that might be misleading. Revise sentence as follows: 'The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections, ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities.'

Section 3.G.4, Impacts and Mitigation Measures, page 514 (3.6-14), paragraph 3. Similar comment as above. The existing wording suggests that system capacity is sized based on the projected demands, but that is incorrect. Revise sentence as follows: 'The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water demand projections ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~, supplies for which would be accommodated by the existing regional water treatment and transmission facilities.'

Section 3.G.4, Impacts and Mitigation Measures, page 515 (3.G-15), paragraph 3. Under 'Operation', the description of how the project plans to comply with the Non-potable Ordinance should be consistent with how it's described above on page 508 (3.G-8). Currently the description is inconsistent.

Section 3.G.4, Impacts and Mitigation Measures, page 515 (3.G-15), paragraph 3. Same comment as above regarding difference in resident and employee estimates. The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.

Section 3.G.4, Impacts and Mitigation Measures, page 515 (3.G-15), paragraph 5. The Water Supply Assessment does not make any determination based on the potable portion of the project's demand estimate. The assessment is based on the total project demand. Revise sentences as follows: 'The water supply assessment determined that the ~~variant's potable water demand of 0.152 mgd would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045. The~~ variant's total water demand of 0.249 mgd, which does not account for the 0.097 mgd savings anticipated through compliance with the non-potable water ordinance, would represent 0.31 percent of 2045 total demand for the city.'" *(Monica Wu, SFPUC BEM Coordinator, Letter, 1/18/2023 [A-SFPUC-2, UT-1])*

"Besides catastrophic fires, the issue of the project's impact on drinking water has not been adequately addressed. This city has experienced water rationing, and a large project would have impacts on the water system even further.

It should be noted that the City has commissioned a report by USRS to identify sites for a desalination facility. The preferred site in the RS report is the Oceanside treatment facility not far from the project site." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-6, UT-1])*

- "We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA3, UT1])*

  - "C) The project considers water demand for landscape irrigation and cooling. Please assess whether there might be an opportunity to access recycled water via purple pipes from nearby sources. Extension of such infrastructure to the project site may benefit other projects as well." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-9, UT-1])*

- "We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-3, UT-1])*

RESPONSE UT-1

The comments relate to the draft EIR water supply and water distribution infrastructure impact discussions. Some comments suggest text revisions to the draft EIR's summary of water supply information. Other comments request further analysis regarding water supply or water supply infrastructure, or discuss other

water supply information. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

This response is organized as follows:

- Updated Water Demand Estimates
- Water Supply and Water Supply Infrastructure Impacts
- Recycled Water Availability

UPDATED WATER DEMAND ESTIMATES

A comment generally contains text revisions recommended by the SFPUC and states that the resident and employee estimates in Section E.2, Population and Housing, of the initial study (see draft EIR Appendix B) are not the same as the estimates used for the water supply assessment. Edits to the project description in response to the commenter are provided in Response PD-1, p. 4-6. The suggested text revisions have generally been accepted and are shown at the end of this response. None of the text revisions provide substantial new information or identify new significant impacts or a substantial increase in the severity of previously identified impacts in the draft EIR. Furthermore, the text changes do not include new feasible project alternatives or mitigation measures that are considerably different from those that were analyzed in the draft EIR.

In response to comments, the persons per household unit in the water demand calculator was updated to match the 2.36 persons per household used in initial study Section E.2, Population and Housing. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The City has updated the estimated project water demand based on these two changes (see Section 2.E.7, Utilities and Service Systems of this RTC). The updated water supply analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, in Chapter 2 of this RTC. The revised variant would have 775 employees, or about 483 fewer employees than the draft EIR variant using the employee generation numbers in initial study Table 1 on p. 14 (draft EIR Appendix B). The water demand calculator and Section E.2, Population and Housing, both use Leadership in Energy and Environmental Design (LEED) building and design construction default occupancy numbers for employees. However, the employee numbers are different between the water demand calculator and the population and housing section because the calculator also factors in employee occupancy rates from the 2019 California Plumbing Code and transient occupancy rates based on other studies to estimate full-time equivalents (FTEs) and transients (visitors, customers, or temporary users).[38] Visitors, customers, or temporary users are not considered in the population and housing analysis. The water demand calculator estimates 1,208 FTEs and 1,894 transients to estimate onsite demands for the proposed buildings. As such, the revised variant demand projections represent the most conservative buildout for the project site from a water demand perspective.

In response to the comment, the second paragraph on draft EIR p. 3.G-1 was revised as follows:

> San Francisco's ~~Hetch Hetchy~~ regional water system, operated by the San Francisco Public Utilities Commission (SFPUC), supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and ~~27~~ 26 wholesale customers in Alameda, Santa

[38] SFPUC, District Scale Non-Potable Water Calculator Version 9.1, April 8, 2022.

Clara, and San Mateo counties. The system supplies an average of 85 percent of its water from the Tuolumne River watershed, stored in the Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an In-city distribution system that serves retail customers in San Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, ~~and~~ recycled water, and non-potable water.

In response to the comment, the second paragraph on draft EIR p. 3.G-2 was revised as follows:

In December 2018, the State Water Resources Control Board (state water board) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment), to establish water quality objectives with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. Specifically, the Bay-Delta Plan Amendment requires the release of 30 to 50 percent of the unimpaired flow[39] from the three tributaries from February through June every year, whether it is wet or dry. In SFPUC modeling of the new flow standard, it is assumed that the required release from the Tuolumne River is 40 percent of unimpaired flow. During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed.

In response to the comment, the third paragraph on p. 3.G-2 was revised as follows:

If the Bay-Delta Plan Amendment is implemented, the SFPUC would be able to meet the projected demand in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~ and corresponding water use reductions throughout the SFPUC's regional water system service area, including San Francisco. Without the implementation of the Bay-Delta Plan Amendment, the SFPUC would not experience shortages until the fourth and fifth year of a multi-year drought at 2045 levels of projected demand.

In response to the comment, the last paragraph on draft EIR p. 3.G-2 was revised as follows:

In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [state water board] as early as possible after December 1, 2019." In accordance with the state water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a substitute agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the

[39] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.

> state environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement. To date, those negotiations are ongoing.

In response to the comment, the third paragraph and footnote 284 on draft EIR p. 3.G-3 was revised as follows:

> The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve overall water supply resilience through the Alternative Water Supply Planning Program. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant[284] and the 2020 plan~~.
>
> ~~[284] A water supply assessment was prepared for the project using the variant projected demand because it represents the most conservative buildout for the project site from a water demand perspective.~~

In response to the comment, the last paragraph on draft EIR p. 3.G-8 was revised as follows:

> The proposed project or variant would include the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to the comment, the first full paragraph on draft EIR p. 3.G-12 was revised as follows:

> The SFPUC adopted a water supply assessment for the proposed project on October 24, 2022.[25] The water supply assessment for the variant identifies the project's total water demand, including a breakdown of potable and non-potable water demands.[26] The proposed project or variant is subject to San Francisco's Non-potable Water Ordinance (San Francisco Health Code article 12C). The Non-potable Water Ordinance requires new ~~commercial, mixed-use, and multi-family residential~~ development projects ~~with 250,000~~ of 100,000 gross square feet or more ~~of gross floor area~~ to install and operate an onsite non-potable water system and meet certain water demands with the onsite non-potable water. ~~Such projects must meet their toilet and urinal flushing and irrigation demands through the collection, treatment, and use of available graywater, rainwater, and foundation drainage. While not required, projects may use treated blackwater or stormwater if desired.~~ Commercial buildings that install building-by-building alternate water source systems must meet toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate (water vapor collected from air conditioning systems). Residential and mixed-use buildings must meet toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project or variant would meet the requirements of the Non-potable Water Ordinance ~~by using treated commercial blackwater, graywater, and rainwater for toilet and urinal flushing and irrigation~~ with the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to the comment, the last paragraph on draft EIR p. 3.G-13 was revised as follows:

> Potable water to meet the site's potable water and fire flow demands would be supplied to the project site from the SFPUC's regional water system, via the in-city low-pressure water distribution system, described above. The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections,[27] ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities. Therefore, the proposed project or variant would not require construction of new or expanded potable water distribution facilities.

In response to the comment, the last paragraph on draft EIR p. 3.G-14 was revised as follows:

> The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~ demand projections, supplies for which would be accommodated by the existing regional water treatment and transmission facilities. The proposed project or variant's population and employment growth is within the projected growth that is the basis for ongoing improvements to the emergency firefighting water system. The proposed project or variant would reduce stormwater flows to existing combined sewer system facilities consistent with the City's Stormwater Management Requirements and Design Guidelines. For these reasons, the proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities during construction or operation, and this impact would be ***less than significant***.

In response to the comment, the first paragraph under "Operation" on draft EIR p. 3.G-15 was revised as follows:

> Water use at full buildout is estimated at 90.74 million gallons per year,[40] and would include irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. The proposed project or variant would ~~include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated prior to reuse onsite at a treatment plant or facility located within the project site~~ meet the requirements on the Non-potable Water Ordinance by the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas.

WATER SUPPLY AND WATER SUPPLY INFRASTRUCTURE IMPACTS

A comment states that the proposed project or variant's impacts on water supply have not been adequately addressed and that the City has commissioned a report to identify sites for a desalination facility. Draft EIR Impact UT-2, starting on draft EIR p. 3.G-15, discusses the variant's[41] water supply impacts, which are identified as less than significant. As noted on draft EIR p. 3.G-17, no single development project alone in San

[40] This discussion evaluates water use at full buildout of the proposed variant because the variant includes more residential units and institutional space, and consequently greater water use, than the proposed project.
[41] As noted in footnote number 310 on draft EIR p. 3.G-15, the water supply assessment was prepared using the variant demand projections because it represents the most conservative buildout for the project site from a water demand perspective.

Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years.

Comments state that the impact on the city's water supply was considered as a percentage of the total water available to the city, and request that further analysis be performed on both the volume and pressure impacts on the surrounding neighborhoods and if necessary, identify mitigation measures. The effects of project operation on the local low-pressure water system are evaluated under Impact UT-1 on draft EIR p. 3.G-14. As noted on draft EIR p. 3.G-4, the low-pressure water system distributes potable water within San Francisco. A fire flow demand analysis was conducted for the proposed project or variant, which as discussed in draft EIR p. 3.G-14 concludes that the low-pressure water system would provide minimum residual pressures of at least 20 pounds per square inch during fire flow use. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated potable water demand analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, in Chapter 2 of this RTC. While the potable water demand estimates have increased with the revised variant, the increased potable demand would not result in as much instantaneous draw on the low-pressure water system as during fire flow use; therefore, as concluded in the draft EIR and Chapter 2 of this RTC, new or expanded low-pressure water system infrastructure would not be required to meet the proposed project, variant, or revised variant's demand.

RECYCLED WATER AVAILABILITY

A comment requests that the City assess whether there is an opportunity to access recycled water via purple pipes from nearby sources for landscape irrigation and cooling at the project site, and states that extension of such infrastructure to the site may benefit other projects as well. As of the date of this RTC document, SFPUC's Westside Enhanced Water Recycling Project provides approximately 8 miles of recycled water pipelines from the Oceanside Wastewater Treatment Plant to irrigated areas in Golden Gate Park.[42] The project site is not currently served by this SFPUC project. The proposed project or variant is subject to the City's Non-Potable Water Ordinance and Recycled Water Ordinance. The proposed project or variant would comply with the Non-Potable Water Ordinance and Recycled Water Ordinance by producing its own non-potable water on-site and distributing it to non-potable uses within specific buildings or within the project site, as applicable per the Infrastructure Plan. The proposed system(s) would be private and not connected to future City recycled water systems, should they ever be extended to the vicinity of the project. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

[42] SFPUC, FAQ Overview Westside Enhanced Water Recycling Project, August 2022, https://www.sfpuc.org/sites/default/files/documents/Westside-Enhanced-Water-Recycling-Project_Aug_2022_0.pdf, accessed April 17, 2023.

4.I.2 Comment UT-2: Utilities Infrastructure

This response addresses the following comments, which are quoted below:

I-Boken-5

I-Chang-7

I-Herlihy1-13

I-Ho-1

I-LG-2

I-Naraghi-13

I-Parthasarathy-14

I-Tsang-1

O-ITHA-4

O-SFSU-7

O-SPEAK-4

O-WTPCC-4

"the issues of resiliency and climate change, as the project will have dedicated emergency firefighting water pipes, but the City has stated that there aren't funds to connect them to the city's pipeline network." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-5, UT-2])*

"(7) This project has a significant impact on increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore." *(Mary Chang, Letter, 2/7/2023 [I-Chang-7, UT-2])*

"13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-13, UT-2])*

"I just wanted to notify my concern on the Sonestown Redevelopment Project. The size of the project is too large for the existing infrastructure." *(Hyesoon Ho, Letter, no date [I-Ho-1, UT-2])*

- "Increased demand on outdated infrastructure (electric, water, sewer) (Section 3.7) Although the developer proposes to build new infrastructure on the project site, it will be connected to existing resources. Considering frequent drought conditions, flooding and sewage spills, is it safe to add thousands of new residents without clear plans and funding to upgrade infrastructure?" *(LG, Letter, 2/13/2023 [ILG2, UT2])*

"13) The impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-13, UT-2])*

"13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-14, UT-2])*

"The infrastructure required to support the increased population density and activities is huge and will adversely impact the neighborhood." *(D.W Tsang, Letter, 2/8/2023 [I-Tsang-2, UT-2])*

- "We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA4, UT2])*

"7) Utilities:

- A) SF State occasionally experiences power outages and we are considering methods whereby we may have access to redundant power supplies from differing sources. Please consider whether the project site has ample access to utilities and whether additional sources are needed to support this growth." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-7, UT-2])*

"UTILITIES AND SERVICE SYSTEMS

The project proposes to construct independent Emergency Firefighting Water System (EFWS) pipes onsite.

However, the Draft EIR states that the nearest hookup to the City's EFWS pipeline network is Ocean Avenue and San Fernando Way.

Although geographically closest, this hookup location doesn't appear to deliver the maximum benefits of EFWS.

Besides high volume, EFWS pipes and hydrants are designed to utilize high pressure.

The typical residential water pressure is 60 psi. The EFWS system can reach a maximum pressure of 328 psi.

However, this is dependent on EFWS hydrants and pumping stations.

There are currently two (2) EFWS pumping stations on the Eastside of the City.

For the Stonestown EFWS to operate effectively, there needs to be an ocean water pump station.

To achieve this, a possible configuration is hooking up to the EFWS pipe and hydrant on 19th Avenue at Ulloa and extending it to 19th Avenue and Buckingham Way.

This could connect to another section of EFWS pipes and hydrants from 19th Avenue and Sloat to Sloat and the Great Highway.

The ocean water pump station could be located in the vicinity of the Oceanside Treatment Facility.

An affiliate of Brookfield Properties is Brookfield Infrastructure. Brookfield Infrastructure should be well positioned to implement this EFWS expansion as part of the Stonestown Development Agreement.

A subsidiary of Brookfield Infrastructure is Poseidon Water.

Poseidon Water is the owner/operator of a desalination (desal) facility in San Diego County. The engineering firm for this facility is IDE Technologies.

It has been confirmed by IDE Technologies that it is technically feasible to engineer a combined EFWS ocean water pump station and a desal facility.

The structure would function as a desal facility during normal operations and bypass the desal process in an emergency to provide ocean water directly to the EFWS system.

This could also be included in the Development Agreement." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-4, UT-2])*

- "We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-4, UT-2])*

RESPONSE UT-2

The comments relate to the capacity of existing infrastructure in the area. Some comments state that the EIR should address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods. Other comments are more general and state that the proposed project or variant is too large for existing infrastructure. Comments also suggest changes to the project to include expansion of the emergency firefighting water system. References to the variant in this section also apply for the revised variant presented in Chapter 2 of this RTC document, with differences noted where relevant.

This response is organized as follows:

- General Infrastructure Capacity
- Wastewater and Water Infrastructure Impacts
- Power Supply
- Emergency Firefighting Water System

GENERAL INFRASTRUCTURE CAPACITY

Comments express concern that the proposed project or variant is too large for existing infrastructure, and that upgrades to infrastructure would be needed, or that infrastructure improvements could adversely affect the neighborhood. A comment requests consideration of whether the project site has ample access to utilities and whether additional sources are needed to support the proposed project or variant. The proposed project or variant's potential impacts related to utilities and service systems infrastructure, including impacts related to new or expanded water or stormwater drainage facilities, water supplies, wastewater treatment capacity, and solid waste, are addressed under draft EIR Impact UT-1 (pp. 3.G-13 to 3.G-14) and Impact C-UT-2 (pp. 3.G-27 to 3.G-28). Detailed responses regarding the infrastructure impacts are provided below.

WASTEWATER AND WATER INFRASTRUCTURE IMPACTS

Comments request that the EIR address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods. Impact UT-3 on draft EIR pp. 3.G-22 and 3.G-23 analyzes impacts associated with the proposed project or variant to exceed the capacity of existing wastewater treatment facilities that would result in the need for new or expanded wastewater treatment facilities. As stated under Impact UT-3 on draft EIR p. 3.G-23, the Oceanside Treatment Plant is permitted to treat an average dry-weather influent flow of up to 43 mgd, and in 2020 the average dry-weather flow to the treatment plant was 12 mgd. The proposed project or variant would be subject to regulations that require onsite water reuse and decreasing the amount of stormwater runoff from the project site. In addition, the combined sewer and stormwater peak flows from the project site into each existing combined sewer system point of connection[43] would be reduced compared to existing conditions. For example, in compliance with the City's stormwater management ordinance, the proposed project or variant would be required to reduce the stormwater rate and volume by 25 percent for the smaller 2-year, 24-hour storm, which would result in a decrease in total flow from the project site to the combined sewer system during this storm condition. Therefore, the proposed project or draft EIR variant would not require new or expanded combined sewer system facilities in the surrounding neighborhoods or at the Oceanside Treatment Plant and this impact would be less than significant.

The project sponsor's infrastructure plan describes the required infrastructure improvements to be constructed to support the proposed project and variant. The infrastructure plan presents the existing and proposed infrastructure components and systems, including demolition, corrective geotechnical measures, site grading, street and multi–modal transportation systems, open space improvements, sustainability and resiliency considerations, potable water system, auxiliary water system, non-potable water system, combined sewer system, stormwater management controls, and dry utility system. The infrastructure plan also identifies the responsible parties for the design, construction, and maintenance of the infrastructure. The infrastructure plan includes requirements to prevent the proposed project or variant from exacerbating

[43] Points of connection are near Lowell High School, Buckingham Way at the intersection with Winston Drive, Winston Drive at 20th Avenue, and Buckingham Way along the southern border of the project site.

existing conditions. The infrastructure plan would be part of the development agreement that must be approved by the board of supervisors for the project to proceed, and the infrastructure design requirements would be a term within the agreement.

Comments request the inclusion of a data-based impact analysis that factors in runoff management and discusses how to prevent the morbidity of plants in parks and open spaces where treated water is used. Water treated by onsite treatment systems (also called alternate water source systems) would be required to comply with requirements of the City's Non-potable Water Ordinance, which are discussed on draft EIR p. 3.G-8. As discussed in health code article 12C, section 12C.5, the Director of Health shall issue rules and regulations regarding the operation of the alternate water source system to protect public health and safety, and the regulations must address at a minimum water quality criteria, monitoring and reporting content and frequencies, and operation and maintenance requirements. For further information on regulations applicable to non-potable water, recycled water, and stormwater management requirements, see draft EIR pp. 3.G-8 and 3.G-9.

Onsite treated water would also be required to comply with state requirements once such requirements are adopted. California Water Code section 13558 requires the state water board to adopt regulations for risk-based water quality standards for the onsite treatment and reuse of non-potable water for non-potable end uses in multifamily residential, commercial, and mixed-use buildings (such as the proposed project or variant). The state water board has not yet adopted such regulations, but has developed proposed regulations and plans to submit a Notice of Proposed Rulemaking to the Office of Administrative Law to start the rulemaking process in 2023.[44] The proposed regulations are pathogen risk-based water quality standards, and must include water quality monitoring requirements and reporting requirements.[45] Once approved by the Office of Administrative Law and filed with the Secretary of State, the regulations would be published in California Code of Regulations title 22, division 4, chapter 3.5, Onsite Treatment and Reuse of Nonpotable Water. In 2001, an estimated 525,460 acre-feet per year of recycled water was used in California. Between 2002 and 2015, that number increased to approximately 713,000 acre-feet per year of recycled water use in California, used primarily for agricultural and landscape irrigation.[46] Based on the recycled water regulatory requirements described above for agricultural and landscape irrigation, and proposed regulations including water quality monitoring, the use of treated water for landscape irrigation is not anticipated to adversely affect plants in parks and open spaces.

A comment states that the project or variant proposes to construct independent Emergency Firefighting Water System (EFWS) pipes onsite. A comment states that there needs to be an ocean water pump station for the Stonestown EFWS to operate effectively and suggests that the proposed project or variant include a combined desalination facility and ocean water pump station at Ocean Beach as part of the development agreement. A comment states that the City has stated that there are no funds to connect emergency firefighting water pipes at the project site to the City's pipeline network. The commenter is incorrect that the proposed project or variant would construct an independent EFWS onsite. The City's EFWS is described on draft EIR p. 3.G-4, which is managed by SFPUC and includes cisterns in the project vicinity. Improvements to the EFWS are planned as part of the City's capital planning process and funded through municipal bonds. In

[44] California State Water Resources Control Board, SBDDW-22-001 Regulations for Onsite Treatment and Reuse of Nonpotable Water, https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/onsite_nonpotable_reuse_regulations.html, accessed April 10, 2023.
[45] California State Water Resources Control Board, Fact Sheet: Frequently Asked Questions Regulations for Onsite Treatment and Reuse of Nonpotable Water, last updated September 29, 2022.
[46] Olivieri, A.W., B. Pecson, J. Crook, and R. Hultquist, 2020. California water reuse – Past, present, and future perspectives. *Advances in Chemical Pollution, Environmental Management and Protection*, Vol. 5.

2018, the SFPUC completed a study analyzing options for high-pressure fire suppression for the Richmond, Seacliff, and Sunset districts. To better cover the west side of the city with pressurized water for emergency firefighting purposes, San Francisco envisions a Potable Emergency Firefighting Water System consisting of over 14 miles of new, seismically resilient high-pressure pipelines. The looping pipeline network would be supplied with four water sources at two strategic locations with delivery expected in two phases.[47]

As discussed on draft EIR p. 3.G-14, the proposed project or draft EIR variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue. Fire flow was simulated using a model based in part on field flow tests conducted by the San Francisco Fire Department to assess whether the proposed project system would meet industry and SFPUC standard for flow and pressure. Fire flow demands of 2,000 gallons per minute would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch and the impact would be less than significant.

In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. Overall, the revised variant would result in an increase in water demand and wastewater generation. The updated analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, of this RTC. The proposed project, draft EIR variant, or revised variant would not require new or expanded low-pressure water system infrastructure and the impact would be less than significant. The comment will be transmitted to City decision-makers for consideration in their deliberations on whether to approve the project.

4.I.3 Comment UT-3: Increase in Trash Impacts

This response addresses the following comment, which is quoted below:

I-LG-5

- "Impact of project (cumulative) on cleanliness, public health and quality of life. The images of the proposed project are pristine, but the reality is that 19th Avenue is covered with graffiti and trash is dumped everywhere. What will prevent this project from attracting more of the same?" *(LG, Letter, 2/13/2023 [ILG5, UT3])*

RESPONSE UT-3

A comment states that the proposed project or variant would have cumulative impacts on cleanliness, public health, and quality of life and states that 19th Avenue is covered with graffiti and trash. As discussed in initial study Section D.4, Aesthetics and Parking (see draft EIR Appendix B), aesthetics shall not be considered in determining whether a project has the potential to result in significant environmental effects if the project is in a transit priority area, on an infill site, and is residential, mixed-use residential, or an employment center. The project meets these criteria, and therefore, the initial study and EIR do not consider aesthetics in determining the significance of project impacts under CEQA. Draft EIR Impact UT-4 pp. 3.G-24 through 3.G-26 discusses the project's impacts related to solid waste standards and solid waste reduction goals. As discussed there, the

[47] City and County of San Francisco, City and County of San Francisco Capital Plan for Fiscal Years 2022–2031, https://www.onesanfrancisco.org/the-plan-2022/overview, accessed April 7, 2023.

proposed project or variant would not include features that would impede compliance with local and state solid waste management requirements. Cumulative impacts of the proposed project or variant are analyzed in the respective section of the draft EIR for each resource topic. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.J Other CEQA Considerations [OC]

4.J.1 Comment OC-1: Areas of Controversy and Unresolved Issues

This response addresses the following comment, which is quoted below:

I-Full-29

"Page 4-5, Section 4.D. It is difficult to understand why the EIR preparers chose to identify so many 'potential areas of controversy and unresolved issues'. Is it not the intent of the EIR to actually analyze the impacts of the project? For example, the third bullet identifies 'project and cumulative impacts on traffic congestion and parking'. This should not be an 'unresolved issue'. This very topic was included in scoping comments as being requested to be analyzed and included in the EIR. However, no such analysis was conducted. The only reason this is an 'unresolved issue' is because the EIR preparers chose not to conduct the analysis. In reviewing Appendix D, all of the information is available regarding the number of vehicle trips through 28 intersections in the vicinity of the project site. Providing information regarding the level of service (LOS) at these intersections could have been provided, but was not. Many of the other topics on this list were either focused out of the EIR in the Notice of Preparation or have been analyzed in the EIR. Why are these on this list?" *(Dave Full, Letter, 2/12/2023 [I-Full-29, OC-1])*

RESPONSE OC-1

The comment relates to Section 4.D, Areas of Known Controversy and Issues to Be Resolved, on draft EIR pp. 4-5 through 4-6. The commenter expresses difficulty understanding the content of this section. The commenter asserts that "project and cumulative impacts on traffic congestion and parking" should not be included in this section, and this and other topics were inappropriately excluded from analysis in the draft EIR.

A comment asks why the list of potential areas of controversy and issues to be resolved for the proposed project or variant provided in draft EIR Section 4.D includes issues that were either "focused out of the draft EIR in the NOP" or have been analyzed in the draft EIR. As specified in CEQA Guidelines section 15123, an EIR shall contain a brief summary of the proposed action and its consequences, and the summary shall identify areas of controversy known to the lead agency, including issues raised by agencies and the public and issues to be resolved. Accordingly, potential areas of controversy and issues to be resolved for the proposed project or variant, as expressed by agencies and community members in response to the notice of preparation (NOP) for the draft EIR published by the planning department on April 27, 2022, are identified in draft EIR Section 4.D, Areas of Known Controversy and Issues to Be Resolved. As stated in draft EIR Section 4.D, to the extent the comments received on the NOP relate to environmental issues, they are addressed in the draft EIR and initial study (included as draft EIR Appendix B). As further stated in draft EIR Section 4.D, any comments

related to the proposed project or variant's merits that cannot be addressed through the CEQA process will be provided to decision-makers as part of the entitlement process.

The commenter's assertion that scoping comments related to project and cumulative impacts on traffic congestion and parking were not addressed in the draft EIR is incorrect. Draft EIR Section 3.B, Transportation and Circulation, analyzes the potential project-level and cumulative impacts related to transportation in accordance with CEQA. Refer to Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, p. 4-137, which explains that automobile delay (traffic congestion) described by level of service is no longer used as a performance metric under CEQA. Response GC-NON-CEQA-5 also explains that parking is no longer considered an environmental impact under CEQA. Response CU-1, Cumulative Projects, p. 4-12, explains the projections taken into account for cumulative conditions.

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.K Alternatives [AL]

The comments and corresponding responses in this section cover the subjects included in draft EIR Chapter 5, Alternatives. The comment topics relate to:

- AL-1: Preservation Alternatives
- AL-2: Partial Preservation Alternative Transportation Analysis
- AL-3: Alternatives Comparison Table
- AL-4: Adequacy and Reasonable Range of Alternatives

4.K.1 Comment AL-1: Preservation Alternatives

This response addresses the following comments, which are quoted below:

A-CPC-Moore-2

A-HPC-3

I-Full-14

I-Full-30

I-Goodman-4

"The one thing I would like to suggest is that the graphics, which show the theater, punch out the theater more strongly because your eye gets lost, given the line weight of how that particular object -- which is much of the alternatives -- pops into your eye when you look at the alternatives. It may be the smallness of what the EIR shows, but I would strongly suggest that it is more strongly delineated and popped out in the graphics." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-2, AL-1])*

- Commissioner Black inquired why the additional building W5 added to the Full Preservation Alternative was also not incorporated within the Partial Preservation Alternative. She thought the partial preservation alternative that saved the theater lobby was successful and supported it over the full preservation alternative.
- Commissioner Johns found the changes made to the partial preservation alternative to be acceptable.
- Commissioner So requested clarification as to whether or not the project team explored the possibility of constructing above the theater or explored reduction of other non-residential square footages on the site to increase the residential units under the preservation alternatives." *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-3, AL-1])*

"Page 3.A-22, Mitigation Measure M-CR-1. Why is there not the possibility of incorporating the façade of the theater into a building to be developed on the project site? Could this minimize the impact associated with the impairment of the architectural resource? This should be considered as a measure for mitigating this impact to a historic resource." *(Dave Full, Letter, 2/12/2023 [I-Full-14, AL-1])*

"Page 5-26, Section 5.C.3. Why does this alternative include two very different aspects of the proposed project? The partial preservation of the theater mitigates very different impacts than the relocation of parking. Putting them in one alternative does not make sense and undermines the intent behind the alternatives process." *(Dave Full, Letter, 2/12/2023 [I-Full-30, AL-1])*

"The stonestown theater is I believe a great façade and front that should be re-utilized in any future plaza or housing concept. The back theater portion may be torn down and a new building attached on the back side, of the theater. The need for a central community space, digital zone for school kids from Lowell who often hang at the mall, and the new housing could be a wonderful pop-concept for the front of the theater with some space for seating and protected shelter areas for youth and entertainment for them after school including a green-scaped area, and food services that promote better after hours public spaces and lighting alongside treescapes and a revitalized theater entry zone. This could also serve after hours community organizations and meetings if designed as a community hub. I strongly support the preservation of the front portion of the stonestown theater into a more positive public/private area that is available and useable by youth and seniors in the community." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-4, AL-1])*

RESPONSE AL-1

The comments relate primarily to alternatives described and evaluated in the draft EIR to reduce or avoid significant impacts on historic architectural resources. A comment suggests that the former UA Stonestown Twin Theater should be more strongly delineated in the alternatives graphics (i.e., figures) in the draft EIR. In response to the comment, Figure 5-1, Alternative B: Full Preservation and Relocated Parking Alternative (draft EIR p. 5-16) and Figure 5-2, Alternative C: Partial Preservation Alternative (draft EIR p. 5-27) were revised to delineate the theater. The revised figures are provided on pp. 5-50 and 5-51.

A comment asks why the new 100-unit residential building at Block W5 added to Alternative B, Full Preservation Alternative, was not also incorporated within Alternative C, Partial Preservation and Relocated Parking Alternative. A comment requests clarification as to whether construction above the former UA Stonestown Twin Theater or reduction of other non-residential square footages on the project site to increase the residential units under the preservation alternatives was considered.

In response to a comment, Alternatives B and C as presented in the draft EIR are the result of refinements made in response to comments on the original preservation alternatives presented to the San Francisco Historic Preservation Commission (HPC) on September 7, 2022 (see draft EIR pp. 5-6 to 5-7). Strategies to avoid or lessen significant impacts on historic architectural resources would include retaining all or some of the theater building, resulting in Alternatives B and C, which were carried forward in the draft EIR. As discussed in draft EIR Section 5.A.1, CEQA Requirements for Alternatives Analysis, p. 5-1, in accordance with CEQA Guidelines section 15126.6(a), the draft EIR describes and evaluates a reasonable range of alternatives to the proposed project or variant that would feasibly attain most of the basic objectives of the proposed project or variant, but would avoid or substantially lessen any identified significant adverse environmental effects of the proposed project or variant. As also discussed in draft EIR Section 5.A.1, an EIR is not required to consider every conceivable alternative to a project or alternatives that are considered infeasible. Rather, it must consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. Alternative C is therefore not required to include a new Block W5 similar to Alternative B. Insofar as Alternatives B and C would avoid or substantially lessen some of the significant effects of the proposed project or variant, these alternatives meet the CEQA requirements for alternatives and appropriately represent a range of historic preservation scenarios.

In response to a comment, an alternative was considered that included rehabilitation of the theater and construction of an addition on top of the building to recoup the loss of dwelling units, based on recommendations by the HPC. As discussed on draft EIR p. 5-88, this concept was rejected due to the extent of changes to the historic resource that would be required to build on top of the structure. The structure of the theater building would not support any sizable addition. To erect an addition over the existing building, either the rear half of the building would need to be reconstructed with steel framing and an addition built on top of it, or, if an addition were located over the theater's lobby, installation of structural steel within the lobby would be required to support an addition overhead. These alterations would create a substantial visual impact on the interior and exterior of the historic resource, altering its overall massing, and affecting the historic lobby by disrupting its open quality with additional structural supports. This alternative was rejected from further consideration because it would not avoid or lessen the significant impact on the historic resource.

Comments discuss retention and reuse of the façade of the former UA Stonestown Twin Theater. A comment expresses support for incorporation of the theater façade into a future plaza, housing concept, or other area available and useable by youth and seniors. A comment asserts that incorporation of the theater façade into the proposed project or variant should be considered in the mitigation measures included in the draft EIR to reduce impacts of the proposed project or variant on the historic resource.

The proposed project or variant as described in draft EIR Chapter 2, Project Description, includes the demolition of the theater. Impacts on the historic architectural resource and mitigation measures are identified under Impact CR-1, draft EIR pp. 3.A-22 through 3.A-24. To mitigate impacts associated with demolition of the historic architectural resource, Mitigation Measures M-CR-1a (Documentation of Historic Resources), M-CR-1b (Salvage Plan), and M-CR-1c (Public Interpretive Plan) are identified; however, impacts

are identified as significant and unavoidable. Retention and incorporation of the theater façade into the proposed project or variant are not part of the mitigation measures.

The draft EIR describes and evaluates a full preservation and partial preservation alternative that would attain most of the basic objectives but avoid or substantially lessen the significant historic architectural resources impact of the proposed project or variant. Specifically, as discussed in draft EIR Section 5.C.3, pp. 5-26 to 5-29, Alternative C, Partial Preservation and Relocated Parking Alternative, was developed to reduce the significant and unavoidable impact on a historic architectural resource (i.e., the former UA Stonestown Twin Theater) that would occur under the proposed project or variant. As discussed in draft EIR Section 5.C.3, Alternative C would retain 4,000 square feet of the theater building, including the primary façade and the sunken entry plaza, while removing the rear auditorium volume and stucco-clad hyphen to develop an eight-story residential building. As discussed in draft EIR Section 5.C.3, pp. 5-28 to 529, while Alternative C would retain some character-defining features of the historic resource and would reduce the identified historic resource impact, the impact of this alternative related to the demolition of a historic resource is identified as significant and unavoidable, similar to the proposed project or variant. As discussed in draft EIR Section 5.C.3, implementation of Mitigation Measures M-CR-1a through M-CR-1c would be required to reduce impacts. However, only avoidance of substantial adverse changes would reduce impacts to a less-than-significant level. As such, as discussed in draft EIR Section 5.C.3, while Alternative C would reduce impacts on the historic theater building in comparison with the proposed project or variant, the impact on historic architectural resources is identified as significant and unavoidable with mitigation. Other preservation alternatives related to the former UA Stonestown Twin Theater were considered but rejected and described in draft EIR Section 5.E.2. Refer to Response AL-4, p. 4-86 regarding the adequacy and reasonable range of alternatives. Consequently, the draft EIR appropriately considers incorporation of the theater façade as a measure to avoid or substantially lessen identified significant adverse environmental effects of the proposed project or variant.

A comment relates to Alternative C, Partial Preservation and Relocated Parking Alternative. The commenter asserts that the alternative's purpose to reduce more than one identified significant impact of the proposed project or variant "does not make sense and undermines the intent behind the alternatives process." In response to this comment, as specified in CEQA Guidelines section 15126.6(a), an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives but avoid or substantially lessen any identified significant adverse environmental effects of the project. CEQA includes no prohibitions against an alternative addressing more than one identified significant adverse environmental effect of a project.

4.K.2 Comment AL-2: Partial Preservation Alternative Transportation Analysis

This response addresses the following comment, which is quoted below:

I-Full-31

"Page 5-28, paragraph 1. The second reason for this alternative is to 'redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue)'. This is curious because nowhere in the EIR does it acknowledge that there would be 'substantial vehicle delay' on either roadway. Where is this analysis? What is the 'substantial delay'? How can an alternative be based on information that has not been provided in the EIR?

Page 5-30, Table 5-3. There is a major mathematical error in this table. The net change in vehicle trips is 27, not 275 as stated in the table. In addition, without information regarding the level of service (LOS) of intersections on 19th Avenue and 20th Avenue, how is the reduction of 2.2% in vehicle trips meaningful? Without the background information on existing and future LOS, it is not possible to understand what this alternative would accomplish.

Page 5-31, Emergency Access Impacts. Paragraph 2 and Table 5-4 focuses on the intersection of Buckingham Way and Winston Drive. In the traffic analysis, the queue lengths on Eucalyptus Drive between 20th Avenue and 19th Avenue was considered to be an impact. Why was this intersection not included?" *(Dave Full, Letter, 2/12/2023 [I-Full-31, AL-2])*

RESPONSE AL-2

The comments relate to the analysis of transportation impacts for Alternative C, Partial Preservation and Relocated Parking Alternative.

A comment states that the draft EIR does not include information or analysis related to the vehicle delays and questions how an alternative can be based on information that has not been provided in the EIR. The draft EIR states on p. 5-62: "relocation of 200 retail parking spaces from Block E1 to Block S3 to redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue) and that are used by multiple transit routes under the proposed project or variant." Vehicle delays that would be caused by the proposed project or variant were considered in the analysis of the project's and variant's transit delay impact. Impact TR-5 on pp. 3.B-65 through 3.B-70 and Impact C-TR-4 on pp. 3.B-78 through 3.B-83 in draft EIR Section 3.B, Transportation and Circulation identifies significant transit delay impacts, which a major component would be vehicle delays. Alternative C, Partial Preservation and Relocated Parking Alternative, would meet most of the basic objectives of the project and substantially reduce the already less-than-significant transit delay impacts of the project. Transit delay impact as a result of redistribution of project-generated vehicle trips from Alternative C, Partial Preservation and Relocated Parking Alternative is summarized in pp. 5-29 through 5-33 in draft EIR Chapter 5, Alternatives.

A comment correctly identifies an error in draft EIR Table 5-3 in which the total net change of negative 27 estimated vehicle trips under Alternative C, Partial Preservation and Relocated Parking Alternative, is incorrectly identified as negative 275 estimated vehicle trips.

In response to the comment, draft EIR Table 5-3, p. 5-30, was revised as follows:

Table 5-3 Land Use Characteristics and Estimated Vehicle Trips, Alternative C: Partial Preservation and Relocated Parking Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative C Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	401	(6)
Retail Sales and Services Use	492	480	(12)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	108	(9)
Childcare	32	32	0
Total	***1,249***	***1,222***	***~~(275)~~ (27)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(2.2%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

The estimated overall vehicle trip change of negative 2.2 percent identified in draft EIR Table 5-3 is correct and not affected by the above-noted typographical error. That is, the typographical error does not change the resulting transit delay analysis or conclusions.

A comment further questions how the reduction of 2.2 percent in vehicle trips is meaningful without information regarding the LOS of intersections on 19th Avenue and 20th Avenue. The commenter states that without the background information on existing and future LOS, it is not possible to understand what Alternative C, Partial Preservation and Relocated Parking Alternative would accomplish. In response to this comment, this information is meaningful to estimate the resulting transit delay impacts from Alternative C, Partial Preservation and Relocated Parking Alternative in relation to those impacts from the project and variant. Refer to the discussion and analysis of these effects on pp. 5-29 through 5-33 in draft EIR Chapter 5, Alternatives, and Appendix D.2, Transit Analysis Memorandum (see Transit Delay Analysis and Results section on pp. 21–30). Detailed LOS analysis which was used for the transit delay analysis is provided in Appendix Q of draft EIR Appendix D.2.

A comment notes that the discussion of emergency access impacts related to Alternative C on draft EIR p. 5-31 and in Table 5-4 focus on the intersection of Buckingham Way and Winston Drive and asks why queue

lengths on Eucalyptus Drive between 20th Avenue and 19th Avenue that were considered to be an impact in the traffic analysis were not included.

At the northeast portion of the project site (close to Block E1), including Eucalyptus Drive between 20th Avenue and 19th Avenue, as referenced by the commenter, Alternative C would produce fewer vehicle trips and shorter queue lengths than the proposed project or variant. The proposed project or variant resulted in less-than-significant impacts related to potentially hazardous conditions, accessibility of people walking and bicycling, and emergency vehicle access at those locations, and, thus, so would Alternative C.

As stated on draft EIR p. 5-31, queuing at the Winston Drive/Buckingham Way intersection is analyzed because Alternative C proposes to relocate 200 retail parking spaces from Block E1 to Block S3. Vehicles that would access those parking spaces in the proposed project or variant were redistributed to southwest of the project site, which is closer to Block S3, for analysis. Detailed reasoning for the significance determination is presented under draft EIR Impact TR-2, on pp. 3.B-57 through 3.B-63, and Impact TR-3, on pp. 3.B-63 through 3.B-65. Additionally, queuing at the Winston Drive/Buckingham Way intersection is analyzed because of its proximity to San Francisco Fire Department Station 19. If vehicle queues were to extend to the fire station, they would block fire truck access. The vehicle queues are identified as having a less-than-significant impact on emergency vehicle access.

4.K.3 Comment AL-3: Alternatives Comparison Table

This response addresses the following comment, which is quoted below:

I-Full-32

"Page 5-65, Table 5-12. The CEQA significance determination notes on the table identify 'LSM' as less than significant with mitigation. The table actually uses the acronym LTSM. Is the reader to conclude that these are the same?" *(Dave Full, Letter, 2/12/2023 [I-Full-32, AL-3])*

RESPONSE AL-3

Comment I-Full-32 correctly identifies an error in draft EIR Table 5-12. As the comment notes, the abbreviation "LSM" is identified in the footnotes of the table as the significance determination code for "less than significant with mitigation" while the table entries identify "LTSM" for this same significance determination. The latter (LTSM) is the correct abbreviation.

In response to this comment, the footnotes of Table 5-12, pp. 5-65 through 5-77, were revised as follows:

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LTSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:
[a] See EIR Chapter 3 and Appendix B for complete impact statements.

4.K.4 Comment AL-4: Adequacy and Reasonable Range of Alternatives

This response addresses the following comments, which are quoted below:

A-CPC-Moore-1

A-HPC-2

I-Arbulu-5

I-Goodman-2

I-Herlihy2-1

I-Herlihy2-3

I-Herlihy3-1

I-Pilpel-1

I-Strassner-1

O-SierraClub-3

"I believe that the Draft EIR in front of us is accurate and complete. It has an unusually large number of alternatives; mostly, we see two or three. This really stretches it and gives everybody really the subtleties of what can happen. This is only -- these are comments for the Draft EIR, not an exchange between us and staff." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-1, AL-4])*

- "The HPC agreed that the DEIR analyzed a reasonable and appropriate range of preservation alternatives to address historic resource impacts. Some commissioners weighed the merits of the different alternatives and expressed a preference for one alternative over another. *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-2, AL-4])*

"The scope of Phase 1 must be scaled down to reduce the impact on the existing residents. This is not some remote parking lot that they want to develop with nothing around it, or in an empty downtown This is in the middle of our neighborhood. Please help us!" *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-5, AL-4])*

"I would like to see increased height of many of the proposed buildings along 19th Ave. possibly forming a better plaza across from mercy high school with the change in topography and inclusion of a plaza and transit entry point vs. just a big parking lot." *(Aaron Goodman, Letter, 1/11/2023 [I-Goodman-2, AL-4])*

"CEQA Guidelines section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5-1 outlines alternatives B, C, D. E which range from 2890 dwelling units to 1758 dwelling units. Assuming 2 person occupancy per unit that would result in 5600 residents on the high side to 3500 residents on the low side on the Stonestown property where there are no residents today. Unavoidable negative impacts are noted in the draft on transit, traffic, emergency services and infrastructure (Sewer, water etc).

No consideration is given to an Alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure. Such an Alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor, Lakeshore and Ingleside Terraces to provide additional housing to San Franciscans." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-1, AL-4])*

"Table 5-1 Alternatives B,C,D,E show site maps of a towering wall of apartments on 19th Avenue stretching 0.25 miles on the West side of 19th Avenue from Eucalyptus Drive to Buckingham Way. The DEIR is silent on the environmental impact of this significant 'Western Wall' on 19th Avenue." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-3, AL-4])*

"CEQA guideline section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly obtain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This Draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5.1 outlines Alternatives (B), (C), (D), and (E), which range from 2,890 dwelling units to 1,758 dwelling units. Assuming two-person occupancy per unit, that would result in approximately 5,600 new residents, on the high end, or 3,500 new residents on the low end, on the Stonestown property. Today, there is no resident on that property.

Unavoidable negative impacts have been detailed in the DEIR and were also detailed by Miss Florentina. And those negative -- unavoidable negative impacts are noted in the Draft, and they impact transit, traffic, emergency services and infrastructure, including sewer and water. No consideration is given to an alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure. Such an alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor and Lakeshore." *(James P. Herlihy, Public Hearing, 2/9/2023 [I-Herlihy3-1, AL-4])*

"1. I urge that a new alternative be developed that would create fewer housing units, retail space, and other uses, and reduce density and height further than the Code Compliant or Reduced Density Alternatives. I believe that adding another alternative as described would increase the choice of alternatives and allow a better range of alternatives for analysis and decisionmaking on this important project on the west side of San Francisco." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-1, AL-4])*

"**On an Ideal Senior Housing Facility** –HS Jan/2023

This concept of an ideal facility was developed as I searched for my near future new home but I did discovered some close facsimiles in Oakland. The 18 story building proposed Stonestown would be my ideal is construction started five years ago.

But, it could be available for some ones future. The facility should be large, probably more than 200 units. This will allow for good management and many people meeting opportunities for residents. Residence in the facility should be limited to people who have started to collect social security to self-select for common interests because senior housing is more than just housing. Because seniors are trending downward in abilities and upward in needs for service the units should be proportionally allocated to a few people who only want to downsize and desire only limited services with the majority of units for people who need more services but are mostly independent. This means that all new residents must be able to walk in without assistance and that most people will age in place in the same unit or at least in the same building. I don't believe that those with an extreme loss of memory and/or very great needs for personal care should live in this facility. The latter should not mean that those who can and/do walk, wheel or motor themselves to facility functions should be required to move. The growing number of the latter group, over time, to enjoy the facility is another reason for a larger facility.

Seniors also come with a range of available finances and needs for space. Many can use a large studio, about 500 square feet. Many will only be able to afford a small studio. A few, perhaps couples, may feel a need for larger, separate one bedroom units. 'Murphy' beds, back to the 1920s, can make entertaining more feasible in small units. Kitchens should all be minimal: two burners, no oven, small microwave, small refrigerator and a little counter space and storage. Hopefully SF and developers can see that these small units make it easier for people to downsize and release their larger houses for families who need more space. This will allow most seniors to age in place and not have to move until near the end. In addition, many people who are ready to downsize from two or three bedrooms have a lower floor that can be improved to provide an additional housing unit.

The residence should include food service. A few residents will want 21 meals per week. Most will want the flexibility of 14 meals per week. Saving a few meal tickets to treat family to meal will be nice. Some residents will want very few senior meals per week and will pay a little more per meal. Residents should be able to change their food needs as they age. Maybe the dining room should have two sittings. All of the residents should contribute proportionally to the various kinds of common space. This might constitute a small subsidy for those with reduced means. Services should be available but elective. Weekly cleaning is nice but cleaning a small space can be better than doing a tai chi exercise on you tube. Again, choice is good but maybe except for recovery after illness a choice should be long term, to allow management to plan. Shuttle vans are also a good service.

An ideal location would have: good transit service nearby; accessible pleasant nearby walks in parks and neighborhoods and close by food shopping for those who elect to do some of their own cooking. These virtues are part of the 18 story building proposed for the Stonestown parking lot and the building can be designed to include all of the above virtues too. The problem is facility management. Senior facilities used to be owned and operated as non-profits. I suggest that the future residents pay the rent for their unit to Brookfield; in the typical supply and demand method. However, their payment for their share of the essential senior common spaces should be paid to a new carefully organized cooperative management organization. This organization will also provide the services and meals that the residents will choose. While the latter is difficult, it will have more benefits to the resident seniors and society in general than the growing

corporatization of senior facilities that used to be managed by nonprofit religious or other groups. The alternative to a cooperative would be close government supervision similar to a monopoly because seniors after they move in and age can't really move. Thus they become utility consumers." *(Howard Strassner, Letter, 1/26/2023 [I-Strassner-1, AL-4])*

"2) Because of SF's increasing numbers of elderly residents and our great need for market rate housing the study should have included as a partial alternative the impacts of using the eighteen story building as a senior 'independent living' residence. This alternative should note that many of the residents of this senior facility would be people who are ready to downsize from a two or three bedroom home or apartment but now see little advantage to moving. If they can move into a nearby senior residence they will release their larger, nearly empty, houses for families who need more space. In addition some of these homes have a lower floor that can be improved to provide a second housing unit, but, that is too big a project for an elderly person. An attachment is provided to show how this building might work as an Ideal senior residence.

3) Because of SF's great need of housing of all sorts the Study should have included an alternative of greater density and height (without shading an existing park) with up to the maximum number of units, with existing zoning, or more. This alternative would provide the developer with greater profits from the currently wasted parking lot land and more shoppers for the remaining shopping center. The studies discussion of the problems and benefits of increased density on this site might give the public and their elected representatives a chance to select a larger project or a better understanding of why the proposed size is just right." *(Howard Strassner, Member SF Group Executive Committee, Sierra Club, Letter, 1/27, 2023 [O-SierraClub-3, AL-4])*

RESPONSE AL-4

The comments relate to the adequacy and range of alternatives described and evaluated in the draft EIR.

Comments assert that the draft EIR fails to meet the CEQA requirement to describe and evaluate a reasonable range of alternatives. The comments assert that the draft EIR should consider an alternative that includes several hundred dwelling units with a lower population density that is less burdensome on traffic, transit, emergency services, and infrastructure. The comments assert that such an alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor, Lakeshore, and Ingleside Terraces. A comment requests consideration of an additional alternative that would include fewer housing units, retail space, and other uses, and reduce density and height further than Alternative D, Code Compliant Alternative, and Alternative E, Reduced Density Alternative, evaluated in the draft EIR. A comment asserts that adding this alternative would increase the choice of alternatives and allow a better range of alternatives for analysis and decision-making. A comment states that the scope of the proposed project or variant must be scaled down to reduce the impact on the existing residents.

In response to the comments that the draft EIR fails to meet the CEQA requirement to describe and evaluate a reasonable range of alternatives, the draft EIR alternatives analysis is consistent with CEQA Guidelines section 15126.6. Pursuant to CEQA Guidelines section 15126.6(a), an EIR is required to set forth alternatives necessary to permit a reasoned choice and shall be limited to alternatives that would avoid or substantially lessen any of the significant physical effects of the project on the environment and that would meet most of

the project sponsor's basic objectives. An EIR need not consider every conceivable alternative to a project but instead "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (CEQA Guidelines section 15126.6(a)). That is, an EIR does not have to identify and analyze alternatives that would not meet most of the project sponsor's basic objectives, nor does it have to discuss every possible variant or permutation of alternatives, or alternatives that do not further reduce or eliminate significant environmental impacts of the project. (Id.) Under the "rule of reason" governing the selection of the range of alternatives, the EIR is required "to set forth only those alternatives necessary to permit a reasoned choice" (CEQA Guidelines section 15126.6(f)). CEQA generally describes "feasible" to mean the ability to be accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors. Site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control may also be taken into consideration when assessing the feasibility of alternatives (CEQA Guidelines section 15126.6(f)(1)). The analysis presented in Chapter 5 of the draft EIR represents a reasonable range of alternatives and complies with the CEQA Guidelines. The main purpose of presenting a range of alternatives to a project is to focus on alternatives that are capable of reducing or eliminating any significant environmental effects of the proposed project identified in an EIR (CEQA Guidelines section 15126.6(b)), not to focus on other issues such as potential socioeconomic effects. Furthermore, as discussed in draft EIR Section 4.A, Growth Inducement, pp. 4-1 and 4-2, the project site is located within the 19th Avenue Priority Development Area (PDA), which includes Merced Manor and Parkmerced, and is bounded by Eucalyptus Drive and Sloat Boulevard to the north, 19th Avenue to the east, Wilshire Avenue to the south, and Lake Merced Boulevard to the west. PDAs as identified in Plan Bay Area 2050 call for an increasing percentage of Bay Area growth to occur as infill development in areas located near transit and where services necessary to daily living are provided in proximity to housing and jobs. As discussed in draft EIR Section 4.A, the new residents on the project site under the proposed project or variant would not be substantial for the city as a whole, as they would represent approximately 1.2 percent of the projected increase in citywide population growth of 591,359 by 2050. Therefore, as discussed in draft EIR Section 4.A, the population increase associated with the proposed project or variant is within the planned growth for San Francisco. Furthermore, as discussed in draft EIR Section 4.A, and as addressed under their respective topics in the draft EIR, project- or variant-related growth would be served by existing utilities, infrastructure, and public services. In summary, and as discussed in the draft EIR, the increase in the residential and employment population on the project site would not result in a substantial or unplanned increase in the population of the project vicinity or the city.

In response to the comment that the draft EIR neglected to consider an additional alternative of several hundred dwelling units with a lower population density and less impact on traffic, transit, emergency services and infrastructure, such analysis is not required by CEQA and would be inconsistent with the CEQA Guidelines. As specified in CEQA Guidelines section 15041(c), with respect to a project which includes housing development, a lead or responsible agency shall not reduce the proposed number of housing units as a mitigation measure or alternative to lessen a particular significant effect on the environment if that agency determines that there is another feasible, specific mitigation measure or alternative that would provide a comparable lessening of the significant effect. As discussed above and further below, the draft EIR examines a reasonable range of alternatives to the proposed project or variant, including alternatives that would result in reduced development and population compared to the proposed project or variant, and analysis of an additional alternative of several hundred dwelling units is neither required nor warranted.

In response to comments regarding a reduced-scale project, as discussed in draft EIR Section 5.B, Alternatives Screening and Selection, p. 5-5 and above, in accordance with CEQA Guidelines section 15126.6(a), the draft EIR examines a reasonable range of alternatives to the proposed project or variant. The planning department based the alternatives selection process on identifying alternative concepts that would avoid or lessen the significant and unavoidable impacts identified for the proposed project or variant, but which would feasibly attain most of the basic project objectives in compliance with CEQA Guidelines section 15126.6. Strategies to avoid or lessen significant environmental impacts primarily involved reducing the extent of development that could occur with implementation of the proposed project or variant, thereby reducing significant impacts. Accordingly, and as described in draft EIR Chapter 5, Alternatives, the alternatives described and evaluated in the draft EIR would result in reduced development and population increase compared to the proposed project or variant. The assertion that the draft EIR fails to meet CEQA Guidelines section 15126.6(a) is unsupported by evidence.

A comment states that draft EIR Table 5-1, Characteristics of the Proposed Project, Variant, and Alternatives, pp. 5-11 to 5-12, depicts a "towering wall" of apartments on 19th Avenue from Eucalyptus Drive to Buckingham Way and asserts that the draft EIR is silent on the impacts of this "Western Wall." The comment does not identify specific impacts for which the draft EIR is purportedly silent. In addition, as stated on draft EIR p. 2-1, the proposed project or variant (as well as the revised variant) would require amendments to the San Francisco General Plan, San Francisco Planning Code, and zoning map. The proposed rezoning would modify existing applicable height limits, including existing height limits within the portion of the project site referenced by the commenter. The draft EIR appropriately analyzes impacts associated with the height of the proposed buildings (e.g., draft EIR Section 3.E, Wind, and Section 3.F, Shadow).

A comment states that the draft EIR should have included and evaluated an alternative of greater density. Similarly, a comment expresses support for increasing the height of the buildings along 19th Avenue. As described above, the draft EIR examines a reasonable range of alternatives. A higher-density alternative with more housing units than included in the proposed project or variant would not address any of the significant and unavoidable environmental impacts identified for the proposed project and was thus rejected from further analysis in the draft EIR (draft EIR p. 5-87). However, as requested by commenters, the project sponsor has revised the draft EIR variant to include more housing than the proposed project or draft EIR variant. The revised variant is presented in Chapter 2 of this RTC document.

Comments support an alternative that includes senior independent living residences. As discussed above, the draft EIR alternatives analysis is consistent with CEQA Guidelines section 15126.6. Pursuant CEQA Guidelines section 15126.6(a), an EIR is required to set forth alternatives necessary to permit a reasoned choice and shall be limited to alternatives that would avoid or substantially lessen any of the significant physical effects of the project on the environment and that would meet most of the project sponsor's basic objectives. There is no requirement in CEQA to include an alternative that includes senior independent living residences. Nonetheless, as previously noted, the project sponsor revised the variant to increase the number of residential units, including senior housing. The commenters are referred to Chapter 2, Revisions to the Project Description, of this RTC document for an updated description and analysis of the revised variant.

4.L Plans and Policies [PP]

4.L.1 Comment PP-1: General Plan Consistency and Zoning Controls

This response addresses the following comments, which are quoted below:

I-Conroy2-5

I-Conroy2-6

"Despite public scoping comments, the Draft EIR has not addressed how the project deviates from the Urban Design Element of the General Plan. The Urban Design Element requires that projects be compatible with the views and vistas afforded by the existing city pattern.

The Draft EIR does not identify the project's inconsistencies with the Element's policies, as requested by the undersigned's EIR scoping letter as follows:

Policy No. 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.

The project will disrupt and block views of the Ocean, the shoreline and sunsets on the Ocean's horizon from the neighborhoods to the east of the project. The increased height will also disrupt views of Mount Davidson, Twin Peaks and other topographical features from areas west of the project, including, for example, views from Fort Funston.

Policy No. 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

This policy provides that '…the relationships of building forms to one another and to other elements of the city pattern should be moderated so that the effects will be complementary and harmonious.' In other words, the buildings should fit with one another to produce a harmonious effect. The Draft EIR should, but does not, analyze to what extent the proposed increased height and bulk conflict with the existing topography and buildings.

Policy No. 2.6: Respect the character of older development nearby in the design of new buildings.

The Draft EIR does not consider whether the project's new buildings conflict with the pattern established by the existing buildings in the area, including the existing apartment buildings and adjoining residential neighborhoods: Policy 2.6 further states that, 'In some cases, formal height limits and other building controls may be required to assure that prevailing heights or building lines or the dominance of certain buildings and features will not be broken by new construction.'

Policy No. 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.

This policy, similar to Policy 2.6, must also be considered by the EIR in determining whether the heights proposed by the project are out of scale with the surrounding area, imposing a significant adverse environmental impact on the area.

Policy No. 4.1: Protect residential areas from the noise, pollution and physical danger of excessive traffic.

The EIR should evaluate the extent to which the proposed project will increase traffic through the neighborhoods and consider mitigating measures to be taken, such as those suggested by this policy." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-5, PP-1])*

"The project's proposed deviation from the existing zoning restrictions will set a precedent for similar departures from existing planning. This will encourage and enable similarly scaled projects that are inconsistent with the character of the City's southwestern quadrant. This and similarly scaled projects will permanently disrupt the existing broad skyline, which has always respected vistas of the ocean and topographical features from all parts of the city west of Twin Peaks. These adverse environmental impacts are not identified by the Draft EIR. While a zoning compliant alternative is presented by the Draft EIR, the adverse environmental consequences of a project that is not compliant with existing zoning are not, but should be discussed. This is necessary in order to adequately present the consequences of potential decisions made regarding this project." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-6, PP-1])*

RESPONSE PP-1

A comment states that the proposed project or variant is not consistent with the Urban Design Element of the San Francisco General Plan (general plan) and that this should be addressed in the draft EIR. A comment asserts that the proposed project or variant would encourage and enable projects that deviate from existing zoning and would result in adverse impacts on the character of the city's southwestern quadrant.

In response to comments, as discussed under Section E.1, Land Use and Planning, in the initial study (included as draft EIR Appendix B), pp. 9 through 10, the proposed project or variant would result in an impact related to land use and planning under CEQA if the proposed project or variant would substantially conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect, such that a substantial adverse physical change in the environment would result. Accordingly, the environmental effects of the proposed project or variant and applicable policies that relate to physical environmental issues are discussed in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study. In addition, as discussed under Section C, Compatibility with Existing Zoning and Plans, in the initial study, p. 1, the compatibility of the proposed project or variant with general plan policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision whether to approve or disapprove the proposed project or variant. To approve the proposed project or variant, the City would be required to make findings of project consistency with the general plan and other applicable plans and policies. Adoption of amendments to the general plan would resolve any conflicts between general plan objectives or policies and the proposed project or variant. Thus, as discussed under Section C, neither the proposed project nor the variant would be inconsistent with the general plan, including the Urban Design Element.

With regard to Urban Design Element policies 1.1, 1.3, 2.6, and 3.5, as discussed under Section D.4, Aesthetics and Parking, p.7, in the initial study, in accordance with CEQA section 21099, Modernization of

Transportation Analysis for Transit-Oriented Projects, aesthetics and parking shall not be considered in determining whether a project has the potential to result in significant environmental effects, provided the project meets all of the following three criteria:

a) The project is in a transit priority area;

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center.

The proposed project or variant meets each of the above criteria.[48] Therefore, in accordance with CEQA section 21099, the draft EIR, including the initial study, does not consider aesthetics in determining the significance of impacts related to the proposed project or variant. In addition, changes to neighborhood character are not considered significant environmental effects under CEQA unless the changes would result in a substantial adverse physical change in the environment. Physical environmental effects related to building heights, such as wind and shadow, are discussed in draft EIR Sections 3.E and 3.F, respectively.

With regard to Urban Design Element policy 4.1, as noted above, the environmental effects of the proposed project or variant and applicable policies that relate to physical environmental issues are discussed in Section E, Evaluation of Environmental Effects, of the initial study and in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures. Specifically, physical effects of the proposed project or variant related to transportation are addressed in draft EIR Section 3.B, Transportation and Circulation. Physical effects of the proposed project or variant related to noise are addressed in draft EIR Section 3.C, Noise and Vibration. Physical effects of the proposed project or variant related to air quality are addressed in draft EIR Section 3.D, Air Quality. Furthermore, an EIR is not required to discuss every relevant general plan policy, as the primary purpose of an EIR is to "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project" (CEQA section 21061). In the case of the proposed project or variant, which would require a general plan amendment, the planning commission and board of supervisors will consider potential conflicts with the general plan independently of the environmental review process. Thus, in addition to considering inconsistencies that affect environmental issues, the decision-makers consider other potential inconsistencies with the general plan as part of the decision to approve or disapprove a proposed project. Therefore, the City's process of considering the project for approval will involve a thorough review of applicable plans and policies beyond those that could result in physical effects.

In addition, p. 2 of the initial study (draft EIR Appendix B) acknowledges that the proposed project or variant would not be consistent with the existing zoning, which include the proposed residential density ratio and institutional uses and retail sales and service uses in the RH-1(D) and RM-1 Districts. In addition, hotels and public and private parking garages are permitted by conditional use authorization in the C-2 District. As described on p. 2 of the initial study, "the proposed project or variant would include amendments to the planning code and the zoning maps, creating a new Stonestown Special Use District (SUD). If approved by the planning commission and board of supervisors, the Special Use District would establish land use controls for the project site and incorporate design standards and guidelines (DSG)."

[48] San Francisco Planning Department, Eligibility Checklist for CEQA Section 21099: Modernization of Transportation Analysis, Stonestown Development Project (hereinafter "*CEQA section 21099 Checklist*"), December 9, 2022.

As discussed under Section E, Evaluation of Environmental Effects, in the initial study, p.9, potential conflicts with applicable land use policies or development regulations will be analyzed and considered by City decision-makers during their deliberations on the merits of the proposed project or variant and as part of their actions to approve, modify, or disapprove the proposed project or variant. Adoption of amendments to the general plan, planning code, and zoning map would eliminate conflicts between the proposed project or variant and applicable land use policies or development regulations. This same process would be implemented, as applicable, for other proposed development projects in the city's southwestern quadrant or anywhere else in the city. See also Response AE-1, p. 4-95, for additional responses to comments that relate to aesthetics.

4.M Aesthetics [AE]

4.M.1 Comment AE-1: Aesthetics

This response addresses the following comments, which are quoted below:

I-Conroy2-2

I-Conroy2-4

I-DeBaun-3

I-DeBaun-6

I-Hardeman-4

I-Herlihy1-2

I-Herlihy1-6

I-Herlihy3-3

I-Moore-2

I-Naraghi-2

I-Naraghi-6

I-Parthasarathy-3

I-Parthasarathy-7

I-Pilpel-7

O-ITHA-6

O-WTPCC-6

"This is particularly true with respect to the comments regarding the project's blocking of public vistas and view corridors." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-2, AE-1])*

"The Draft EIR does not even acknowledge blocked public vistas as significant adverse impacts on the surrounding neighborhoods and the City's southwestern quadrant. The Draft EIR does nothing to clarify the misleading depictions of the project contained in the developer's presentations - the developer's birds-eye

views and aerial renderings hide the true visual impact of the project's towers and mid-rise structures. In this respect the Draft EIR does not meet the requirement that it present sufficient information on this subject so that the public and the public agency decision-makers have sufficient information to assess the project's negative environmental impacts.

The Draft EIR should, but does not, contain photographs, renderings and depictions of the project's visual impact on public vistas and views from streets, sidewalks and other public areas within the surrounding neighborhoods. The disruption of views from public parks, including Lake Merced and Fort Funston, requires depiction, discussion and analysis of mitigating measures. The draft EIR does not discuss the fact that the existing ten story buildings to the west of the project are situated at a ground elevation much lower than the project. Those buildings therefore do not serve as a guide to how a ten story, much less a nineteen story building, will appear on the project site. The EIR should address the project sponsor's promotion of the project as a 'city within a city' and how that notion of a high-rise downtown in the midst of residential neighborhoods so close to the coastline will effect a major deviation from the area's overall city pattern." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-4, AE-1])*

"2. Section D-4: the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Holloway Drive and Buckingham way must be adequately addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-3, AE-1])*

"5. Section 3.1: how will the architectural style/height blend with the unique character of the homes in Lakeside and adjacent neighborhoods? Nearly 3,000 housing units and an 18-story hotel will dramatically alter the architectural character of the neighborhood" *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-6, AE-1])*

- "The neighborhoods immediately impacted by the project, Merced Manor and Lakeshore, consists of single story single homes. A 90 foot tower 300 feet from Eucalyptus Avenue would scar the skyline, rise above the trees in park and dominate the view for blocks. This is NOT the 19th avenue corridor---this is next to a small neighborhood park! The proximity of the proposed 90 foot high residential building will dramatically and irreversibly adversely affect our small park, creating a monolith looming over what has always been a haven of nature and quiet." *(Donald Hardeman, Letter, 2/7/2023 [IHardeman4, AE1])*

"2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-2, AE-1])*

"6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-6, AE-1])*

"And finally, the proposed -- it's essentially a towering wall of apartments which would go from Eucalyptus to Buckingham Way, approximately 0.25 miles, and no analysis has been done on the environmental impact of having a towering wall on the west side of 19th Avenue --" *(James P. Herlihy, Public Hearing, 2/9/2023 [I-Herlihy3-3, AE-1])*

"Setting aside the considerable direct impact that the project will have for some eight years on the lives of the residents of Lakeside (particularly noise, pollution, and congestion—for which there is no direct compensation), the size of the project is incompatible with the scale and the mass of buildings in the surrounding area. The plan calls for changing the zoning to raise the height limits to 90 feet (and 150 feet for a hotel). In particular there would be a string of buildings of 90 feet in height (and one of 150 feet) along 19th Avenue which would be a visually jarring Manhattanization of this thoroughfare. Other than a few buildings at San Francisco State (which are a mile away and not controlled by the City) there are no buildings along 19th Avenue (or its continuation as Park Presidio) which are close to 90 feet in height. People the world over visit San Francisco because much of it is beautiful—esthetics matter greatly." *(Andrew Moore, Letter, no date [I-Moore-2, AE-1])*

"2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4." *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-2, AE-1])*

"6) The architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-6, AE-1])*

"2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-3, AE-1])*

"6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-7, AE-1])*

"7. The Draft EIR dismisses the Project's impacts from changing the entire character of the area from two-story structures to include some 20-story structures. The Air Quality impacts are narrowed to include only construction impacts, which does not comply with CEQA." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-7, AE-1])*

- "**Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks,

streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA6, AE1])*

- "**Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks, streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-6, AE-1])*

RESPONSE AE-1

The comments relate primarily to aesthetic impacts of the proposed project or variant. Several comments express concerns regarding potential impacts of the proposed project or variant on public vistas, views, and visual character. Comments also express concerns regarding the extent and heights of buildings that would be developed with implementation of the proposed project or variant and resultant effects of this new development on neighborhood character in the project area and adjacent neighborhoods (.

Commenters are referred to Response CR-1, Historic Architectural Resources Analysis, p. 4-16, regarding the neighborhood's architectural character.

With regard to comments related to aesthetic impacts, as discussed under Section D.4, Aesthetics and Parking, p. 7, in the initial study (included as Appendix B of the draft EIR), and as discussed above, in accordance with CEQA section 21099, Modernization of Transportation Analysis for Transit-Oriented Projects, aesthetics and parking shall not be considered in determining whether a project has the potential to result in significant environmental effects, provided the project meets all of the following three criteria:

a) The project is in a transit priority area;

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center.

As discussed under initial study Section D.4, the proposed project or variant meets each of the above criteria.[49] Therefore, in accordance with CEQA section 21099, the draft EIR, including the initial study, does not consider aesthetics in determining the significance of impacts related to the proposed project or variant. Aesthetics impacts of a qualifying residential, mixed-use, or employment center project on an infill site located within a transit priority area are not, as a matter of law, considered significant impacts on the environment pursuant to CEQA section 21099; consequently, potential aesthetics effects on existing character, scenic vistas, or views are not considered in the CEQA analysis. However, CEQA section 21099(d)(2)(A) states that the lead agency may consider aesthetic impacts under local design review ordinances or other discretionary powers. In addition, changes to neighborhood character are not

[49] San Francisco Planning Department, Eligibility Checklist for CEQA Section 21099: Modernization of Transportation Analysis, Stonestown Development Project (hereinafter "*CEQA section 21099 Checklist*"), December 9, 2022.

considered significant environmental effects under CEQA unless the changes would result in a substantial adverse physical change in the environment. The environmental effects of the proposed project or variant are described and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in initial study Section E, Evaluation of Environmental Effects. Specifically, physical environmental effects related to building heights, such as wind and shadow, are discussed in draft EIR Sections 3.E and 3.F, respectively.

Alternatives D and E in the draft EIR were developed to reduce significant and unavoidable impacts related to transportation and circulation, noise and vibration, air quality, and wind that could occur under the proposed project or variant (see draft EIR pp. 5-39 and 5-52). The physical environmental impacts associated with these alternatives are analyzed in accordance with CEQA Guidelines section 15126.6. Although aesthetic impacts are not considered in the CEQA analysis for the reasons described above, the alternatives analysis evaluates the environmental effects of the shorter buildings.

The planning department recognizes that the public and decision-makers may be interested in information pertaining to the aesthetic effects of the project and therefore has included visual depictions of the proposed project or variant in draft EIR Chapter 2, Figures 2-28 through 2-31 (pp. 2-43 to 2-46). A conceptual axonometric diagram of the proposed project and variant building massings is depicted in Figure 2-6 of the draft EIR on p. 2-11. This information will be provided to the decision-makers for their consideration in taking any approval actions on the proposed project or variant.

The assertion by one of the comments that presentations or depictions related to the proposed project or variant provided by the project sponsor seek to mislead the public or hide the true visual impact of the proposed project or variant is unsupported by evidence. Similarly, other comments related to land elevation, project promotions, or deviations from the city's pattern are offered without factual support or environmentally relevant connection to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts. The environmental effects of the proposed project or variant are described and evaluated in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of the draft EIR and in Section E, Evaluation of Environmental Effects, of the initial study.

4.N Greenhouse Gas Emissions [GHG]

The comments and corresponding responses in this section cover the subjects included in Section E.8, Greenhouse Gas Emissions (draft EIR Appendix B). The comment topic relates to:

- GHG-1: Greenhouse Gas Emissions Analysis

4.N.1 Comment GHG-1: Greenhouse Gas Emissions Analysis

This response addresses the following comment, which is quoted below:

I-Pilpel-6

"6. Greenhouse gas (GHG) emissions must be analyzed in the DEIR. (see, e.g., IBC Business Owners for Sensible Development v. City of Irvine (2023) 2023 Cal.App.LEXIS at p. *28-35 [EIR must analyze project's incremental contribution to GHG, which may be cumulatively considerable even if it appears relatively small

compared to statewide, national, or global emissions; must also consider source of such emissions and total GHG emissions])" *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-6, GHG-1])*

RESPONSE GHG-1

One comment 6 relates to the adequacy of the draft EIR's analysis of greenhouse gas (GHG) impacts during construction and operation of the proposed project or variant. The commenter states that GHG emissions must be analyzed in the draft EIR.

The draft EIR does analyze GHG emissions impacts in initial study Section E.8, Greenhouse Gas Emissions (see draft EIR Appendix B), associated with implementation of the proposed project or variant. As described on p. 53 of the initial study, the proposed project or variant would have a significant effect if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases.

CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. In accordance with section 15064.4, the significance of GHG impacts should consider the extent to which the proposed action would increase or reduce GHG emissions, exceed a locally applicable threshold of significance, or comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The CEQA Guidelines also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to reduce GHG emissions (section 15064(h)(3)). In compliance with CEQA Guidelines sections 15064.4 and 15064(h)(3), the GHG analysis provides a qualitative discussion of the degree to which the proposed project or variant would comply with regulations to reduce GHG emissions through the city's GHG Reduction Strategy. The analysis also evaluates the proposed project and variant against the air district's adopted GHG significance threshold that allows projects which are consistent with a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b) to conclude that the project's GHG impact is less than significant. As such, the analysis in initial study Section E.8, Greenhouse Gas Emissions meets the requirements of CEQA Guidelines section 15064.4 and a summary of that analysis is provided below.

In July 2021, the City adopted an updated GHG ordinance to demonstrate the City's commitment to the Paris Agreement by establishing GHG reduction targets for 2030, 2040, and 2050 and setting other critical sustainability goals.

To support the updated 2021 GHG ordinance, the City prepared the 2021 Climate Action Plan.[50] The 2021 Climate Action Plan is a roadmap for meeting the City's emissions reduction goals, which are:

- An interim target of cutting sector-based emissions 61 percent below 1990 levels by 2030; and
- Net-zero sector-based emissions by 2040, a 90 percent reduction from 1990 levels.

[50] City and County of San Francisco, *San Francisco's Climate Action Plan 2021*, https://sfenvironment.org/climateplan, accessed April 12, 2023.

These goals align with the updated GHG ordinance goals and are more ambitious than those set forth in Senate Bill 32 (e.g., a 61 percent reduction in sector-based GHG emissions compared to 1990 levels by 2030 rather than a 40 percent reduction by 2030) and Assembly Bill 1279 (e.g., achieving net zero GHG emissions by 2040 rather than by 2045).

San Francisco has developed many plans and programs for reducing the city's contribution to global climate change and for meeting the city's GHG reduction goals. As described on pp. 49 to 50 of the initial study, the city's GHG emissions reduction actions resulted in a 41 percent reduction in GHG emissions in 2019 compared with 1990 levels, which far exceeds the statewide 2020 target (1990 levels) and achieves the city's local 2025 target (40 percent below 1990 levels) six years in advance of the target year. Furthermore, the city's GHG emission reductions in 2019 also met the statewide 2030 target (40 percent below 1990 levels) more than 10 years in advance of the target year. This progress puts the City on the emission reduction trajectory to meet the 2030 target (61 percent below 1990 levels) and the 2045 target (90 percent below 1990 levels), as envisioned in the 2021 CAP.

The 2023 GHG Reduction Strategy Update[51] documents city actions related to pursuing cleaner energy, reducing energy consumption, supporting alternative transportation, and implementing solid waste policies. The 2023 GHG Reduction Strategy Update incorporates the 2021 Climate Action Plan's GHG emissions targets and strategies. The initial study was prepared before the 2023 GHG Reduction Strategy Update was completed. The 2017 GHG Reduction Strategy was the applicable plan when the initial study was prepared; however, as noted below, the project is also consistent with the 2023 GHG reduction strategy. The 2023 GHG Reduction Strategy Update includes updated regulations, the updated 2021 CAP, and the updated 2021 GHG ordinance. As discussed in the initial study, the project was evaluated using the most recent GHG checklist available at the time the initial study was prepared. The checklist includes all applicable regulations that reduce GHGs for the project. The City will continue to update its regulations and ordinances for new development to implement the GHG emission reduction strategies and measures in the 2021 CAP to achieve the City's 2030 and 2045 targets. These new regulations and ordinances will apply to the proposed project or variant, or portions of the proposed project or variant, as individual development applications are submitted to the City for approval. The City will update its GHG Reduction Strategy to incorporate these new regulations.

Because the city's GHG reduction targets are consistent with the statewide GHG goals for 2030 and 2045, actions that are consistent with the 2023 GHG Reduction Strategy Update and the 2021 CAP would be consistent with the state's GHG goals and would not conflict with an applicable plan or generate GHG emissions that would make a considerable contribution to global climate change. Because the proposed project or variant would be consistent with the City's 2023 GHG reduction strategy and 2021 CAP, the proposed project or variant would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan, and would not conflict with these plans.

Additionally, on April 20, 2022, the air district adopted updated GHG thresholds.[52] Consistent with CEQA Guidelines sections 15064.4 and 15183.5, the updated GHG thresholds for land use projects, such as the proposed project or variant, maintains the air district's previous GHG threshold that allow projects that are

[51] San Francisco Planning Department, 2023 Greenhouse Gas Reduction Strategy Update, Revised October 2023, https://sfplanning.org/project/greenhouse-gas-reduction-strategies, accessed December 5, 2023.
[52] Bay Area Air Quality Management District, CEQA Thresholds and Guidelines Update, April 2023, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed June 6, 2022.

consistent with a GHG reduction strategy to conclude that the project's GHG impact is less than significant. Because the proposed project or variant would be consistent with San Francisco's 2017 GHG reduction strategy, which is a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b), the proposed project or variant would have a less-than-significant impact on GHG emissions.

The air district's updated GHG thresholds also include an alternative performance-based threshold. As discussed in the initial study, the proposed project or variant meets the air district's performance based GHG thresholds. As demonstrated in the GHG checklist for the proposed project or variant, the project does not include natural gas infrastructure. With implementation of Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure, the proposed project or variant would include 2019 CALGreen Tier 2 electric vehicle infrastructure standards (see draft EIR Section 3.D, Air Quality). The proposed project or variant would be in a VMT-efficient area where VMT per capita is more than 15 percent below the regional average. The proposed project or variant would meet planning code section 169 (TDM program) through implementation of Mitigation Measure M-TR-4a that would develop a TDM plan (see draft EIR Section 3.B, Transportation). Finally, the proposed project would not result in a wasteful, inefficient, or unnecessary use of energy (see EIR Section 3.19, Energy.

Because the proposed project or variant would be subject to regulations adopted to reduce GHG emissions, the proposed project or variant would be consistent with San Francisco's 2023 GHG reduction strategy and 2021 CAP and would neither generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations. As such, the proposed project or variant's impact would be less than significant with mitigation with respect to GHG emissions.

4.O Recreation [RE]

4.O.1 Comment RE-1: Park and Open Space Impacts

This response addresses the following comments, which are quoted below:

I-Hardeman-5

I-Lifur-2

I-Lo-1

O-SFSU-6

- "Reduction of the proposed building height to 40 feet, which the developer represented for years to the neighborhood, is a much better fit for the area, and would have much less of a negative impact on the park.
- Paragraph 4 of the EIR claims that the goal of the plan is to prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space 'to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to nature and to the existing surrounding residential neighborhood of Merced Manor.' In reality, the proposed 90 foot building will have the opposite effect; it will harm the open space and create a disconnect from Merced Manor. The originally proposed 40 foot building conforms with the neighborhood and will significantly reduce the impact on the park.

- Revision to the originally proposed 40 foot height for this particular building would have an insignificant impact on the total housing that will be built with this massive project, while the benefit to the park and the people who use it daily would be incredibly significant." *(Donald Hardeman, Letter, 2/7/2023 [IHardeman5, RE1])*

"Ensuring there is additional green space on both sides of the current border of the park will also ensure the ongoing presence of birds in the Rolph Nicol park which is home to hawks, owls, crows and numerous song birds. The small, peaceful park will naturally become much more congested with the influx of so many people living right next to it. This is bound to drive away the birds and will also increase the level of trash left in the park along with noise levels. Instead of leaving the small park to fend for itself, the developer should be required to expand the park on its side of the border allowing greater space to absorb the increased usage that will come with the greater population density. The City already has trouble maintaining Rolph Nicol park at its current level of usage. It was left for long periods without watering which largely eliminated the beautiful thick meadow used for play, and users of the park frequently have to spend time clearing litter from the park before and while using it. The increased usage will further strain the park. Expanding the green space along the park will help mitigate the worst impacts on the existing park and help ensure the quality of life for all residents that only sufficient park and green space areas can make possible.

Finally, the up to 2-year construction period for the project so close to the Rolph Nicol park with the unavoidable pollution, dust, and noise that accompany such massive projects, will also disrupt its animal life, quiet enjoyment of the park and the beautiful, quiet open space sanctuary that it currently is. Further set back from the park would help mitigate such disruption during the long construction period." *(Jeff Lifur, Letter, 2/12/2023 [I-Lifur-2, RE-1])*

"As a native San Franciscan, residents of Merced Manor for almost ten years now, my family, dog and I take pride in being able to take long walks around our spacious neighborhood. Our residential homes as well as nearby schools, church and YMCA are all set back from the street/sidewalk, creating a sense of comfort and relaxation. These low-rise buildings are not looking over our shoulders as we stroll.

Here at Merced Manor and Lakeshore, we are a close knit community. Beyond the hustle and bustle of school hours, Rolph Nicol Park is our neighborhood hangout; we gather here throughout the day. The park has no adjacent buildings on two sides and is filled with tall trees, shrubs, a large grass area and a small play structure, creating a zen-like environment. During the day, the sun will peak through the trees painting a perfect back-drop. During the night, the distant lights of Stonestown can be seen, like illuminating a dark room with reassuring night lights. The new plan of constructing 90- foot buildings behind the park will destroy the scenery, bring gloominess and impact the entire neighborhood." *(Cynthia Lo, Letter, 2/11/2023 [I-Lo-1, RE-1])*

"6) Open Space: As a public university, SF State is a beloved place to visit—to enjoy the quad, pathways and other spaces for outdoor recreation and enjoyment. With the addition of a large residential community please consider how the project's population will be provided with open space for outdoor recreation and enjoyment to complement those provided at the university and surrounding environs. Perhaps there are options that might include accessible rooftop gardens, which would provide views of the

ocean and the lake nearby." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-6, RE-1])*

RESPONSE RE-1

The comments address the draft EIR's analysis of potential proposed project or variant impacts on parks and recreation. One comment expresses concern over pollution, dust, noise, and related disruptions to Rolph Nicol Jr. Playground during construction, as well as the increase in usage of the park due to the proposed project or variant. Another comment expresses the desire for the proposed project or variant to consider how the project's population will be provided with open space for outdoor recreation and enjoyment to complement those provided at SFSU and the surrounding environment. A few comments express concern regarding the proposed project or variant's effect on the quality of the park user experience at Rolph Nicol Jr. Playground, and some comments request additional setbacks or reduced height.

Potential impacts related to parks and recreation are discussed in initial study Section E.11, Recreation (see draft EIR Appendix B). Potential direct impacts on parks are discussed under Impact RE-1 relative to potential substantial adverse physical impacts associated with the provision of new or physically altered park facilities, or the need for new or physically altered park facilities. Similarly, potential direct recreation impacts are discussed related to the accelerated substantial physical deterioration of recreational facilities and the construction/expansion of recreational facilities. As discussed under Impact RE-1, the proposed project or variant would result in an increase in the demand for recreational resources on the project site, in the project area, and at the citywide level. However, the anticipated use of recreational resources would not be expected to substantially increase or accelerate the physical deterioration or degradation of existing recreational resources and would not result in the need to provide new or expanded parks or recreational facilities, as the demand would be offset by the development of new recreational and open space facilities on the project site. Therefore, the proposed project or variant's impact on recreational resources is identified as less than significant.

Regarding an increase in usage of Rolph Nicol Jr. Playground due to the proposed project or variant, as described in Section E.11, Rolph Nicol Jr. Playground is a 3-acre park with a play structure, grass, and surrounded by eucalyptus trees. It is adjacent to the northwest corner of the project site. As stated under Impact RE-1, an increase in the local population could contribute to or accelerate the deterioration of existing parks and recreational facilities if the demand generated by the new residents were to lead to overuse of existing facilities that would result in the need for new or modified facilities. Under the variant, while there would be an increase in the demand for facilities, the proposed project or variant would include new open spaces throughout the project site, including parks, plazas, parkways, and landscaped alleys that would serve to offset the increased demand by project residents. Given the proposed network of new publicly accessible open spaces at the project site, along with new private residential open space as guided by planning code requirements, implementation of the proposed project or variant would result in an increase in the overall availability of a variety of publicly and privately accessible recreational facilities and open spaces on the project site. As such, impacts related to the substantial increase or acceleration of the physical deterioration or degradation of Rolph Nicol Jr. Playground are identified as less than significant.

Regarding concerns about pollution, dust, noise, and related disruptions to Rolph Nicol Jr. Playground during construction, construction-related impacts are discussed in the air quality section of the draft EIR (see

draft EIR Section 3.D, Air Quality) and in the noise section of the draft EIR (see draft EIR Section 3.C, Noise and Vibration). Regarding potential impacts on park wildlife during construction, as discussed in Draft EIR Section 3.C, wildlife may be sensitive to noise; however, the proposed project or variant is in an urban area and would not introduce new development near sensitive wildlife habitat (draft EIR p. 3.C-5). Additionally, as discussed in initial study Section E.14, Biological Resources (see draft EIR Appendix B), compliance with existing state and federal regulations would ensure that construction activities associated with the proposed project or variant would have less-than-significant impacts on nesting birds covered under the Migratory Bird Treaty Act and the California Fish and Game Code. The commenter is also referred to Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105, and Response BI-1, Biological Resources Impacts, p. 4-109.

As discussed under Impact RE-1, the proposed project or variant would provide approximately 6 acres of publicly accessible open space. The open space would comprise parks, plazas, and green spaces integrated into the project site ranging from 0.2 to 1 acre each, which would provide connections between the project site and adjacent uses. Furthermore, the proposed project or variant would also include private open space consisting of balconies or common space accessible only to building occupants. Private residential open space would be provided as set forth in the special use district and Design Standards and Guidelines process. Accordingly, the proposed project or variant would enhance and expand publicly available recreational and open spaces of various types at the project site.

Regarding the proposed project's effect on the quality of park user experience at Rolph Nicol Jr. Playground and requests for additional setbacks or reduced height, these comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.P Public Services [PS]

The comments and corresponding responses in this section cover the subjects included in initial study Section E.13, Public Services. The comment topics relate to:

- PS-1: Increase in Crime and Demand for Public Services
- PS-2: Impacts on School Facilities

4.P.1 Comment PS-1: Increase in Crime and Demand for Public Services

This response addresses the following comments, which are quoted below:

I-Cenpai-2

I-Chang-5

I-DeBaun-7

I-EBirsinger-2

I-Herlihy1-7

I-Herlihy1-10

I-LBirsinger-5

I-LG-3

I-Naraghi-7

I-Naraghi-10

I-Parthasarathy-8

I-Parthasarathy-11

O-ITHA-5

O-WTPCC-5

"Environmentally, more traffic in that area will increase trash and garbage within the area. In addition, having a tall building there where dogs and kids alike gather will make it less safe. Crime has been on a rise in the neighborhood, and with a tall building blocking everything, crime will definitely increase. Do we really need a second tenderloin in San Francisco? I don't think so. Please keep this residential area safe and spacious before building more things and causing higher human traffic." *(Inverness Cenpai, Letter, 2/8/2023 [I-Cenpai-2, PS-1])*

"(5) It will increase the demand and the response time for public services from fire protection, police and emergency services." *(Mary Chang, Letter, 2/7/2023 [I-Chang-5, HZ-1])*

"6. Section E.13: The need for increased police, fire, emergency and public services for the 2,900 new dwellings and the 18 story hotel must be addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-7, PS-1])*

"1) Section 5.C of the EIR Draft: Safety: Stonestown is a mess with crime. Shoplifting is rampant. Car break-ins occur all the time. Police protection is already inadequate. Does the EIR report address these issues?" *(Eugene Birsinger, Letter, 2/9/2023 [I-Ebirsinger-2, PS-1])*

"7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-7, PS-1])*

"10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services." *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-10, PS-1])*

"**Section 5.c. Safety/Crime (no increase in demand for public services-including Police)**

- Address how the draft EIR indication that there will be no additional need for public services (including Police) was measured.
- Stonestown is currently a mecca for shoplifting and car break ins. Each day's police blotter includes at least four instances within the Stonestown boundaries (mall, roads and parking areas). Those only reflect crimes actually reported. The security at the complex is already less than adequate.
- Due to the well-known lack of police presence city-wide in San Francisco, the developers must consider an alternative to keep shoppers, merchants and residents safe. What are the plans to ensure safety? Perhaps an enhanced private security team should be considered as a means of reducing the crime." *(Laura Birsinger, Letter, 2/5/2023 [ILbirsinger5, PS1])*

- "The increased demand for public services from fire protection, police and Emergency medical services is not adequately addressed (Appendix B Section E.13) The Initial Study (page 65) acknowledges that the Police Department is understaffed, yet concludes that the additional demands of 7,000 new residents (plus those from the additional near-by projects) would not have a significant impact. The statistics used to support this conclusion came from 2018-2021 (including 2 years of Covid restrictions)." *(LG, Letter, 2/13/2023 [ILG3, PS1])*

"7) The increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-7, PS-1])*

"10) The cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services." *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-10, PS-1])*

"7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-8, PS-1])*

"10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-11, PS-1])*

- "**Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact be identified, analyzed, and mitigated with additional staffing or a manned police sub-station.

- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA5, PS1])*

- "**Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact be identified, analyzed, and mitigated with additional staffing or a manned police sub-station.
- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-5, PS-1])*

RESPONSE PS-1

The comments relate to the analysis in initial study Section E.13, Public Services (draft EIR Appendix B). The comments express concern regarding an increase in crime, demand for or provision of police protection services, fire protection, and emergency services, and cumulative impacts on public services.

Comments regarding increased traffic and trash impacts are addressed in Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, p. 4-137, and Response UT-3, Increase in Trash Impacts, p. 4-74, respectively.

The response to the public services–related comments is organized as follows:

- Increase in Crime
- Increased Demand for Police Protection Services
- Increased Demand for Fire Protection and Emergency Response Services
- Cumulative Demand for Public Services

INCREASE IN CRIME

Comments express concern that there would be an increase in crime as a result of the proposed project or variant. Similarly, one comment asserts that there is an existing lack of security and safety on the project site, and that additional police protection, including private enhanced private security, should be considered.

The potential for an increase in crime, shoplifting, vehicle burglary, building defacement, vandalism, litter, graffiti, and other activities that may result in a diminished quality of life for neighborhood residents are not considered impacts on public services under CEQA unless such effects result in the need for the construction of new or physically altered governmental facilities in order to maintain acceptable levels of public services, and the construction of such facilities result in adverse physical environmental impacts. Similarly, comments related to the adequacy of existing private security services on the project site and requests for inclusion or consideration of enhanced private security under the proposed project or variant are not pertinent to the evaluation of impacts related to public services under CEQA. As identified in draft EIR Section 1.C, p.1-2, pursuant to CEQA Guidelines section 15161, the draft EIR focuses on changes in the environment that would result from construction and operation of the proposed project or variant. Neither actual nor purported unlawful actions under existing conditions are considerations under CEQA, and thus, they are not addressed in the draft EIR. These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

INCREASED DEMAND FOR POLICE SERVICES

Several comments express general concern regarding the increase in demand for and provision of police protection services associated with the proposed project or variant or state that it was not adequately addressed in the initial study. Comments assert that there would be police service impacts on the Taraval Police District and request mitigation consisting of additional staffing or a manned police substation. A comment questions why data from years with restrictions related to COVID-19 were used in the analysis of police protection services. Comments state that police protection is already inadequate and that shoplifting and car break-ins occur often at Stonestown and suggest increasing private security as a means to reduce crime.

In response to these comments, initial study Section E.13, Public Services (see draft EIR Appendix B pp. 64 to 65) discusses impacts related to the provision of police protection services associated with the proposed project or variant. As stated under Impact PS-1, the increased demand for police protection services would not be considered substantial, given the relatively low demand for such services at the district level and the ongoing staffing analysis and dynamic resource deployment that occurs on a citywide basis. In compliance with the City charter mandate, police department resources are regularly redeployed based on need in order to maintain charter-mandated staffing and acceptable service ratios. For these reasons, implementation of the proposed project or variant would not require the construction of new or alteration of existing police facilities. Therefore, the impact is identified as less than significant, and no mitigation measures are required.

In response to a comment regarding the years of data used in the analysis of police protection services, including those with restrictions related to COVID-19, the 2018–2021 data set was selected to capture existing baseline conditions related to police services at the time of issuance of the notice of preparation (NOP), with enough breadth to allow a general understanding of the environmental impacts of the proposed project or variant related to police services. The data for calls for police service and incidents were used to compare police district variations. Because restrictions related to COVID-19 affected all districts, the inclusion of data from 2020 and 2021 would not affect the calls for service or incidents data or analysis of impacts related to police services in any meaningful way.

INCREASED DEMAND FOR FIRE PROTECTION AND EMERGENCY RESPONSE SERVICES

Comments express general concern regarding the demand for and provision of fire protection and emergency response services associated with the proposed project or variant. Comments assert that the proposed project or variant, which would include high-rise structures and increased residential density, would be served by a single fire station, and the project area has no currently planned access to the Auxiliary Water Supply System (AWSS). Comments request that these issues be analyzed and potentially mitigated with additional staffing and specialized equipment.

In response to these comments, initial study Section E.13, Public Services (see draft EIR Appendix B), addresses impacts related to the provision of fire protection and emergency response services associated with the proposed project or variant (see pp. 63 to 64). As discussed in the initial study under Impact PS-1, the increased demand for fire protection and emergency response services associated with the proposed project or variant would be incremental, would be funded largely through project-related increases to the city's tax base, and would not be substantial given the overall demand for such services on a citywide basis. As further discussed under Impact PS-1, fire protection and medical emergency resources are regularly reassessed based on need in order to maintain acceptable service performance standards. The fire department and building department review building plans to ensure that proposed buildings comply with the latest California Building Code requirements for fire and life safety measures as specified in the San Francisco Fire Code, including measures related to emergency access and egress. Such review also includes evaluating the project site's circulation to ensure that emergency access and egress to adjacent sites are not affected. As discussed under Impact PS-1 in the initial study, the proposed project or variant would be required to comply with all applicable building and fire codes. For these reasons, implementation of the proposed project or variant would not require the construction of new or physically altered fire protection facilities; therefore, the impact is identified as less than significant, and no mitigation measures are required.

In response to comments, as discussed in draft EIR Section 3.G, Utilities and Service Systems, p. 3.G-14, the proposed project or variant would connect proposed low-pressure water distribution pipelines to existing water transmission and distribution pipelines in Winston Drive, 19th Avenue, and Eucalyptus Drive/20th Avenue. As discussed in draft EIR Section 3.G, fire flow was simulated using a model based in part on field flow tests conducted by the fire department to assess whether the proposed project or variant's system would meet industry and SFPUC standard for flow and pressure. As stated on draft EIR p. 3.G-14, fire flow demands would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch. In addition, as presented in Chapter 2 of this RTC, the revised variant would include more residential units, fewer non-retail sales and service, and no hotel use. The updated analysis related to the revised variant is provided in Section 2.E.7, Utilities and Service Systems, of this RTC. The proposed project or draft EIR variant, and revised variant would not require new or expanded low-pressure water system infrastructure.

As discussed in initial study Section E.13, Public Services, p. 64, the proposed project or variant would be required to comply with all applicable building and fire code requirements, which identify specific fire protection systems, including but not limited to the provision of state-mandated smoke alarms, fire alarm and sprinkler systems, fire extinguishers, required number and location of egress points with appropriate distance separation, and emergency response notification systems. The maximum height of most proposed buildings would be 90 to 190 feet and, for the purposes of fire protection, these buildings would be classified as high-rise buildings. As required by the fire code, buildings on these parcels would have two sources of firefighting water supply: street mains and onsite water tanks. As described on initial study p. 64 (see draft

EIR Appendix B), nine new fire hydrants would be located around the project site, connected to the low-pressure water system, and could connect to non-potable water storage tanks associated with either a centralized treatment plant or decentralized treatment facilities located within certain buildings or phases that would be constructed as part of the proposed project or variant. Regarding access to the EFWS and expediting future extension of these systems in the project vicinity, the SFPUC maintains the city's EFWS, and any future expansion would be compatible with the proposed project or variant. Consequently, implementation of the proposed project or variant would not require the construction of new or physically altered fire protection facilities; therefore, the impact is identified as less than significant, and no mitigation measures are required.

Also refer to Response UT-2, p. 4-71, regarding the EFWS.

CUMULATIVE DEMAND FOR PUBLIC SERVICES

In response to comments, initial study Section E.13, Public Services (see draft EIR Appendix B, p. 68), discusses the proposed project or variant's cumulative impacts related to public services. As discussed under Impact C-PS-1, cumulative development in the project vicinity (including long-term SFSU planning) would result in an intensification of land uses and a cumulative increase in the demand for fire protection, police protection, school services, and other public services. The fire and police departments, the school district, the libraries, and other City agencies respond to growth and other changing service needs through ongoing analysis of applicable metrics, such as staffing, capacity, response times, and call volumes. As a result, projected future development would not result in any service gap in citywide police, fire, emergency medical services, or other public services. For these reasons, the proposed project or variant would not combine with cumulative projects in the project vicinity to create a significant cumulative impact on public services. Therefore, this impact is identified as less than significant, and no mitigation measures are required.

4.P.2 Comment PS-2: Impacts on School Facilities

This response addresses the following comment, which is quoted below:

I-Chou-2

"The proposed building is also next to Saint Stephen Church and School. This quiet community will be impacted in many ways (to be addressed in the EIR in-depth). Saint Stephen School children will not receive the same quality of school environment/life/education as my children received from there as a dense neighborhood brings many adverse impacts to a safe environment." *(Su-Syin Chou, P.E., Letter, 2/12/2023 [I-Chou-2, PS-2])*

RESPONSE PS-2

The commenter expresses concern regarding potential impacts of the proposed project or variant on St. Stephen's Church and School and potential adverse effects on the "quality of school environment/life/education." The comment requests that the impacts on St. Stephen School be addressed "in-depth" in the EIR.

Potential impacts of the proposed project or variant on schools are discussed in initial study Section E.13, Public Services (see draft EIR Appendix B, pp. 66–67), in accordance with the requirements of CEQA. As discussed in the initial study and Response PS-1, p. 4-105, CEQA's treatment of public services impacts is narrowly defined to include only those impacts that would arise from the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental effects. The scope of the public services analysis is limited by definition to services that are publicly funded. St. Stephen Catholic School is a private PreK-8th grade school.

However, secondary impacts of the proposed project or variant on the St. Stephen Catholic Church and School are considered throughout the draft EIR. St. Stephen Catholic School is included as a "sensitive receptor" in draft EIR Section 3.D, Air Quality (see Figure 3.D-1 on p. 3.D-14) and as a "noise-sensitive receptor" in draft EIR Section 3.C, Noise and Vibration (see Figure 3.C-1 on p. 3.C-7). Impacts related to hazardous materials, substances, or waste in proximity to schools are also analyzed in the initial study Section E.17, Hazards and Hazardous Materials (see draft EIR Appendix B).

4.Q Biological Resources [BI]

4.Q.1 Comment BI-1: Biological Resources Impacts

This response addresses the following comments, which are quoted below:

I-Hardeman-3

I-Hardeman-6

- "The park and the adjoining open space includes an ecosystem for many species of birds, including songbirds, hawks, owls, and crows, as well as a pack of coyotes. The EIR does NOT address the impact of the project on this ecosystem." *(Donald Hardeman, Letter, 2/7/2023 [IHardeman3, BI1])*

"**2) THE EIR DOES NOT ADDRESS THE INTENTIONS OF THE DEVELOPER WITH RESPECT TO THE OPEN SPACE TO THE WEST OF THE FENCE LINE**

This open space, which extends from Winston Drive to Rolph Nicol park, serves as a continuation of the biodiversity and animal habitat of the park. How many trees will be cut down by the private developer? What is the impact of the development on this space? The EIR Is silent, and therefore inadequate." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-6, BI-1])*

RESPONSE BI-1

The comments assert that the draft EIR does not adequately address impacts of the proposed project or variant on birds and other animal species, trees, and open space in and in proximity to Rolph Nicol Jr. Playground, which is adjacent to the northwest corner of the project site. A comment also asks how many trees would be removed as part of the proposed project or variant.

In response to comments, Section E.14, Biological Resources, pp. 68 through 72, in the initial study (included as draft EIR Appendix B) adequately evaluates potential impacts on sensitive species and their habitats within and in the vicinity of the project site in accordance with CEQA and applicable federal, state, and local regulations pertaining to biological resources. The analysis determines that compliance with existing federal, state, and local regulations would ensure that construction and operation of the proposed project or variant would have less-than-significant impacts related to sensitive species or their habitats, and that no mitigation measures are required. The comments do not provide evidence to support claims that the draft EIR does not adequately address impacts related to biological resources, including impacts in and in proximity to Rolph Nicol Jr. Playground outside of the project site. With regard to tree removal, as discussed under Impact BI-3 of the initial study, pp. 71 to 72, while there are no landmark trees on the project site, the proposed project or variant would require removal of trees planted throughout the site and around the perimeter of the parking lots and structures proposed for demolition. The project sponsor would be required to submit a tree removal permit application for the removal and replacement of any protected trees to public works for review and approval, prior to issuance of a building permit. As discussed under Impact BI-3, the proposed project or variant would also comply with San Francisco Public Works code section 806(d)(2) requirements for street trees by replacing any street trees removed for construction. Thus, the proposed project or variant would not conflict with the city's local tree ordinance, and this impact is identified as less than significant, and no mitigation measures are required.

4.R Geology and Soils [GE]

4.R.1 Comment GE-1: Geology and Soils Impacts

This response addresses the following comments, which are quoted below:

I-Herlihy1-8

I-Naraghi-8

I-Parthasarathy-9

"8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-8, GE-1])*

"8) The geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of an unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-8, GE-1])*

"8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-9, GE-1])*

RESPONSE GE-1

Comments express concern regarding the potential for unstable soils at the project site, specifically, the presence of a "canyon" that was reportedly filled in with construction debris and trash and is believed to be an "unstable" landfill. The comments request that the EIR analyze the geology, soil composition, support for new buildings, and the risk of potential liquefaction, and how to reduce these hazards.

In response to comments, the draft EIR acknowledges that prior to the existing development, the project site had an east-to-west stream channel; this former stream channel is presumed to be the feature that the commenters refer to as a "canyon" or "landfill" (see draft EIR Appendix B, Initial Study, Section E.15, Geology and Soils, p. 74). This former channel was filled with up to 51 feet of non-engineered fill, consisting of silty sand with layers of clayey gravel, silty gravel, and gravelly clay. In addition, wood debris, rootlets, rock fragments, and other non-engineered material were encountered in isolated exploration locations in the former stream channel. The non-engineered fill is underlain by the Colma Formation to at least 120 feet below the ground surface, which consists of sand with varying amounts of silt fines.

The draft EIR acknowledges that the non-engineered fill would need to be addressed to prevent adverse impacts from unstable soils. As discussed in draft EIR Appendix B, Initial Study, Section E.15, Geology and Soils, under Impact GE-1 (pp. 76–80), GE-3 (pp. 81–82), and GE-4 (p. 83), the mandatory provisions of the California Building Code, state Seismic Hazards Mapping Act of 1990, and San Francisco Building Code would require that the site-specific geotechnical reports be prepared for the proposed project or variant to address the potential for unstable soils (e.g., liquefaction, lateral spreading, settlement, expansive soils). The building codes provide specifications for determining the potential for unstable soils and related hazards and assessing the potential consequences. Measures to address the effects of unstable soils must be recommended in the site-specific geotechnical reports and incorporated into the conditions of permit(s) issued for the site. Such measures must address the appropriate foundation type and depths and selection of the appropriate structural systems to accommodate anticipated ground conditions, and the foundation and structural design for buildings on the project site would be based on stabilized conditions. For this reason, impacts related to unstable soils and liquefaction are identified as less than significant and are adequately addressed in the draft EIR.

4.S Hazards and Hazardous Materials [HZ]

4.S.1 Comment HZ-1: Increase in Exposure to Hazardous Materials

This response addresses the following comments, which are quoted below:

I-Chang-6

I-DeBaun-8

I-Herlihy1-9

I-Naraghi-9

I-Parthasarathy-10

I-Schneider-1

"(6) Increase the risks posed by demolition of existing buildings for hazardous materials, directly affect our health for the existing local residents" *(Mary Chang, Letter, 2/7/2023 [I-Chang-6, UT-2])*

"7. Section E.17: What steps have been taken to evaluate the health and safety impacts of demolition of existing buildings?" *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-8, HA-1])*

"9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-9, HZ-1])*

"9) The risks posed by demolition of existing buildings for hazardous materials. The Petco site was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-9, HZ-1])*

"9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-10, HZ-1])*

"St Stevens church attempted to develop the land behind the Cinemas- 40 Years ago it was determined to be toxic and landfill that would not support tall buildings. Please research and respond." *(William Schneider, Letter, 2/8/2023 [I-Schneider-1, HZ-1])*

RESPONSE HZ-1

Comments express concerns regarding hazardous materials risks posed by the demolition of existing buildings and the risks from previous land uses that released contaminants in the soil.

Comments also allege that hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen Catholic School. The comments provide no substantial evidence to describe the condition or verify the allegation.

A comment expresses concern regarding whether the site can support "tall buildings." This portion of the comment is addressed above under Response GE-1.

Regarding the potential to encounter hazardous materials during building demolition and excavation for foundations, the draft EIR acknowledges that portions of some of the existing structures may contain hazardous building materials (see draft EIR Appendix B, Initial Study, Section E.17, Hazards and Hazardous Materials, subsection Historical and Current Land Uses, pp. 94). Based on the age of some of the buildings, hazardous building materials, such as asbestos-containing materials, lead-based paint, electrical transformers or hydraulic lifts containing PCBs, fluorescent light ballasts containing PCBs or bis (2-ethylhexyl) phthalate, and fluorescent light tubes containing mercury vapors may be present. In addition, the draft EIR acknowledges that certain portions of the project site may have residual levels of contaminants from previous land uses (e.g., a former dry cleaner and a former gasoline service station).

The draft EIR acknowledges that the removal of hazardous building materials and the potential to encounter contaminated soil would need to be addressed to prevent adverse impacts on construction workers, the public, and the environment. As discussed in draft EIR Appendix B, Initial Study, Section E.17, Hazard and Hazardous Materials, Impact HZ-2 (pp. 99–101), a site mitigation plan and a demolition and construction dust control plan must be prepared in compliance with Articles 22A and 22B of the San Francisco Health Code for review and approval by the San Francisco Department of Public Health, Environmental Health Branch, prior to demolition and construction. The construction dust control plan would include best management practices to reduce dust during construction, such as limiting travel on unpaved areas; wetting and tarping solid bulk material for offsite transport; and paving main access points to the project site. The site mitigation plan would describe known and potential environmental conditions, including the potential to encounter residual contamination from previous land uses and previous spill cleanup sites. The plan would include soil, groundwater, and stormwater management protocols such as sampling and proper disposal of any hazardous waste encountered during excavation. Implementation of a site mitigation plan would reduce any potential impacts prior to or during construction of the proposed project or variant to a less-than-significant level. Compliance with the plans would ensure that implementation of the proposed project or variant would not create a significant hazard to construction workers, the public, or the environment through reasonably foreseeable conditions involving the release of hazardous materials. For these reasons, impacts related to hazards and hazardous materials are identified as less than significant and are adequately addressed in the draft EIR.

4.T General Comments(CEQA) [GC-CEQA]

The comments and corresponding responses in this section cover the general issues related to CEQA. The comment topics relate to:

- GC-CEQA-1: Support for the Proposed Project and EIR
- GC-CEQA-2: Public Outreach
- GC-CEQA-3: NOP Noticing, Scoping, Public Review of EIR, and Administrative Record
- GC-CEQA-4: Draft EIR is Inadequate
- GC-CEQA-5: Use of Initial Study to Focus EIR

4.T.1 Comment GC-CEQA-1: Support for the Proposed Project and EIR

This response addresses the following comments, which are quoted below:

A-HPC-4

A-CPC-Moore-4

A-CPC-Tanner-2

I-Aslanian-Williams-1

I-CLee-1

I-Finnegan-1

I-Hardesty-1

I-Hong-1

I-Hong-3

I-Howe-1

I-Maldonado-1

I-Marzo-1

I-Muñoz-1

I-Riley-1

I-Seratti-1

I-Tsakalakis-1

O-HAC-1

O-NorthernNeighbors-1

O-SierraClub-1

- "Commissioner Foley expressed support for the proposed project and expressed the need for the City to construct housing." *(Historic Preservation Commission, Letter, 2/7/2023 [A-HPC-4, GC-CEQA-1])*

"Those are my comments. Otherwise, I believe that the -- what's in front of us is very thorough and goes into all of the aspects that we need to consider." *(Kathrin Moore, Vice President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Moore-4, GC-CEQA-1])*

"But I just again want to thank the staff for their great work and again for the project sponsor for bringing it forward. We're very, very excited about this and really just want to commend a very transformative proposal that both keeps the mall and brings it into -- really a whole new part of this neighborhood into being.

So we're very excited and thank, again, staff and for members of the public, again, calling in." *(Rachael Tanner, President, San Francisco Planning Commission, Public Hearing, 2/9/2023 [A-CPC-Tanner-2, GC-CEQA-1])*

"And the only thing I came to say today is that this Draft EIR and the company has definitely presented itself to the community. They've been to West of Twin Peaks meetings a few times and presented the project. And I think that this Draft EIR is complete and should be approved.

There are questions and requests that we have, and we have sent a letter to that effect by the chair of our land use committee. So there are things to be answered, such as the infrastructure, mix of housing, et cetera. But as far as this Draft EIR, it should be approved." *(Dena Aslanian-Williams, Public Hearing, 2/9/2023 [I-Aslanian-Williams-1, GC-CEQA-1])*

"I am in support of the Stonestown Project and hope that it moves forward with the maximum amount of units and hope that the Planning Commission takes the necessary steps to move forward with the -- what's that? -- the EIR.

I spent my time going to the high school there on Eucalyptus, so I spent a lot of time walking back and forth between Stonestown and the high school. The space towards the -- toward [unintelligible] high school and the Ralph Nicol Park, they're unactivated space. When I was a student there, me and my friend, we've been mugged through that -- in that area because it's a very quiet area. So the intimacy [unintelligible] all residents and has a more accurate space. I think it's a great use of the [unintelligible] as of right now." *(Chen Young Lee, Public Hearing, 2/9/2023 [I-CLee-1, GC-CEQA-1])*

"Though my interpretation of the EIR is elementary, I endorse the draft EIR and am in support of the project offering much-needed additional housing. I believe that a project like this is perfect for all the current open and underutilized space and will attract more business and commerce to the west side of the City." *(Lynn Finnegan, Letter, 2/9/2023 [I-Finnegan-1, GC-CEQA-1])*

"I believe I'm calling in support for the Draft EIR. I've participated, over the last the several years, in community outreach efforts by the sponsor, and I've looked at these plans. I believe this is a really smart use of this land and a good place to build significant housing which we desperately need.

I'd like to encourage the Commission to take the next steps to approve -- or take -- approve the draft EIR and move forward in the next steps to having this development realized." *(Tara Hardesty, Public Hearing, 2/9/2023 [I-Hardesty-1, GC-CEQA-1])*

"Thank you for the opportunity to comment and support this Wonderful Project – the Stonestown Development project. I have been commenting on this Project's DEIR etc since February 4, 2021 both with the sponsors/workshops and the SF Planning Department. I'm a San Francisco native with 78+ years. I currently live in District 7 as a resident and home owner. I have been shopping here since the early 60's when it was an open mall. Currently, it is still a very unique mall, professionally maintained with many special and unique shops. Which in my opinion shows the credibility of the sponsors ability to maintain such a project. Because I use public transportation since I ditched my car it still meets and exceeds my shopping requirements. With the exception for the fog (Karl), the plan professionally address everything a mall should be including the additional 2,930 residential units on the west side of the city. Which will add to the 'SF Housing Element Plan.'

At this time I would like your support and approval for this phase. And to include my comments to the RTC phase.

OK, on to the next phase, my comments to the DEIR for the RTC due by February 13, 2023.

If anyone has any comments to my opinion/Email here please feel free to let me know.

A lot of the success to this project to date is due to the continued onsite work shops and the community out reach done to date." *(Dennis Hong, Letter, 2/6/2023 [I-Hong-1, GC-CEQA-1])*

"I also believe that this projects number of housing units will certainly help the SF Housing Element pan out nicely. I would also like to encourage that that project be expedited both in the process and the permit process as allowed." *(Dennis Hong, Letter, 2/6/2023 [I-Hong-3, GC-CEQA-1])*

"As a lifelong resident of San Francisco (age 69) and a near neighbor (Ingleside Terraces), I whole-heartedly support the plans submitted for changes to Stonestown. I believe it will be a positive change. The addition of housing, lodging, open space, improved traffic patterns and the temporary jobs that construction will bring are all things needed in this western part of the city. Yes, there will be some disruptions, but the positives outweigh the negatives. This is progress." *(Donna Keuper Howe, Letter, 1/14/2023 [I-Howe-1, GC-CEQA-1])*

"I'm calling in support of Stonestown Development EIR. This is -- the EIR is missing things like prospected environmental benefits instead of the short-term project environmental impact. This project provides sustainable alternatives for biking from Ingleside's Holloway Street through SF campus -- which I've done before, even walking through it -- to Stonestown beneath an Irish sunset. And it's pretty safe; right?

Moreover, this opportunity provides in-filling of housing space at affordable market rates to keep and grow the diversity of Ingleside, where Blacks were displaced before. And some callers against EIR approval are familiar with such history in the past.

This multi-development narrowly promotes SFMT ridership with the M-Line as well, buses, and even walking within the new 15-minute walkable neighborhood as well. Plus it's a multi-use neighborhood.

Please consider the future positive environmental impacts this project has going forward with this already satisfactory EIR document." *(Roland Maldonado, Public Hearing, 2/9/2023 [I-Maldonado-1, GC-CEQA-1])*

"Good afternoon, everyone. I'm calling in strong support. This is Steve Marzo. I'm a resident in the Ingleside neighborhood right down the street of the Stonestown Development. I go to this mall all the time. I'm a, you know, a big fan of the mall, and I strongly believe that it should be used for more housing.

And looking at the EIR, it looks to be adequate for the purposes of environmental review. And, you know, let's get it done. Let's get this passed so we can get more housing in San Francisco because we need it.

Thank you so much for your time. Please pass the EIR." *(Steve Marzo, Public Hearing, 2/9/2023 [I-Marzo-1, GC-CEQA-1])*

"I'm calling in support of the Draft EIR for the Stonestown redevelopment, particularly because a mall like Stonestown was built during a time in which a lot of development was car-centric. And unfortunately, this created huge scars throughout the city where, you know, it's not walkable. You can't really feel comfortable there unless you're in a car. And I think this will correct the wrongs of the past by adding housing, by adding walkable spaces, by adding green spaces. And importantly, it's on a Muni Metro line, which will be great for people.

Oftentimes, the West side has quoted a lot of opportunity, like great parking, great schools and not enough housing for the people to be able to take advantage of that. So this development will right those wrongs as well. And I hope you will agree and pass -- and approve this EIR." *(Martin Muñoz., Public Hearing, 2/9/2023 [I-Muñoz-1, GC-CEQA-1])*

"I have been keeping informed on the plans for the Stonestown Development Project for several years. The purpose of this message is to share my concerns with you.

I am not opposed to expanding the property to include housing and additional commercial and open space. I also applaud Brookfield Properties for keeping their neighbors informed as the project has evolved."
(Christine Riley, Letter, 2/13/2023 [I-Riley-1, GC-CEQA-1])

"And I can't tell you how excited I am to see something like this in our area that's so close. We lack housing, as everybody knows, in this city, and the -- so I'm absolutely thrilled with this proposal, and I -- for many

reasons: the housing, the walkable space, the proximity to San Francisco State. How fortunate for these college students to be so close to a proposed living and mixed-usage space as this one.

So I absolutely ask you to move forward to approve this EIR as it is. And I think it's a wonderful, wonderful contribution to our area. Thank you so much. And this'll make the west side so much more exciting and livable than it is right now." *(Karen Seratti, Public Hearing, 2/9/2023 [I-Seratti-1, GC-CEQA-1])*

"Firstly, I would like to say that I wholeheartedly support the Stonestown project. It will be a massive improvement to our neighborhood. In particular, the project will:

1. **Continue bringing Stonestown retail into this century**, building on the progress already made with the new anchor tenants (Whole Foods, Cinema, Sports Basement, and Target).
2. **Add a much-needed hotel to the west side** of San Francisco within easy reach of the airport and freeways. Currently people are forced to stay downtown or on the Peninsula.
3. **Add much-needed homes**. While there may be 61,000 empty homes in San Francisco today (due to an apparent supply-demand-price mismatch, source: kron4.com article), the only solution long-term to revive our small landlocked city is building up with higher density. I would like to see the maximum number of homes.
4. **Add more green space while adding parking spaces**. Today, the acres of above ground parking are an eyesore and throwback to a bygone era." *(Kath Tsakalakis, Letter, 12/23/2022 [I-Tsakalakis-1, GC-CEQA-1])*

"I'd like to first commend the interpretation team, the Planning Commission and the Planning staff for your flexibility earlier in this hearing.

I am here to offer support for the Stonestown Development Project and believe that the Draft EIR is sufficient and hope that the project moves forward with the maximum number of housing units that would not require an EIR re-submittal.

Our project review committee endorsed this project back in December of 2022 and gave especially high marks to the land use and density of the project. We are tremendously excited to see this innovative project revitalize the area and ask that the Commission move forward in approving this EIR at its earliest convenience." *(Jake Price, Housing Action Coalition, Public Hearing, 2/9/2023 [O-HAC-1, GC-CEQA-1])*

"And I'm calling in in support of this Stonestown Development draft EIR. The, you know, EIR is adequate and comprehensive. Let's not be -- let perfect be the enemy, you know, of the good here.

I think one of biggest issues in housing in San Francisco is that things get delayed over and over again and that the process takes forever. So let's make good progress here in the process, not delay it further, and approve the Draft EIR." *(Jonathan Bunemann, Public Hearing, 2/9/2023 [O-NorthernNeighbors-1, GC-CEQA-1])*

"Thank you for the opportunity to comment on the subject SEIR. The Sierra Club appreciates your electronic publishing of the DEIR to save paper, printing and mailing cost.

The subject document has over 600 pages that attempt to deal with prospective environmental failures. Thankfully, the Stonestown project, of dense housing near good transit is inherently a benefit to the environment by providing residents with thermally efficient housing and a more economic life of less driving. The Sierra Club has reviewed the subject Draft EIR and we have a few suggestions to improve the final EIR and make the ultimate project more even beneficial to the environment:" *(Howard Strassner, Member SF Group Executive Committee, Sierra Club, Letter, 1/27, 2023 [O-SierraClub-1, GC-CEQA-1])*

RESPONSE GC-CEQA-1

The comments express support for the proposed project or variant based on its merits, support for the need for housing in San Francisco, support of the proposed land uses, and/or support of the draft EIR.

These comments, in and of themselves, do not raise specific environmental issues about the adequacy or accuracy of the draft EIR's coverage of physical environmental impacts that require a response in this RTC document under CEQA Guidelines section 15088. Although general support of the proposed project or variant does not raise specific issues concerning the adequacy or accuracy of the draft EIR under CEQA, such comments, including recommendations for modifications to the project, may be considered and weighed by the decision-makers prior to rendering a final decision to approve, modify, or disapprove the proposed project or variant. This consideration is carried out independent of the environmental review process.

4.T.2 Comment GC-CEQA-2: Public Outreach

This response addresses the following comments, which are quoted below:

I-Arbulu-2

I-Boken-1

"It does not appear that the impact on our neighborhood has been adequately addressed. No one from the developer ever approached us for our input. They held open houses to say WHAT they were going to do— not for suggestions. Then in the final plan they changed the scope of Phase 1 with even bigger and taller buildings. The people they list as supporters do not live in the neighborhood. Of course they will support it because they will reap the benefits of visiting a massive new mall and then going home to their neighborhoods and leaving the noise and traffic to those who actually live here!" *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-2, GC-CEQA-2])*

"When this item was on the agenda for the February 2nd meeting, I was caught off guard for a number of different reasons. I've been following this project since pre-pandemic years, both attending in-person events and virtual meetings. Each of these involved only project sponsors and their consultants. Planning staff was never included. There is a community steering committee, but it's only by invitation.

The PIM website still lists Xinyu Liang as the assigned planner even though the department staff directory lists her as a current planner for District 6. The PIM website also states that the shadow study was placed on hold on September 7th of last year." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-1, GC-CEQA-2])*

RESPONSE GC-CEQA-2

The comments relate to public outreach and information related to the proposed project or variant.

A comment states that impacts of the proposed project or variant on the Merced Manor neighborhood are not adequately addressed in the draft EIR, that residents of the Merced Manor neighborhood were not offered the opportunity to provide input on the proposed project or variant, and that the proposed project or variant includes larger and taller buildings than previously identified. In response to this comment, the draft EIR accurately describes the proposed project or variant, and the environmental effects of the proposed project or variant are identified and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study (included as Appendix B to the draft EIR). The comment includes no specific issues or evidence to support the claim that impacts of the proposed project or variant on the Merced Manor neighborhood are not adequately addressed in the draft EIR.

The commenter's statement that residents of the Merced Manor neighborhood were not offered the opportunity to provide input on the proposed project or variant is also not supported. As presented in Section 1.B, Environmental Review Process, of this RTC document, the scoping, noticing, and public and agency review process for the EIR has been conducted in accordance with CEQA requirements. The planning department published a notice of preparation (NOP) of the draft EIR on April 27, 2022 (included as Appendix A in the draft EIR), to inform agencies and the general public that the draft EIR would be prepared. A notice of availability (NOA) of the NOP and the NOP were sent to the State Clearinghouse, governmental agencies, organizations, persons who may have an interest in the proposed project, and to owners and occupants within 300 feet of the project site. The NOP announcement was also placed in a newspaper of general circulation in the project area. An NOP scoping meeting was held remotely on May 9, 2022, to explain the environmental review process for the proposed project and variant and to provide an opportunity to take public comment and concerns related to the proposed project or variant's environmental issues. In accordance with CEQA, the draft EIR was circulated for a 60-day public review and comment period, starting on December 15, 2022, and ending on February 13, 2023. Members of the public were given ample time to review and comment on the draft EIR in accordance with CEQA requirements. This comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

A comment expresses concerns regarding public meetings and online information related to the proposed project or variant. The comment asserts that planning department staff were not in attendance at public meetings regarding the proposed project or variant. The comment also asserts that the San Francisco Property Information Map (PIM) website does not accurately identify the assigned planner for the proposed project or variant. The comment also asserts that the PIM website identifies that the shadow study for the proposed project was placed on hold. In response to this comment, as presented in Section 1.B,

Environmental Review Process, of this document, the scoping, noticing, and public and agency review process for the EIR has been conducted in accordance with CEQA requirements. Planning staff have been present in all public meetings for the proposed project or variant that have been conducted pursuant to CEQA requirements. With regard to the accuracy of information for the proposed project or variant on the PIM website, the PIM website shows the correct assigned planner for environmental review under 2021-012028ENV. It is unclear which planning application the commenter is referring to and where it has been indicated that the shadow study for the proposed project or variant was placed on hold. The shadow study prepared for the draft EIR is uploaded as part of the project file identified above under "related documents" on the PIM website and was included as Appendix H to the draft EIR. This comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.T.3 Comment GC-CEQA-3: NOP Noticing, Scoping, Public Review of EIR, and Administrative Record

This response addresses the following comments, which are quoted below:

I-Boken-2

I-Chou-3

I-Conroy1-1

I-Full-2

I-Lee-3

O-ITHA-7

O-SPEAK-3

O-WTPCC-7

"During the walking tour last year, the consultant stated that the UA cinema would be demolished. Navy report subsequently stated that the cinema had been -- had come before the Historic Preservation Commission, and even the HPC was not listed on the project website as a milestone.

That the public comment period for the Draft EIR started over the holidays on December 14th is a practice that the Department has been heavily criticized for in the past.

I would concur with the commissioner's comments from the February 2nd meeting on how this is late to come before the Commission, as half of the plans and half of the community benefits have already been completed." *(Eileen Boken, Public Hearing, 2/9/2023 [I-Boken-2, GC-CEQA-3])*

"As a professional Civil Engineer and over 30 years resident, I would like to request a copy of draft EIP for my review prior to its certification." *(Su-Syin Chou, P.E., Letter, 2/12/2023 [I-Chou-3, GC-CEQA-3])*

"1. I understood that the West of Twin Peaks Central Council (WTPCC) made written comments about the scope of the EIR before the deadline for public comment. However, I don't see any reference to comments by the WTPCC in the draft EIR. Were written comments received from the WTPCC?

2. The announcement of the availability of the Draft EIR for comment and the deadline for public comment, both in writing and at the hearing, is timed such that affected neighborhood organizations (that do not meet in December because of the holidays) are limited in their ability to discuss and develop responses to the Draft EIR before the February 13th deadline. How can this deadline be extended 30 days to permit considered responses?" *(Paul Conroy, Letter, 1/9/2023 [I-Conroy1-1, GC-CEQA-3])*

"General. Comments on the scope of the EIR were provided (see Appendix A). However, many of the comments were not addressed in the EIR and, in some cases, completely ignored. Why does the City and County of San Francisco offer the opportunity to provide scoping comments and then not acknowledge them or explain how those comments have been incorporated into the EIR? Merely printing the scoping comments may meet the requirements under the California Environmental Quality Act (CEQA), but it certainly is not within the spirit of engaging with the public regarding environmental concerns. The EIR fails to provide any information regarding how these comments were addressed." *(Dave Full, Letter, 2/12/2023 [I-Full-2, GC-CEQA-3])*

"I truly hope the city conducts surveys and research to make sure the neighbors will not be adversely affected by this project because that's the reason we moved to this neighborhood." *(Marie Lee, Letter, 2/9/2023 [I-Lee-3, GC-CEQA-3])*

- "**History:** We understand that in recognition of the potential impact of the original Stonestown Mall project on the surrounding neighborhoods, the original proposal was modified to protect the quality of life of these communities. We request that the EIR detail and examine the initial City approval process for Stonestown and the mitigating measures taken at that time and ensure that is maintained if still relevant to place this project in the proper historical context." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, 2/10/2023 [OITHA7, GC-CEQA-3])*

"SPEAK is strongly opposing the proposed application for SB7 (Atkins) streamlining. SB7 (Atkins) is a deeply flawed reauthorization of a previous bill." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-3, GC-CEQA-3])*

- "**History:** We understand that in recognition of the potential impact of the original Stonestown Mall project on the surrounding neighborhoods, the original proposal was modified to protect the quality of life of these communities. We request that the EIR detail and examine the initial City approval process for Stonestown and the mitigating measures taken at that time and ensure that is maintained if still relevant to place this project in the proper historical context." *(Mark V. Scardina, President, Ingleside Terraces Homes Association, Letter, no date [O-WTPCC-7, GC-CEQA-3])*

RESPONSE GC-CEQA-3

The comments relate to noticing, scoping, and public review of the EIR, and the administrative record.

Comments state that the noticing, and public and agency review process for the draft EIR was timed to occur during the holidays to hinder public review and comment. As presented in Section 1.B, Environmental Review Process, of this document, the scoping, noticing, and public and agency review process for the draft EIR has been conducted in accordance with CEQA requirements identified in CEQA Guidelines section 15087 and Chapter 31 of the San Francisco Administrative Code. As provided in CEQA Guidelines section 15105(a), the public review period for a draft EIR shall not be less than 30 days nor should it be more than 60 days except under unusual circumstances. Furthermore, as stated in CEQA section 21091, if a state agency is the lead agency, a responsible agency, or a trustee agency; if a state agency otherwise has jurisdiction by law with respect to the project; or if the proposed project is of sufficient statewide, regional, or areawide significance as determined pursuant to the guidelines certified and adopted pursuant to Section 21083, the review period shall be at least 45 days. The draft EIR was circulated for a 60-day public review and comment period, starting on December 15, 2022, and ending on February 13, 2023. The planning department provided the maximum number of days for public review. There are no restrictions in CEQA for when a draft EIR can be published within a calendar year, and agencies and members of the public were given ample time to review and comment on the draft EIR in accordance with CEQA requirements.

In response to a comment, all persons who commented on the draft EIR will receive a notification of the RTC document's availability for review prior to EIR certification. An electronic copy of the draft EIR and all related project CEQA documents are available for review or download on the planning department's "Environmental Review Documents" web page: https://sfplanning.org/environmental-review-documents.

A comment asks whether the West of Twin Peaks Central Council submitted written comments regarding the scope of the EIR. The City did not receive written comments on the scope of the EIR from any organizations or individuals identified as the West of Twin Peaks Central Council during the NOP public review period.

A comment states that many comments submitted on the scope of the EIR were not addressed in the draft EIR. In response to this comment, the draft EIR addresses all substantive and environmentally relevant written and oral comments received on the scope of the EIR. A summary of the NOP scoping comments that relate to environmental issues and the locations in the draft EIR and initial study where they are addressed and analyzed is provided in draft EIR Table 1-1, pp. 1-4 through 1-8. Specific responses to this commenter and revisions made in response to them are addressed under Response PD-1, Project Description, p. 4-5.

A comment suggests that portions of the proposed project or variant have been completed or are underway. A comment expresses a hope that the City conducts surveys and research to ensure that neighbors will not be adversely affected by the proposed project or variant. Comments request that the draft EIR discuss the initial City approval process for the proposed project or variant. In response to a comment, no aspect of proposed project or variant development has been implemented, as the project has not been approved. As described on draft EIR p. 1-2, an EIR is an informational document and is intended to inform the public and decision-makers about a project's environmental impacts and ways to reduce or avoid a project's potential environmental effects, and to identify alternatives to a project that can avoid or reduce impacts. It is not the purpose of an EIR to recommend approval or denial of a project. The required project approvals are listed on draft EIR pp. 2-47 through 2-50. None of the approvals can proceed until the final EIR is certified and after the decision-makers take an approval action on the proposed project or variant.

A comment expresses opposition to the proposed application for SB 7 (Atkins) streamlining. This comment is noted. However, as described in Chapter 5, Draft EIR Revisions, of this RTC document, the project sponsor has elected to not pursue certification of the proposed project or variant as an environmental leadership development project under SB 7.

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.T.4 Comment GC-CEQA-4: Draft EIR is Inadequate

This response addresses the following comments, which are quoted below:

I-Conroy2-1

I-Conroy2-8

I-Full-1

I-LG-7

I-Moore-1

"The Draft EIR does not adequately address several of the significant negative impacts that would be created by the proposed Stonestown Development Project.

The Draft EIR fails to meet the requirement that an EIR 'contain sufficient information to understand the project's environmental impacts. (Dry Creek Citizens Coalition v. County of Tulare (1999) 70Cal.App.4th 20, 28.) 'Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal … and weigh other alternatives in the balance.' (County of Inyo, supra, 71Cal.App.3d at pp.192-193.)' Save Our Capitol! Vs Department of General Services (Opinion Filed January 18, 2023; No. C096617, California Court of Appeal, 3rd Dist., p.12)

The Draft EIR does not adequately inform the public and public agency decision-makers with respect to several environmental impacts, as addressed by comments from affected neighborhood associations. The Draft EIR does not address many of the earlier public comments regarding the scope of the EIR, other than to note that the comments were made." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-1, GC-CEQA-4])*

"The Draft EIR does not adequately inform the public of many of the adverse environmental consequences of the project. The Final EIR should address all significant environmental effects of the project, including those described above." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-8, GC-CEQA-4])*

"Thank you for the opportunity to review the Stonestown Development Project EIR. Provided below are my comments on the EIR. I have organized the comments by page number to assist in understanding my

comments and concerns. In general, the EIR is internally inconsistent, confusing, and lacking in critical analysis needed to determine the impacts of the proposed project. It is unfortunate that a much-needed housing project in the City and County of San Francisco did not garner more attention and care in preparing the EIR." *(Dave Full, Letter, 2/12/2023 [I-Full-1, GC-CEQA-4])*

- "The Draft EIR is limited to a few selected topics, but for those of us who live in the surrounding neighborhoods there are additional issues deemed insignificant that will have a huge impact on our homes and families. These issues are deserving of further study and efforts to mitigate. In addition, building these huge projects without definite plans and funding in place to improve infrastructure, public transit and public services in the area will affect both current and future residents." *(LG, Letter, 2/13/2023 [ILG7, GC-CEQA-4])*

"I am writing to state my objections to the draft environmental impact report for the Stonestown Development Project. While it is a heavy lift for a lay person to synthesize the intricacies of the EIR, the gist of what is proposed is problematic for the following reasons.

The report itself is clear from the outset that 'the proposed project or variant would result in **significant and unavoidable** impacts in the following areas, **even with implementation of feasible mitigation measures**.' (Summary, p. S-2, emphasis added) These areas are Historic Architectural Resources, Transportation and Circulation, Noise, Air Quality and Wind. In essence, the quality of life—both for those currently living in the area and those who might move to the area—would decline as a result of this project." *(Andrew Moore, Letter, no date [I-Moore-1, GC-CEQA-4])*

RESPONSE GC-CEQA-4

The comments pertain to the adequacy of the draft EIR. Comments state that the draft EIR does not adequately address several significant impacts that would result from implementation of the proposed project or variant and does not address many of the public comments regarding the scope of the EIR. A comment states that the draft EIR is internally inconsistent and confusing and does not include sufficient analysis to determine the impacts of the proposed project or variant. A comment states that the draft EIR is limited to a few selected topics and does not address all relevant and applicable environmental topics and associated impacts. A comment further states that projects in the city are implemented without required planning and funding for infrastructure or services. The commenter is referred to Response UT-2, Utilities Infrastructure, p. 4-71; Response TR-3, Transit Impacts, p. 4-30; and Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105.

A comment expresses objection to the draft EIR and states that the significant and unavoidable impacts with mitigation would result in a decline in the quality of life for residents in the area. The commenter is correct that the proposed project or variant would result in significant and unavoidable impacts related to historic architectural resources, transportation and circulation, noise, air quality, and wind. As explained under Response GC-CEQA-3, NOP Noticing, Scoping, Public Review of EIR, and Administrative Record, p. 4-123, an EIR is an informational document. CEQA does not prohibit lead agencies from approving projects with significant and unavoidable impacts on the environment. Per CEQA Guidelines section 15043, a public

agency may approve a project that would cause a significant effect on the environment if the agency makes a fully informed and publicly disclosed decision and determines that (a) there is no feasible way to lessen or avoid the significant effect and (b) the specifically identified expected benefits from the project outweigh the policy of reducing or avoiding the significant environmental impacts of the project. The agency must set forth the reasons for its action in a statement of overriding considerations that is based on the final EIR or other information in the record (CEQA section 21081(b)).

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.T.5 Comment GC-CEQA-5: Use of Initial Study to Focus EIR

This response addresses the following comment, which is quoted below:

I-Pilpel-5

"5. The Draft EIR cites to unsupported conclusions in the Initial Study (IS). The IS is not a substitute or exemption for the analysis and mitigation requirements covering those conclusions, including conclusions of no impacts to 'land use and land use planning, population and housing, cultural resources …, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous material, energy resources …, and wildfire.' The Project will clearly have impacts on land use, population, housing, greenhouse gas emissions, energy resources, and wildfire, and those impacts must be analyzed in the EIR and mitigated." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-5, GC-CEQA-5])*

RESPONSE GC-CEQA-5

The comment asserts that significant impacts of the proposed project or variant were improperly excluded from analysis in the draft EIR analysis through the preparation of the initial study (included as Appendix B to the draft EIR). In response to this comment, consistent with the provisions of CEQA Guidelines section 15060, Preliminary Review, the initial study was prepared to focus the draft EIR on the effects of the proposed project or variant determined to be significant. The initial study is part of the draft EIR through its inclusion as Appendix B. The initial study provides thorough analysis, and was circulated with the draft EIR for public review and comment. The public was able to, and did, provide comments on the initial study. Responses to those comments are provided in this RTC document. This approach, recommended by the CEQA Guidelines, is standard practice and has been upheld by the courts.

4.T.6 Comment GC-CEQA-6: Caltrans Coordination and Permits

This response addresses the following comment, which is quoted below:

A-Caltrans-1

"**Project Coordination**

Please specify the design and construction schedule of the proposed project. Please coordinate this project with the following adjacent Caltrans projects:

- Project 04-0AA62: 19th Ave Pave Rehab, design to be completed in June 2024
- Project 04-4W490: Traffic Signal Replacement (locations are pending to be finalized), design to be completed in FY 2026/27

Encroachment Permit

The following project elements identified in the DEIR will need the Caltrans-issued encroachment permit:

- Figure 2-22: the road approach and road connection off the State Highway System for the new streets
- Figure 2-23: the new proposed water line within the limits of Caltrans' Right of Way (ROW)
- Figure 2-26: the new private sewer line within the limits of Caltrans' ROW
- Figure 3.B-4: the proposed sidewalks within the limits of Caltrans' ROW" *(Yunsheng Luo, Associate Transportation Planner, California Department of Transportation, Letter, 2/8/23 [A-Caltrans-1, GC- CEQA-6])*

RESPONSE GC-CEQA-6

The comment requests coordination of the proposed project design and construction schedule with Caltrans projects specified in the comment and identifies project elements depicted in draft EIR Figures 2-22, 2-23, 2-26, and 3.B-4 that would require a Caltrans-issued encroachment permit. The comment is acknowledged. The proposed project or variant would include the requested coordination of the project design and construction schedule with the identified Caltrans projects and coordination regarding the required encroachment permits. Also note that draft EIR Section 2.G, Required Project Approvals (see Section 2.G.1, State and Regional Agencies, California Department of Transportation, p. 2-47), identifies the Caltrans encroachment permit requirement.

4.U General Comments (Non-CEQA) [GC-NON-CEQA]

Several comments are general comments unrelated to CEQA or unrelated to the topics studied in the CEQA Guidelines Appendix G checklist. Some comments suggest adding additional information unrelated to environmental impact analysis. Others are general concerns regarding the proposed project and variant or the analysis in the draft EIR but do not identify any particular deficiencies in the analysis or conclusions in the draft EIR regarding the physical environmental impacts of the proposed project or variant. Other comments are introductory in nature or do not present specific issues related to the proposed project or variant in the draft EIR.

The comment topics relate to:

- GC-NON-CEQA-1: Uses for the Project and Variant
- GC-NON-CEQA-2: Affordable Housing
- GC-NON-CEQA-3: Sustainability Plan
- GC-NON-CEQA-4: Building Heights
- GC-NON-CEQA-5: Non-CEQA Transportation Impacts
- GC-NON-CEQA-6: Effects from Other Projects
- GC-NON-CEQA-7: Opposition to the Proposed Project
- GC-NON-CEQA-8: Design of the Proposed Project
- GC-NON-CEQA-9: San Francisco Designation as Urban Heat Island
- GC-NON-CEQA-10: ParkMerced Ownership
- GC-NON-CEQA-11: Economic Feasibility and Workforce Considerations

4.U.1 Comment GC-NON-CEQA-1: Uses for the Project and Variant

This response addresses the following comments, which are quoted below:

I-Herlihy2-2

I-Herlihy3-2

O-SPEAK-1

O-SPEAK-2

"The proposed 18 story, 200 room hotel is inconsistent with the proposed mixed use residential and commercial nature of the project and should be eliminated from the project. San Francisco has an oversupply of hotel rooms as it is." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-2, GC-NON-CEQA-1])*

"I realize my time is up. Simply would like to close by saying that the proposed 18-story, 200-room hotel is inconsistent with their goal of mixed residential and commercial." *(James P. Herlihy, Public Hearing, 2/9/2023 [I-Herlihy3-2, GC-NON-CEQA-1])*

"The project proposal includes a 200 room hotel. The Westside is not a tourist or business destination. The hotel should be reassigned to housing.

The project proposal includes office space. The Westside is not a business destination. Also, there is a high commercial vacancy rate in the downtown core. The office space should be reassigned to housing." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-1, GC-NON-CEQA-1])*

"The project proposal includes an increase in retail space. With increases in online retail, this increase should be eliminated.

HEIGHT

The tallest structure in the proposed project is eighteen (18) storeys. The tallest structure in the SFSU student housing site is ten (10) storeys. The tallest structure in ParkMerced is fourteen (14) storeys but at a lower geographic elevation.

SPEAK is advocating for the tallest structure in the Stonestown project to be ten (10) storeys mirroring the adjacent structures in SFFU student housing." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-2, GC-NON-CEQA-1])*

RESPONSE GC-NON-CEQA-1

Comments relate to the overall development program and land uses proposed for the project and variant. One comment expresses an opinion that the proposed hotel use is inconsistent with the mixed residential and commercial uses. Another comment states that the west side of the city is not a tourist or business destination and therefore the proposed hotel and office space should be reassigned to housing and that the retail component should be eliminated due to the increase in online retail. The aforementioned comment also advocates for a maximum building height of 10 stories, similar to adjacent San Francisco State University (SFSU) housing structures. These comments do not raise significant environmental issues or allege inadequacies with the draft EIR. Potential environmental impacts from the proposed development, including building heights, are adequately analyzed in the draft EIR. The revised variant presented in Chapter 2 of this RTC document does not include the hotel. These comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.U.2 Comment GC-NON-CEQA-2: Affordable Housing

This response addresses the following comments, which are quoted below:

O-SierraClub-2

"1) Because of San Francisco's great need of additional affordable housing the Study should have included a statement about how many additional affordable units, of what kind, would be provided if an outside source of funding, of how much, was available." *(Howard Strassner, Member SF Group Executive Committee, Sierra Club, Letter, 1/27, 2023 [O-SierraClub-2, GC-NON-CEQA-2])*

RESPONSE GC-NON-CEQA-2

A comment states that the initial study should have included how many and what kind of affordable units would be provided, and if an outside source of funding is available. The inclusion of affordable units is not an environmental issue required to be analyzed under CEQA, and the amount of affordable housing included in

a project does not affect the analysis of environmental impacts. The project sponsor's commitment to the amount, type, and funding of affordable housing developed as part of the proposed project or variant would be part of the development agreement between the City and the project sponsor. The development agreement is one of the proposed project approvals. The development agreement requires approval by the board of supervisors, following recommendations for approval by the planning commission. Pursuant to the requirements of San Francisco Administrative Code chapter 56, the proposed development agreement is subject to noticing requirements and will be made available for public review prior to presentation to the planning commission for its consideration and recommendation to the board of supervisors per standard City procedures.

4.U.3 Comment CG-NON-CEQA-3: Sustainability Plan

This response addresses the following comment, which is quoted below:

I-Full-8

"Page 2-40, Section 2.D.10. Why is the sustainability plan not available for review? Could there be any impacts associated with the implementation of the sustainability plan? Without providing any information regarding the sustainability plan, it is not possible to provide any comments regarding potential impacts resulting from the implementation of the sustainability plan." *(Dave Full, Letter, 2/12/2023 [I-Full-8, GC-NON-CEQA-3])*

RESPONSE GC-NON-CEQA-3

The comment asks why the sustainability plan for the proposed project or variant is not available for review and whether there could be impacts associated with implementation of the sustainability plan.

In response to this comment, as stated in draft EIR Section 2.D.10, p. 2-40, the sustainability plan would be prepared to outline performance and monitoring criteria for operation of the proposed project or variant. The sustainability plan would describe how the proposed project or variant would achieve its required adherence to the state's Title 24 and San Francisco Green Building Code requirements for energy efficiency, renewable energy, and solar and living roofs. How the proposed project or variant would comply with Title 24 and the San Francisco Building Code is documented in the *Greenhouse Gas Analysis: Compliance Checklist for Stonestown Development Project* and described in Section E.8, Greenhouse Gas Emissions, in Appendix B of the draft EIR. As stated in draft EIR p. 2-40, the project sponsor would evaluate on-site renewable energy approaches as part of the sustainability plan to be included in the proposed project or variant. The sustainability plan would be an appendix to the design standards and guidelines and would include both sitewide and location-specific standards, guidelines and considerations related to project sustainability. The sustainability plan and its implementation would not result in project elements or environmental effects that have not already been described and evaluated in the draft EIR.

4.U.4 Comment CG-NON-CEQA-4: Building Heights

This response addresses the following comments, which are quoted below:

I-Chou-1

I-Gardner-1

I-Hardeman-1

I-Lo-3

I-Ressl-1

I-Troxel-1

"I, on behalf of my family, am sending in an objection to the Stonestown proposed development, specifically a 90-foot tall residential tower next to Rolph Nicol Park.

For years, we were informed that a 4-story building in that spot was proposed. Its Environmental Impact Report (EIR) will provide an overview of the project, in-depth studies of potential impacts, measures to reduce or avoid those impacts, maps and technical details of the project area and an analysis of alternatives to the project. Yet, a 90-foot residential tower has been inserted into the Draft EIR filed with the City on 12/14/2022. This is an dishonest move that breaks the Merced Manor and Lakeshore neighborhood's trust." *(Su-Syin Chou, P.E., Letter, 2/12/2023 [I-Chou-1, GC-NON-CEQA-4])*

"I would like to voice my opinion regarding the Stonestown developers plan to build a 90 foot tall residential tower near Stonestone mall directly next to Rolph Nicol Park. This was not communicated to the Lakeshore community and I do not agree with this development. This was originally a 4 story building and that was what we were told and approved. You have my vote 'NO' on this 90 foot tall residential tower." *(Karen Gardner, Letter, 2/10/2023 [I-Gardner-1, GC-NON-CEQA-4])*

"**1) OPPOSITION TO THE CONSTRUCTION OF A 90 FOOT RESIDENTIAL TOWER ADJACENT TO ROLPH NICOL PARK**

* For years, Brookfield Properties represented to the neighborhood that the building in the northwest corner of the existing parking lot, directly adjacent to Rolph Nicol park, would be 4 floors. Yet the draft EIR now indicate plans to build a 90 foot tower." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-1, GC-NON-CEQA-4])*

"In conclusion, erecting multiple 90-foot towers will significantly affect nearby residents and alter lifestyles in more ways imaginable. Please reconsider to previous plans of 4-story buildings." *(Cynthia Lo, Letter, 2/11/2023 [I-Lo-3, GC-NON-CEQA-4])*

"I'm writing to you to express my disappointment regarding the proposed residential tower to be built behind Stonestown Mall. My understanding was that the building was originally going to be 4 stories tall, but has now suddenly changed to 90 feet (almost 8 stories) without any consultation with the neighborhood. Given that the developer has made several assurances about the proposed work, on the basis of which we decided not to oppose the construction, my husband and I are very worried that the developer feels free to discard any promises they've made if it is to their convenience.

We think it is essential that the city deny their permit until such time as a transparent public hearing has been made on their proposed amendment to increase the height to 90 feet.

If they build it at the promised 4 stories, we would have no objection. But from our perspective, they are trying to pull a fast one. It would be unacceptable if the city allowed them to get away with it." *(Jan Ressl & Ajith Ramanathan, Letter, 2/13/2023 [I-Ressl-1, GC-NON-CEQA-4])*

"I am writing to express my concerns regarding recent changes that have been made to the Stonestown Development Plan (the Plan) as outlined in the EIR dated December 14, 2022. According to the Plan, and as confirmed by Reuel Cooke, Manager of Community Development for Brookfield Properties, there will now be three eight (8) story buildings adjacent to Rolph Nicol Park and Playground (the Park). The previous Plan indicated that the adjacent buildings would be four (4) stories in height. The proposed buildings are now twice their original proposed height." *(Suzanne Troxel, Letter, 2/11/2023 [I-Troxel-1, GC-NON-CEQA-4])*

RESPONSE CG-NON-CEQA-4

The comments state opposition to a proposed 90-foot-tall residential tower next to Rolph Nicol Jr. Playground. The commenters assert that previous information provided to them about the project specified that a 4-story building would be developed at this location. The commenters state that this change represents a willful deception and a breach of prior assurances that nullified prior opposition to development of the project site. In response to these comments, since the notice of preparation (NOP) was published in April 2022 (see draft EIR Appendix A), a 90-foot-tall building has been proposed for Block NW1. The draft EIR accurately describes the physical components and requested approvals for the proposed project or variant. As stated in Chapter 2, Project Description, of the draft EIR, p. 2-1, the proposed project and variant would require amendments to the San Francisco General Plan, San Francisco Planning Code, and zoning map. The proposed rezoning would modify existing applicable height limits, including existing height limits within the portion of the project site referenced by the commenters. The draft EIR appropriately analyzes impacts associated with the height of the proposed buildings (e.g., draft EIR Section 3.E, Wind, and Section 3.F, Shadow). The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant. The commenters are also referred to Response GC-CEQA-2, Public Outreach, p. 4-120, regarding the environmental review process and public comment opportunities

4.U.5 Comment GC-NON-CEQA-5: Non-CEQA Transportation Impacts

This response addresses the following comments, which are quoted below:

I-Arbulu-3

I-Chang-1

I-Conroy2-3

I-DeBaun-2

I-EBirsinger-1

I-EBirsinger-3

I-Ho-2

I-Kiong-1

I-Kiong2-1

I-LBirsinger-3

I-Lee-2

I-Lo-2

I-Naraghi-1

I-Parthasarathy-1

I-Parthasarathy-2

I-Pilpel-9

I-Tsang-1

I-Wong-1

I-Chang-2

I-Moore-4

I-Will-2

I-Full-18

I-LG-4

“There are 3 schools in our neighborhood spanning 8 blocks—a high school and 2 primary schools. You need to be here in the mornings before school to see first hand the chaos and gridlock every morning. Parents double park, block driveways, and honk at each other as they drop their kids off, and the students who drive themselves scour the neighborhood for parking spots.

Adding hundreds of residents a block away —-many of whom will also seek parking—will only make it worse on our neighborhood.” *(Antonio Arbulu, Letter, 2/11/2023 [I-Arbulu-3, GC-NON-CEQA-5])*

"(1) Currently, there is a lot of traffic on 19th Avenue and Stonestown area. By having this project developed, it will create more congestion and significant noises." *(Mary Chang, Letter, 2/7/2023 [I-Chang-1, GC-NON-CEQA-5])*

"Also, only short shrift is given to the public comments concerning traffic impacts to surrounding neighborhoods - the Draft EIR identifies that Winston Avenue may experience traffic back-ups of one block, but ignores the remainder of the surrounding neighborhoods." *(Paul A. Conroy, Letter, 2/13/2023 [I-Conroy2-3, GC-NON-CEQA-5])*

"1. EIR Section 3-2: 19th Avenue is already a highly congested thoroughfare. The impact of increased traffic in this area, potential diversion of Stonestown related traffic into Lakeside and other adjacent neighborhoods, impact of street parking (supply vs. demand), pedestrian crossings must be adequately addressed." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-2, GC-NON-CEQA-5])*

"I am writing in regards to the subject project. I am totally against it. I am a Lakeside resident for nearly 30 years. The project would add tremendous congestion to the area. I suggest you take some of the vacant building in downtown SF and convert them to housing." *(Eugene Birsinger, Letter, 2/9/2023 [I-EBirsinger-1, GC-NON-CEQA-5])*

"2) Traffic - Section 3.2 of the EIR Draft. Traffic on Winston and Nineteenth Ave is already terrible. Congestion is getting worse. All of these new residents and businesses in this project will add to much traffic. Gridlock will be everywhere. How does the EIR Draft address this issue?? By the way, Muni is not the solution. Muni service is already terrible on Nineteenth Avenue." *(Eugene Birsinger, Letter, 2/9/2023 [I-EBirsinger-3, GC-NON-CEQA-5])*

"There is always heavy traffic from Holloway Ave. to Sloat Blvd on 19th Ave. Without any added underground public transportations, the traffic would get much worse and the Air quality would go down dramatically by increased traffics." *(Hyesoon Ho, Letter, no date [I-Ho-2, GC-NON-CEQA-5])*

"I am concerned about the negative impact to the traffic situation with this new development which will add even more cars to the road from 19th to South 280 which is already experiencing 'bottleneck' condition during peaking hours given there is no public transportation from that neighborhood to the south bay." *(Mee Mee Kiong, Letter, 1/30/2023 [I-Kiong-1, GC-NON-CEQA-5])*

"I like a lot about the Stonestown Development. My main concern is the traffic situation on the -- going to South Bay. Many residents in this neighborhood travel to the Silicon Valley to work. In fact, I think we are kind of well known to be, you know, the suburb of the Palo Alto area. So I am just really concerned about the number of residents that are going to be in this neighborhood and the traffic that's going to be generated. And there's a lack of public transportation from this particular area to Silicon Valley, and the only way to travel besides (unintelligible) the buses, or to take buses, is by cars.

Pre-COVID, this situation is already quite above that situation. And with the number of residents' parking spaces, it's just going to generate even more traffic. And as long as the developer adequately address that particular stretch from 19th down to Silicon Valley, I would really appreciate that. I just can't see how the number of people added to this particular location can eliminate or relieve that kind of traffic situation." *(Mee Mee Kiong, Public Hearing, 2/9/2023 [I-Kiong2-1, GC-NON-CEQA-5])*

"**Section 3.2. Traffic**

- Address how increased traffic patterns in/out of Stonestown will be managed." *(Laura Birsinger, Letter, 2/5/2023 [I-LBirsinger-3, GC-NON-CEQA-5])*

"Please conduct the necessary research on traffic. At times (holidays or after school hours), it's very difficult to get across Winston with traffic backed up to Junipero Sierra Blvd. I can't imagine what will happen once 2800 additional units are added at Stonestown. 19th avenue (highway 1) is already congested as it is. Please don't add to the madness." *(Marie Lee, Letter, 2/9/2023 [I-Lee-2, GC-NON-CEQA-5])*

"Moreover, Eucalyptus Dr houses an elementary school, a high school, a church with a K–8 school, a family YMCA and specifically, an entrance on 20th Ave directly to Stonestown. On any given school day, this street is traffic jammed three to four times for drop-offs/pick-ups. With the new plans, creating double to triple more residents, this mall entrance will ultimately create chaos." *(Cynthia Lo, Letter, 2/11/2023 [I-Lo-2, GC-NON-CEQA-5])*

"1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues." *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-2, GC-NON-CEQA-5])*

"8. The Project would eliminate parking and traffic lanes both in the Project area (Stonestown itself) and surrounding streets. The surrounding area is already significantly impacted by traffic related to 19th Avenue (State Route 1), San Francisco State University, and Parkmerced." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-9, GC-NON-CEQA-5])*

"I and my family strongly object to the redevelopment project particularly in light of the traffic flow. It is already a mess right now with traffic jams daily along 19th Ave. The added business and residential traffic will be unbearable. Our house is in Lakeside at the corner of Wyton and Denslowe east of 19th Ave. Wyton is a narrow walkway which does not and cannot support heavy traffic which the developer portrays to be a main conduit crossing 19th Ave. This will destroy my neighborhood and the value of our house. We spent three years applying for remodeling of our home including planting trees along Wyton and 19th Ave. which

application is pending approval after completing the recording process with the county recorder. This redevelopment project and intended diverging of traffic kills our entire effort to improve our house and value.

As of now, we constantly repaint over graffiti on our fence facing the sidewalk east of 19th Ave. We can't imagine how much worse it will become with increased traffic.

It directly kills our effort to improve our neighborhood. Come and drive along 19th Ave. and see firsthand the already congested traffic." *(D.W Tsang, Letter, 2/8/2023 [I-Tsang-1, GC-NON-CEQA-5])*

"I don't believe 19th Ave can handle additional 2,900 unit traffic in this area. Right now the traffic already packed in rush hour. Plus M car on 19th Ave will slow down more incoming traffic from freeway. Hotel business will bring more traffic on 19th Ave. 19th Ave is main street connected sunset and Richmond Residential District. SFSU has a lot students walk on 19th Ave. We need a safe street nota a heavy traffic street." *(Grace Wong, Letter, 2/9/2023 [I-Wong-1, GC-NON-CEQA-5])*

"(2) It is very hard to find parking even for the Lakeshore residents right now, this project will create even more parking problems." *(Mary Chang, Letter, 2/7/2023 [I-Chang-2, GC-NON-CEQA-5])*

"Another concern is parking. While the project calls for a total of 4,250 spaces overall, if we subtract the permanent parking for residents, it is not clear how many parking spaces are available for visitors to mall. From my causal observation, the majority of the current spaces available at the mall are used daily, let alone the congestion during the holidays. No mention or analysis is made of where people will park when they wish to visit the mall, or the impact upon the tenants at the mall when people decide not to visit due to inadequate parking." *(Andrew Moore, Letter, no date [I-Moore-4, GC-NON-CEQA-5])*

"Please provide sufficient underground and above ground parking for mall customers and proposed residents of the Stonestown housing development. There are many retailers at Stonestown that selling goods that require car transport, such as family groceries at Whole Foods and Trader Joe's, ski and snowboard (skis/boots/poles) rentals and returns at Sports Basement, and multi-bag purchases made during Target runs. As a mall, Stonestown has pivoted incredibly well bringing in highly desirable retailers and restaurants. Please continue to provide convenient automobile access for shoppers so that Stonestown continues to thrive." *(Tina Will, Letter, 2/3/2023 [I-Will-2, GC-NON-CEQA-5])*

"Page 3.B-5, Table 3.B-2. What is the point of this table? Why were only some intersections included in this table? Without additional information, such as the level of service (LOS) at these intersections, this information is useless.

Page 3.B-18, paragraph 2. While it is true that the CEQA Guidelines were amended to remove automobile delay as a measure to determine a project's significance, it does prohibit the EIR from disclosing that information. In fact, this information was requested as part of the scoping process and repeated during attendance at a public

meeting prior to the release of the Draft EIR. At that public meeting, this commenter was assured that such an analysis would be included in the EIR. Alas, that is not true. No such analysis has been provided. It is puzzling why information regarding traffic counts are provided (see Appendix D.1) but there is nothing in that appendix that provides any context for what these changes in traffic volumes mean. Why was such information provided in such an incomplete state? My biggest concern has been the effects of the project on 20th Avenue between Eucalyptus Drive and Sloat Boulevard. In personal meetings with a Brookfield Properties representative and at public meetings, I had been assured that these concerns would be addressed. Unfortunately, these concerns have not been addressed at all." *(Dave Full, Letter, 2/12/2023 [I-Full-18, GC-NON-CEQA-5])*

"Transportation Demand Management intended to reduce use of cars does not address the needs of seniors, the disabled and families with young children. Some of us are not able to walk long distances, ride bikes, etc. Does Demand Management mean charging for parking at the mall?" *(LG, Letter, 2/13/2023 [I-LG-4, GC-NON-CEQA-5])*

RESPONSE GC-NON-CEQA-5

The commenters discuss existing traffic and parking conditions and opine on the primary and secondary effects that vehicle trips associated with the proposed project or variant would have on traffic congestion. Many commenters express concerns regarding high level of automobile and pedestrian activity during school drop-off/pick-up periods and identify high traffic congestion levels associated with the proposed project or variant.

Comments regarding pedestrian and bicycle safety are addressed in Response TR-2, Pedestrian and Bicyclist Safety Impacts, on p. 4-23.

Some commenters express general concern that the proposed project would result in a decrease in air quality and additional noise impacts. Refer to Response AQ-1, Air Quality Analysis, and Response NO-1, Construction and Operational Noise, on pp. 4-53 and 4-45, respectively, of this RTC document.

The response to the traffic congestion comments is organized by the following subtopics:

- Automobile Delay and Existing Conditions
- Parking
- TDM

AUTOMOBILE DELAY AND EXISTING CONDITIONS

Several commenters request that an automobile delay analysis be provided for the study intersections, as the proposed project or variant would add vehicle trips to the study area. As discussed on draft EIR p. 3.B-18, CEQA section 21099(b)(2) expressly provides that automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment.

Several commenters state that the roadways in the project vicinity are already congested under existing conditions and that the proposed project would further worsen congestion in the area. Several commenters express concern regarding project-generated vehicle trips and the effect those added vehicles would have on surrounding neighborhoods. CEQA requires analysis of the significant effects of a project on the environment. A project cannot be required under CEQA to mitigate effects to which the project does not contribute to, nor can it be required to mitigate effects beyond a degree or amount that is roughly proportional to the impact of the project.

Due to CEQA provisions about automobile delay and studying a project's changes to the environment, the EIR shall not analyze or mitigate automobile delay impacts, including any existing vehicle queues resulting in backed-up traffic or school-related congestion along Eucalyptus Drive, Winston Drive, 20th Avenue, 24th Avenue, 25th Avenue, 26th Avenue, Inverness Drive, and Forest View Avenue.

A commenter questions the utility of "total entering vehicles," the current metric used in Table 3.B-2 on p. 3.B-5. Discussion of this table's purpose and utility is provided in Response TR-4., p. 4-37.

Queuing experienced at the noted intersections is due to existing conditions. In addition to automobile delay not being a CEQA impact, the existing congestion and secondary impacts at those locations referenced in the comments have no nexus with the proposed project or variant. Thus, the proposed project or variant is not required to mitigate existing conditions or existing system deficiencies.

A commenter incorrectly notes that the proposed project or variant would add heavy traffic to Wyton Lane. Per the San Francisco Better Streets Plan, Wyton Lane is identified as a paseo (a pedestrian-only path) that cannot be used by motor vehicle traffic.[53] The proposed project or variant would not modify Wyton Lane and therefore would not introduce vehicular traffic on the paseo.

Transit delay is a topic for environmental review and is discussed in the following locations:

- Impact TR-4 on draft EIR pp. 3.B-65 through 3.B-70
- Impact C-TR-4 on draft EIR pp. 3.B-78 through 3.B-83
- Draft EIR Appendix D.2, Transit Analysis Memorandum

PARKING

As discussed below, the draft EIR adequately analyzed the potential effects of vehicle parking at Stonestown Galleria shopping mall. Some commenters express concerns regarding vehicle parking supply and the perceived potential impact of inadequate vehicle parking at Stonestown Galleria shopping mall. The commenters do not state that environmental impacts would result from the alleged parking deficit. Parking supply is an issue decision-makers may consider separate from CEQA.

As discussed on draft EIR p. 3.B-45, the proposed project or variant meets the CEQA section 21099(d) criteria as a residential, mixed-use infill project in a transit priority area, and therefore parking shall not be considered an environmental impact under CEQA. Additionally, as discussed on the same page, the proposed project or variant would not result in substantial parking deficit and a secondary parking analysis

[53] San Francisco Better Streets Plan, Final Plan, December 7, 2010. Available online at: https://sfplanning.org/sites/default/files/archives/BetterStreets/docs/Better-Streets-Plan_Final-Adopted-10-7-2010.pdf. Accessed July 2023.

is not required. (Vehicle parking numbers are discussed in more detail in Response PD-1, Project Description Comments/Questions, p. 4-5.)

TDM

One comment expresses concern that the TDM measures, especially priced parking, would negatively affect seniors, the disabled, and family with young children. The commenters concerns are noted. TDM measures are incentives and tools to encourage walking, biking, and transit. The project applicant is not currently considering pricing parking for retail uses.

4.U.6 Comment GC-NON-CEQA-6: Effects from Other Projects

This response addresses the following comment, which is quoted below:

I-DeBaun-5

"4. Section 3.3: we have been directly impacted by the construction of the Science Building on the SFSU property. Noise, significant vibrations, loss of sunlight due to height of building." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-5, GC-NON-CEQA-6])*

RESPONSE GC-NON-CEQA-6

The commenter references experiencing noise and vibration impacts from construction of the Science Building on the adjacent San Francisco State University campus. This is not a cumulative project for purposes of the draft EIR analysis because the timing and duration of the construction would not coincide with the proposed project or variant. This comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required.

4.U.7 Comment GC-NON-CEQA-7: Opposition to the Proposed Project

This response addresses the following comments, which are quoted below:

I-Anthony-1

I-Berman-1

I-Cenpai-1

I-DeBaun-1

I-EBirsinger-4

I-Hardeman-8

I-Herlihy2-4

I-Herzfeld-2

I-Iwata-1

I-Lee-1

I-Lewis-1

I-Pilpel-2

I-Zhou-1

"We are vehemently opposed to the proposed redevelopment of Stonestown that would include the proposed 2900 housing units and an 18 story hotel. We have lived in this neighborhood all of our lives and have seen the increase in traffic and people explode over the years. The proposed project would absolutely destroy the quality of life in the area. The City of San Francisco has already deteriorated enough as it is." *(Bob and Maha Anthony, Letter2/7/2023 [I-Anthony-1, GC-NON-CEQA-7])*

"We have lived in Lakeside II since 1975 and we do not approve of any of the changes mentioned in this EIR!!! For one thing the traffic will be a nightmare. Also I could have stayed in Manhattan if I wanted concrete canyons." *(Laurie Berman, Letter, 2/8/2023 [I-Berman-1, GC-NON-CEQA-7])*

"I am sending this email to voice my objections against the development of the building behind Rolph Nicol Park. I believe that having a building there is not only environmentally detrimental, but also a safety concern for current residents." *(Inverness Cenpai, Letter, 2/8/2023 [I-Cenpai-1, GC-NON-CEQA-7])*

"We purchased our home on Denslowe Drive in December 2008. Having lived in a very dense and heavily populated neighborhood (NOPA) for over 20 years, we were attracted to the idyllic nature of the Lakeside neighborhood. Certainly, the neighborhood has changed in the past 14 years but its sweet neighborhood 'look and feel' remains. We are deeply concerned about the impact the proposed Stonestown Project will have on our community." *(Barbara and Robert DeBaun, Letter, 2/9/2023 [I-DeBaun-1, GC-NON-CEQA-7])*

"Terrible project … to much congestion, more crime, and more traffic. SF already has plenty of vacant buildings to use for housing." *(Eugene Birsinger, Letter, 2/9/2023 [I-EBirsinger-4, GC-NON-CEQA-7])*

"To summarize, a 90-foot building built by a PRIVATE developer to MAXIMIZE PROFITS AT THE EXPENSE OF THE ENJOYMENT OF OUR PUBLIC PARK SHOULD NOT BE ALLOWED. It will forever alter the use and enjoyment of our park." *(Donald Hardeman, Letter, 2/7/2023 [I-Hardeman-8, GC-NON-CEQA-7])*

"I urge the San Francisco Planning Commission to reject the DEIR." *(James P. Herlihy, Letter, 2/8/2023 [I-Herlihy2-4, GC-NON-CEQA-7])*

"This is the suburban side if SF. Do not turn it j to another downtown. Stop this ridiculous project if at least scale it way back. Do your residence building on the back side of Stonestown not along 19th Ave." *(Debbie Herzfeld, Letter, 2/9/2023 [I-Herzfeld-2, GC-NON-CEQA-7])*

"I am a Lakeside resident and am opposed to the planned redevelopment." *(Jerry Iwata, Letter, 1/7/2023 [I-Iwata-1, GC-NON-CEQA-7])*

"I'm a long-time resident of Lakeside and I'm against the enormous project coming to Stonestown. I live a block away and my cross street is Winston. I'm very concerned about the traffic and air quality this huge project will bring to my neighborhood." *(Marie Lee, Letter, 2/9/2023 [I-Lee-1, GC-NON-CEQA-7])*

"As a resident of Lakeshore Neighborhood, I strongly object the housing development plan, due to negatively impact

1- the enjoyment of the park

2- Current serene, quiet and beautiful skyline and landscape and

3- Blocking the easy access to the shopping mall." *(Michele Ho Lewis, Letter, 2/11/2023 [I-Lewis-1, GC-NON-CEQA-7])*

"2. I believe that this Project is not appropriate for an LEED proposal. The economy, locally and globally, is highly uncertain at this time. Downtown, educational institutions, housing, shopping, and transportation are incredibly speculative right now. Thoughtful and prudent consideration of long-term impacts is needed, with no rush to a decision on entitlements and growth." *(David Pilpel, Letter, 2/13/2023 [I-Pilpel-2, GC-NON-CEQA-7])*

"I opposed to the above project as this project will bring negative impact to our neighborhood such as, overloaded parking, traffic, increasing noisy, more people will share public facilities while limited accessibility and pollution over long time construction period." *(Peiling Zhou, Letter, 2/8/2023 [I-Zhou-1, GC-NON-CEQA-7])*

RESPONSE GC-NON-CEQA-7

The comments express opposition to the proposed project or variant.

Comments express general opposition to the proposed project or variant, including concerns that the proposed project or variant would result in negative effects related to increased population and traffic. The environmental effects of the proposed project or variant are identified and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study (included as Appendix B to the draft EIR). Specifically, physical effects of the proposed project or variant related to transportation are addressed in draft EIR Section 3.B, Transportation and Circulation. Effects of the proposed project or variant related to population growth are addressed in draft EIR Section 4.A, Growth Inducement, and initial study Section E.2, Population and Housing, and in other applicable topical sections of the draft EIR that address physical effects related to population growth. The proposed project or variant would not have a substantial direct growth-inducing impact. While the project would increase the residential population on the site, this growth is accounted for within the planned growth for San Francisco and, as addressed under their respective topics in the draft EIR and initial study, this project-related growth would be served by existing infrastructure and public services. Furthermore, the proposed project or variant would not indirectly result in growth inducement because it would be located on an infill site in an urbanized area. See Response OC-1, Other CEQA Considerations, p. 4-75, for a more detailed discussion regarding comments pertaining to the proposed project or variant's growth-inducing impacts.

A comment expresses opposition to development under the proposed project or variant in proximity to Rolph Nicol Jr. Playground, which is adjacent to the northwest corner of the project site. The comment expresses concern that the proposed development would result in adverse environmental effects and safety issues, neither of which are specified in the comment.

Comments express general opposition to the proposed project or variant and include various unspecified and unsupported claims regarding impacts related to traffic, parking, noise, air quality, public facilities, parks, crime, and public safety. These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant. The environmental effects of the proposed project or variant are described and evaluated in draft EIR Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, and in Section E, Evaluation of Environmental Effects, of the initial study (included as Appendix B to the draft EIR). Specifically, physical effects of the proposed project or variant related to transportation are addressed in draft EIR Section 3.B, Transportation and Circulation. Physical effects of the proposed project or variant related to noise are addressed in draft EIR Section 3.C, Noise and Vibration. Physical effects of the proposed project or variant related to public facilities are addressed in Section E.13, Public Services, in the initial study. Physical effects of the proposed project or variant related to air quality

are addressed in draft EIR Section 3.D, Air Quality. Physical effects of the proposed project or variant related to parks and recreation are addressed in Section E.11, Recreation, in the initial study. Regarding purported impacts of the proposed project or variant related to crime and public safety, see Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105.

A comment states that the proposed project is not appropriate for a LEED proposal. The comment cites global and local economic uncertainty, unclear claims of speculative conditions, and unspecified long-term impacts as factors that should inform and decelerate decisions on entitlements and growth. As discussed in Section E.8, Greenhouse Gas Emissions, p. 105, in the initial study (included as Appendix B to the draft EIR), the proposed project or variant would be required to comply with the standards of Title 24 and the requirements of the 2019 San Francisco Green Building Ordinance. As a mixed-use development, the proposed project or variant would be required to be built to LEED standards for Neighborhood Development certification at a minimum Gold Standard, thus minimizing the amount of fuel, water, or energy used. See Response GHG-1, Greenhouse Gas Emissions Analysis, p. 4-97, for more detailed discussion regarding comments related to GHG impacts.

Portions of these comments include concerns regarding other environmental topics. The following identifies responses where additional information is provided in this RTC document regarding environmental topics for specific comments:

- Response GC-NON-CEQA-5, Non-CEQA Transportation Impacts, 4-137, for a discussion of the existing conditions, study area, analysis related to vehicle trips, and parking at the project site.
- Response NO-1, Construction and Operational Noise, p. 4-45, regarding noise impacts.
- Response AQ-1, Air Quality Analysis, p. 4-53, for a discussion regarding air quality impacts.
- Response SH-1, Shadow Impacts, p. 4-59, for a discussion regarding the proposed project or variant's shadow impacts on Rolph Nichol Jr. Playground.
- Response RE-1, Recreation, p. 4-101, for a discussion regarding park and open space impacts (I-Lewis-1).
- Response PS-1, Increase in Crime and Demand for Public Services, p. 4-105, for a discussion regarding impacts to public services.
- Response AL-4, Adequacy and Reasonable Range of Alternatives, p. 4-86, for a discussion regarding reduced density alternatives analyzed in the draft EIR.
- Response AE-1, Aesthetics, p. 4-95, regarding CEQA and aesthetic impacts.

4.U.8 Comment GC-NON-CEQA-8: Design of the Proposed Project

This response addresses the following comments, which are quoted below:

I-Tsakalakis-2

O-SFSU-2

"It may be that I missed this in the 628-page EIR, but I would like to see **more green walls on the residential, commercial, and retail buildings**. Singapore is a shining example of how greenery makes a high rise, dense city more beautiful and livable. This link shows many examples that could easily be

incorporated into the Stonestown design: http://www.greenroofs.com/2019/05/01/green-walls-becoming-more-popular-in-singapore-buildings/. As a member of the Board of Trustees, I worked with the Cathedral School for Boys (by Grace Cathedral) on a recent renovation, and a feature greatly appreciated by the neighbors as well as kids and teachers was green walls." *(Kath Tsakalakis, Letter, 12/23/2022 [I-Tsakalakis-2, GC-NON-CEQA-8])*

"2) Housing: Currently many SF State students, faculty and staff face long commutes to reach the university campus next door to the project site. Please consider whether unique initiatives exist which may reduce travel times for those affiliated with SF State by providing affordable housing. Such an approach would alleviate transit and transportation impacts as well as greenhouse gas emissions. Additionally, in considering the types of housing being offered, please consider the specific needs of the SF State community, particularly as they would complement the university's offerings." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-2, GC-NON-CEQA-8])*

RESPONSE GC-NON-CEQA-8

The comments relate to the design of the proposed project. A comment expresses the commenter's desire for green walls (i.e., vegetated wall surfaces) on proposed residential and commercial buildings. A comment requests consideration of housing geared specifically for SFSU students in order to reduce existing commute distances, transportation and transit impacts, and greenhouse gas emissions.

These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant. These considerations would be carried out independent of the environmental review process.

4.U.9 Comment GC-NON-CEQA-9: San Francisco Designation as Urban Heat Island

This response addresses the following comments, which are quoted below:

I-Herlihy1-11

I-Naraghi-11

I-Parthasarathy-12

"11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4" *(James P. Herlihy, Letter, 1/14/2023 [I-Herlihy1-11, GC-NON-CEQA-9])*

"11) The new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island" *(Nasrin Naraghi, Letter, 2/9/2023 [I-Naraghi-11, GC-NON-CEQA-9])*

"11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4" *(Hemai Parthasarathy, Letter, 2/9/2023 [I-Parthasarathy-12, GC-NON-CEQA-9])*

RESPONSE GC-NON-CEQA-9

The comments ask whether the proposed project or variant would exacerbate San Francisco's designation as an urban heat island and assert that this topic should be addressed in the draft EIR. The topic of urban heat islands is not pertinent to environmental analysis under CEQA, and the designation does not affect the analysis of environmental impacts in the EIR. However, GHG emissions are analyzed in initial study Section E.8 (see draft EIR Appendix B), These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.U.10 Comment GC-NON-CEQA-10: ParkMerced Ownership

This response addresses the following comment, which is quoted below:

O-SPEAK-5

"RELATED ISSUES

ParkMerced is nearby Stonestown. ParkMerced is owned by Maximus Real Estate Partners.

Maximus in currently in loan forebearance for the ParkMerced property and is expected to default in late 2023 or early 2024.

SPEAK would urge Brookfield Properties to negotiate with Maximus Real Estate Partners to acquire the ParkMerced property with the provision that the City have the option to purchase the property or parts of the property over the next thirty (30) years." *(Eileen Boken, President, Sunset-Parkside Education and Action Committee, Letter, 2/13/2023 [O-SPEAK-5, GC-NON-CEQA-10])*

RESPONSE GC-NON-CEQA-10

The comment relates to land acquisition, finance, and other topics of a property not owned by the project sponsor. This comment is noted but does not relate to a physical environmental impact under CEQA. The comment does not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is

required. The comment will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

4.U.11 Comment GC-NON-CEQA-11: Economic Feasibility and Workforce Considerations

This response addresses the following comments, which are quoted below:

I-Moore-5

O-SFSU-5

"Finally, no where is there a discussion of the economic feasibility of the project. That is, what analysis and projections have been made showing that people are willing to pay for the kinds of residential properties proposed at the price points necessary for the developer to go ahead with the project. While this may not technically be a consideration for the EIR, it really is an environmental issue. If the builder can not show that the project is highly viable as currently envisioned, it is too easy to claim that something different (and likely less desirable than what currently exists) should be put in its place down the road. Ultimately, the environment in which people currently live would be the loser." *(Andrew Moore, Letter, no date [I-Moore-5, GC-NON-CEQA-11])*

"5) Workforce Considerations: SF State plays a key role in developing the City's and the region's workforce, and the opportunities for our students to gain hands-on, practical experiences in the workforce may be significant. We would welcome the opportunity to consider partnerships that provide workforce training, and related collaborations." *(Jason Porth, Vice President, San Francisco State University, Letter, 2/13/2023 [O-SFSU-5, GC-NON-CEQA-11])*

RESPONSE GC-NON-CEQA-11

The comments discuss economic feasibility and workforce considerations. These topics are not applicable to environmental analysis under CEQA. In accordance with CEQA, the draft EIR evaluates the physical environmental effects of the proposed project or variant. Economic or workforce considerations are not considered environmental impacts under CEQA unless there would be a physical impact on the environment resulting from such effects (such as impacts addressed in air quality, transportation and circulation, and noise and vibration sections of the draft EIR), or if such effects would result in the need for the construction of new or physically altered facilities that would result in significant physical environmental impacts. The planning commission may consider non-environmental information regarding the economic feasibility of the proposed project or variant, separate from the EIR certification process. These comments do not raise specific issues pertaining to the adequacy, accuracy, or completeness of the draft EIR's analysis of the proposed project or variant's physical environmental impacts and no further response is required. The comments will be provided to City decision-makers for their consideration prior to taking an approval action on the proposed project or variant.

CHAPTER 5
DRAFT EIR REVISIONS

The following changes to the text of the draft EIR are made in response to comments on the draft EIR or are included to clarify the draft EIR text. The revisions reflect changes identified in Chapter 4, Comments and Responses, or staff-initiated text changes; all of which clarify, expand, or update information and/or graphics presented in the draft EIR. Staff-initiated changes to clarify information presented in the draft EIR are highlighted with an asterisk (*) in the margin to distinguish them from text changes in response to comments.

The revised text does not provide new information that would result in any new significant impact not already identified in the draft EIR and initial study or a substantial increase in the severity of an impact identified in the draft EIR and initial study that cannot be mitigated to less than significant with implementation of mitigation measures agreed to by the project sponsor. Thus, none of the text revisions would require recirculation pursuant to CEQA Guidelines section 15088.5. The draft EIR and this response to comments document together constitute the final EIR for the Stonestown Development Project. In the revisions shown below, deleted text is shown in ~~strikethrough~~ and new text is double-underlined.

This chapter only shows changes to the proposed project and draft EIR variant, and no edits to the revised variant as modified in Chapter 2 of this RTC. Chapter 2 of this RTC includes the updated description of the revised variant.

5.A Revisions to Chapter S, Summary

* A new footnote was added on draft EIR p. S-1 to note the change in ownership of the Authentic Church to Brave Church San Francisco. However, for purposes of the EIR and this RTC document, the variant parcel will continue to be referred to as the Authentic Church:

> The variant would develop the 0.8-acre Authentic Church[1] parcel adjacent to the project site and would include approximately 150 additional residential units; 10,000 additional square feet of institutional use; and 200 additional parking spaces in a partially below-grade parking structure.
>
> [1] The Authentic Church has changed ownership and is now called the Brave Church San Francisco. However, the EIR will refer to the variant parcel as the Authentic Church.

* To be consistent with the correction made to initial study Section E.8, Greenhouse Gas Emissions, the following revision was made to draft EIR Table S-1, p. S-38:

INITIAL STUDY SECTION E.8, GREENHOUSE GAS EMISSIONS			
Impact C-GG-1: The proposed project or variant would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions.	S	Mitigation Measures M-AQ-1h and M-TR-4~~b~~a would apply.	LTSM

* The following revisions was made to draft EIR Table S-2, p. S-48, to remove a duplicate and incorrect row for Impact C-TCR-1:

INITIAL STUDY SECTION E.4, TRIBAL CULTURAL RESOURCES			
Impact C-TCR-1: The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources	S	Mitigation Measure M-CR-2 would apply.	LTSM
~~**Impact C-TCR-1:** The proposed project or variant, in combination with the cumulative projects, would not result in significant cumulative impacts on tribal cultural resources.~~	~~LTS~~	~~No mitigation required.~~	~~N/A~~

* Mitigation Measure M-TR-1 in draft EIR Table S-1, pp. S-7 to S-8 was revised as follows:

Mitigation Measure M-TR-1: Construction Coordination Plan. The project sponsor of the proposed project or variant shall prepare a construction coordination plan (plan or plans) for each construction phase ~~as shown in Figure 2-20 and Table 3.B-14 in the EIR~~ or subphase, including to address proposed project or variant construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water, electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized.

The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary.

Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to:

- Blue Book section 3: Traffic Lane Closure Requirements
- Blue Book section 5: Sidewalk Closures
- Blue Book section 7: Transit Operations
- Blue Book section 9: Bicycle Routes
- Public Works Code section 2.4.20(b): Contractor Parking Plans
- Public Works Code section 724: Temporary Occupancy of Street
- Public Works Subdivision Code
- Public Works Subdivision Regulations

Each plan shall also address how the proposed construction activities within the project or variant site ~~would~~ will be coordinated with construction activities within Caltrans' right-of-way.

* The third paragraph of Mitigation Measure M-TR-4a in draft EIR Table S-1, p. S-10 was revised as follows to clarify the timing of when monitoring shall begin:

The project sponsor shall begin monitoring when Phase 1 operations overlaps with ~~any construction~~ Phase 3 construction, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions.

* Mitigation Measure M-TR-4b in draft EIR Table S-1, p. S-11 was revised as follows to clarify the timing, protocol, and implementation:

Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure. The project sponsor ~~of the project or variant shall implement transit travel time reduction measure. Such a measure~~ shall ~~include the preparation and implementation of a coordination and transit signal priority~~ coordinate and fund traffic signal coordination with San Francisco Municipal Transportation Agency (SFMTA) to address potential northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way (S)~~, subject to San Francisco Municipal Transportation Agency (SFMTA) review and approval~~. The project sponsor, in coordination with SFMTA, shall be responsible for implementation as outlined in the Transportation Exhibit of the Development Agreement.

* Mitigation Measure M-TR-6 in draft EIR Table S-1, pp. S-11 through S-13 was revised as follows:

Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP). The project sponsor of the project or variant shall prepare and submit a DLOP to the planning department in accordance with this Mitigation Measure M-TR-6, and any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects) ("Guidelines"), in consultation with the San Francisco Municipal Transportation Agency (SFMTA). In the event of a conflict between the requirements of this Mitigation Measure M-TR-6 and the Guidelines, the requirements of this mitigation measure shall control. The purpose of the DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project- or variant-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes.

The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's or variant's off-street facility and blocking any portion of any private street or public right-of-way during project or variant operations for:

1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and
2. For at least three 24-hour periods in any consecutive seven-day period.

The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase or subphase of project construction. A project phase may not begin construction until its DLOP has received Planning approval.

The DLOP may also include, but not limited to, the following measures to reduce potential conflicts:

- **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue~~. Where no alternative location exists,~~ or design driveway or loading dock entrance with sufficient storage for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks.
- **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time.
- **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock.
- **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility.
- **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business.

The DLOP shall be implemented by the project sponsor of the project or variant in accordance with any guidelines issued by the department pursuant to planning code section 155(u).

* Mitigation Measure M-C-TR-3 in draft EIR Table S-1, p. S-14 was revised as follows:

Mitigation Measure M-C-TR-3: Signal Coordination ~~and Transit Signal Priority~~ along 19th Avenue. The project sponsor or vertical developer of the proposed project or variant shall pay a fair-

share contribution for SFMTA to design and install up to two additional closed-circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation].

The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).

* Mitigation Measure M-WI-1b in Table S-1, p. S-14 was revised as follows:

Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet. Before design review approval, ~~if any, but no later than prior to obtaining a building permit~~ for any project or variant building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant or the project architect, as approved by the planning department.

The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26-mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[54] The proposed building(s) shall be wind tunnel tested, or modeling equivalent, using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site:

1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows.
2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern.

If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered:

3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the

[54] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger.

If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply.

* The second sentence of Mitigation Measure M-AQ-1j in draft EIR Table S-1, p. S-29 was revised as follows to correct the proposed project offset and to reflect the revised variant offset numbers:

Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: ~~0.2~~0.5 tons for the project and 0.0 tons for the variant in 2030; ~~2.6~~ 2.8 tons for the project and ~~3.0~~ 3.3 tons for the variant in 2031; ~~and 4.6~~ 4.9 tons for the project and ~~5.0~~ 5.3 tons for the variant in 2032; and 4.9 tons for the project and 5.6 tons for the variant and each year ~~thereafter~~ after full buildout.

5.B Revisions to Chapter 1, Introduction

The project sponsor has elected not to pursue certification of the proposed project or variant as an environmental leadership development project under the Jobs and Economic Improvement through Environmental Leadership Act of 2021 (Senate Bill 7). The record of proceedings website was discontinued and Section 1.D.4, Senate Bill 7, and associated footnotes on draft EIR pp. 1-9 through 1-11 were deleted as follows:

~~1.D.4 Senate Bill 7~~

~~The project sponsor intends to submit an application with the Governor's Office of Planning and Research for certification of the proposed project or variant as an environmental leadership development project under the Jobs and Economic Improvement through Environmental Leadership Act of 2021 (Senate Bill [SB] 7).~~

~~SB 73[3] provides streamlining benefits under CEQA, as described further below, for environmental leadership development projects and defines an environmental leadership development project as the following:~~

- ~~The project is residential, retail, commercial, sports, cultural, entertainment, or recreational in nature;~~
- ~~The project, upon completion, will qualify for Leadership in Energy and Environmental Design gold certification or better;~~
- ~~The project will achieve at least 15 percent greater standard for transportation efficiency than comparable projects;~~
- ~~The project is located on an infill site;~~
- ~~For housing development within a metropolitan planning organization's jurisdiction for which a sustainable communities strategy or alternative planning strategy is in effect, the infill project is~~

> consistent with the general use designation, density, building intensity and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, for which the California Air Resources Board has accepted that the strategy would achieve the greenhouse gas (GHG) emission reduction targets.[4]

In order for the Governor to certify a leadership project, the project must: (1) result in a minimum investment of $100 million dollars in California upon completion of construction; (2) create high-wage, highly skilled jobs that pay prevailing wages and living wages and provide construction jobs and permanent jobs for Californians, and help reduce unemployment; (3) not result in any net additional GHG emissions; (4) comply with requirements for commercial and organic waste recycling; (5) have a binding agreement with the lead agency establishing the mitigation measure and record of proceeding requirements set forth in Public Resources Code sections 21183(e) and (g); (6) agree to pay the costs of the trial court and the Court of Appeal in hearing and deciding any case; and agree to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project, in a form and manner specified by the lead agency for the project.[5] Multifamily residential projects certified as environmental development leadership projects are also required to provide unbundled parking, such that private vehicle parking spaces are priced and rented or purchased separately from dwelling units.[6]

In accordance with the requirements of SB 7, the planning department provided a record of proceedings for the proposed project and variant that can be accessed and downloaded from the following website: www.stonestownadminrecord.com. The record of proceedings includes the EIR and all other documents and materials submitted to, or relied upon by, the lead agency in the preparation of the EIR or the approval of the project. In addition, a document prepared by the lead agency or submitted by the applicant after the date of the release of the draft EIR that is a part of the record of proceedings, and comments received on the draft EIR, will be made available to the public on this same website in a readily accessible electronic format within the timeframes specified by the act.

Within 10 days of the governor certifying the proposed project as an environmental leadership development project, the planning department is required to issue a public notice in no less than 12-point type stating the following:

> "THE APPLICANT HAS ELECTED TO PROCEED UNDER CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF DIVISION 13 OF THE PUBLIC RESOURCES CODE, WHICH PROVIDES, AMONG OTHER THINGS, THAT ANY JUDICIAL ACTION CHALLENGING THE CERTIFICATION OF THE ENVIRONMENTAL IMPACT REPORT (EIR) OR THE APPROVAL OF THE PROJECT DESCRIBED IN THE EIR IS SUBJECT TO THE PROCEDURES SET FORTH IN SECTIONS 21185 TO 21186, INCLUSIVE, OF THE PUBLIC RESOURCES CODE. A COPY OF CHAPTER 6.5 (COMMENCING WITH SECTION 21178) OF DIVISION 13 OF THE PUBLIC RESOURCES CODE IS INCLUDED BELOW."

As required by Public Resources Code section 21185, the Judicial Council adopted rules of court that establish procedures applicable to actions or proceedings brought to attack, review, set aside, void, or annul the certification of the environmental impact report for an environmental leadership development project (certified by the governor pursuant to this act) or the granting of any project approvals that require the actions or proceedings, including any potential appeals therefrom to the

~~Court of Appeals or the Supreme Court, be resolved, to the extent feasible within 270 days of the filing of the certified record of proceedings with the court. This creates an accelerated timeframe for CEQA litigation. The procedures can be found in California Rules of Court.~~

~~The provisions of SB 7 apply to projects that have been certified by the governor as environmental leadership development projects by January 1, 2024, and the project is approved by the lead agency by January 1, 2025. This act remains in effect until January 1, 2026.~~

~~[3] California Public Resources Code section 21178 et seq. and Governor's Office of Planning and Research, California Jobs (AB 900), Governor's Guidelines for Streamlining Judicial Review Under the California Environmental Quality Act Pursuant to AB 900, Updated to Comply with Senate Bill 734 and Assembly Bill 246, accessed July 22, 2019, http://opr.ca.gov/ceqa/california-jobs.html.~~
~~[4] California Public Resources Code section 21180(b).~~
~~[5] California Public Resources Code section 21183.~~
~~[6] California Public Resources Code section 21184.5(a).~~

Due to the deletion of Section 1.D.4 above, the following revision was made to the subheading on draft EIR p. 1-11:

~~1.D.5~~1.D.4 Final EIR and EIR Certification

Due to the deletion of Section 1.D.4 above, the following revision was made to the subheading on draft EIR p. 1-12:

~~1.D.6~~1.D.5 Mitigation Monitoring and Reporting Program

5.C Revisions to Chapter 2, Project Description

The first paragraph on draft EIR p. 2-1 was revised to incorporate the public right-of-way area into the overall description of the project site:

> The project sponsor (Brookfield Properties ~~Development~~) would redevelop the approximately 27 acres of surface parking and surrounding structures in the ~~41~~ 43-acre Stonestown Galleria shopping mall site into a master-planned, multi-phased, mixed-use community as detailed below. …

The last sentence on draft EIR p. 2-1 and the first line on p. 2-2 were revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

> … The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned, and a new ~~straightened and converted to a~~ two-way connection to 19th Avenue (Street A) would be created between Blocks E1 and E3. …

The first paragraph of draft EIR Section 2.C, Project Location and Existing Site Characteristics, p. 2-3, was revised to clarify and include the public right-of-way area into the overall description of the project site:

> The proposed Stonestown Development Project is located on an approximately ~~41~~ 43-acre site in the Lakeshore area in southwest San Francisco (see Figure 2-1). The project site is generally bounded by San Francisco State University (SFSU) Campus to the south; Lowell High School, SFSU housing, and

Buckingham Way to the west; Stonestown Family YMCA, commercial uses, and Eucalyptus Drive to the north; and 19th Avenue to the east (see Figure 2-2, p. 2-5). The project site is fully developed and comprises the 11-acre Stonestown Galleria, approximately 27 acres of surface parking lots and operational uses, a vacant building, ~~and~~ 3 acres of privately owned streets, and 2 acres of public right-of-way.

In response to comments, the text under draft EIR Section 2.D, Project Characteristics and Components, p. 2-7, was revised as follows to clarify the abandonment of a portion of Buckingham Way and creation of a new east–west street between Blocks E1 and E3:

… Transportation and circulation changes would include straightening 20th Avenue between Eucalyptus and Winston drives ~~and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3 (shown as Street A in Figure 2-4). …

The "vehicle parking spaces" row in Table 2-1 on draft EIR p. 2-12 was revised as follows:

Project Characteristics	Existing	Proposed Project	Proposed Project Including Variant
PROPOSED PARKING	**NUMBER (APPROXIMATE)**		
Vehicle parking spaces:	**3,400** 2,450 surface parking spaces 700-space parking garage 250 spaces below shopping mall	**4,250** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,040~~ 2,690 spaces distributed throughout site *850 net new spaces*[e]	**4,450** -700 space parking garage to be demolished -2,450 surface parking to be removed 250 spaces below shopping mall retained +~~190~~ 540 new spaces for expanded parking below shopping mall +770-space new parking garage +Remaining ~~3,240~~ 2,890 spaces distributed throughout site *1,050 net new spaces*[e]
Car-share parking spaces	0	66	68

The private residential open space description was revised in Table 2-1, draft EIR p. 2-13 to be consistent with the proposed Special Use District as follows:

> Approximately ~~36~~ 27 sf per unit ~~if located on balcony, or approximately 48 sf per unit if commonly accessible to residents~~, or as otherwise refined in the planning code.

The proposed rezoning would also include portions of the site that are residential use districts. The proposed project would also create a Stonestown Special Sign District as part of the rezoning. Draft EIR Section 2.D.4, Design for Development on p. 2-14 was revised as follows:

> The proposed project would be rezoned from C-2 (Community Business Districts), RH-1(D) (Residential-House, One Family-Detached), and RM-1 (Residential-Mixed, Low Density) to a Special Use District (SUD) to establish land use controls and incorporate Design Standards and Guidelines (DSGs) to govern future development. In addition, the planning code would be amended to create a new Stonestown Special Sign District that would include the proposed project along with the existing Stonestown Galleria, and that would establish signage controls for the entire 43-acre site.

The text under Section 2.D.6, Vehicle Parking, on draft EIR p. 2-18 was revised as follows:

> In addition to the 250 spaces retained under the shopping mall, expanded 540-space parking garage below the shopping mall and the new 770-space parking garage, the proposed project would provide ~~2,940~~ 2,690 vehicle parking spaces embedded within the proposed building podiums and/or below grade throughout the site (see Figure 2-11). With the variant, ~~3,140~~ 2,890 vehicle parking spaces would be embedded within the proposed building podiums and/or below grade throughout the site, including an additional 200 parking spaces on Block E3E.

Table 2-2 on draft EIR p. 2-20 was revised as follows:

Block	Proposed Project Parking Spaces	Proposed Project Including Variant Parking Spaces
W2 Public Parking Garage	770	770
W3 and W4 Expanded Parking Garage Below Shopping Mall	540	540
Existing Shopping Mall Retained Parking	250	250
Parking spaces in remaining block podiums and/or below grade parking	~~2,940~~ 2,690	~~3,140~~ 2,890
Total	***4,250***	***4,450***

The first paragraph under Section 2.D.8, Transportation and Circulation Plan, draft EIR p. 2-20, was revised as follows for consistency:

> … The primary ~~and secondary~~ access point~~s~~ to the project site would continue to be at 19th Avenue at Winston Drive~~, and Eucalyptus Drive at 20th Avenue, respectively~~. Secondary access points would continue to be at Eucalyptus Drive and 20th Avenue, Winston Drive and Buckingham Way, and 19th Avenue and Buckingham Way. …

In response to comments, the last bullet point at the end of draft EIR p. 2-20 was revised to clarify the range of travel lanes on 20th Avenue:

- **20th Avenue.** The privately owned portion of 20th Avenue between Eucalyptus and Winston drives would be straightened would have two to four travel lanes (predominantly one lane in each direction), and would range between 25 and ~~35~~ 44 feet in width. Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (one through lane in each direction and one lane in each direction for right turns). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one lane in each direction and one lane dedicated for left turns). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only. Conceptual illustrative street sections for 20th Avenue are shown in **Figure 2-14** to **Figure 2-17**, pp. 2-14 to 2-27.

The first bullet on draft EIR p. 2-28 was revised as follows:

- **Buckingham Way.** Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to ~~two~~ three lanes ~~(one lane in each direction)~~ along the frontage of Block E5 near the intersection with 20th Avenue. West of Block E5, Buckingham Way would remain three travel lanes. Along Block E5, Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left-turn lane and one dedicated right-turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right-turn lane and one dedicated left-turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left-turn lane and one dedicated right-turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet. The conceptual illustrative street section for Buckingham Way North is shown in **Figure 2-18**.

The second bullet point on draft EIR p. 2-28 was revised as follows:

- **Street A.** The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be ~~straightened~~ abandoned and ~~converted to~~ a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3 (shown as Street A on Figure 2-12). The westbound approach at 20th Street along Street A would be a right-turn-only lane. Street A would be approximately ~~20~~22 feet wide.

The third bullet point on draft EIR p. 2-28 was revised as follows to reflect the project sponsor's decisions to retain the separated westbound right-turn lane:

- **Winston Drive.** Winston Drive between Block S3 and 20th Avenue would be reduced from four travel lanes (two lanes in each direction) to three lanes (two lanes westbound, one lane eastbound). The separated westbound right-turn lane on Winston Drive at 20th Avenue would be retained. The curved portion of Winston Drive at Block S3 would be converted to a 90-degree corner. The six travel lanes (three lanes in each direction) between 19th and 20th avenues would

be maintained. Winston Drive would be 46 to 66 feet wide. Conceptual illustrative street sections for Winston Drive are shown in **Figure 2-19** and **Figure 2-20**, pp. 2-30 and 2-31.

The fourth bullet point on draft EIR p. 2-28 was revised as follows:

- **Street B.** A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4~~, however it~~ but would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately ~~26~~ 22 feet wide.

Draft EIR Figure 2-12 (p. 2-12), Figures 2-14 through 2-17 (pp. 2-24 to 2-27), and Figures 2-18 through 2-20 (pp. 2-29 to 2-31), were updated to reflect the updated transportation and circulation updates above and to clarify whether the roadways are public or private right-of-way.

The first sentence under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to include the Americans with Disabilities Act (ADA) pathway improvements through Rolph Nichol Jr. Playground.

> Pedestrian and bicycle access would be provided through the northwest portion of the project site, connecting to Rolph Nicol Jr. Playground as shown in Figure 2-21 and Figure 2-22, p. 2-34, respectively. Landscaping and two new Americans with Disabilities Act (ADA) pathway improvements would be included through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive.

The first sentence of the second paragraph under "Pedestrian and Bicycle Network" on draft EIR p. 2-32 was revised to clarify the type of class IV bicycle facilities:

> Two-way (combined or separated) class IV bicycle facilities (protected bike lanes) are proposed on Buckingham Way, 20th Avenue, and Winston Drive.[17] …

The first bullet point on draft EIR p. 2-36 was revised to provide clarification regarding the recycled water system:

- **Recycled Water.** The project site is located within a designated recycled water use area, and the proposed project would ~~provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance~~ comply with San Francisco's Recycled Water Use Ordinance by producing and distributing non-potable water on-site and distributing it to uses within specific buildings or within the project site. The proposed recycled water system would be private and not connected to future City recycled water systems.

In response to a comment, the text on draft EIR p. 2-36 was revised to clarify the non-potable supply uses to be consistent with the water supply assessment as follows:

- **Non-potable Water.** Similarly, the proposed project would comply with San Francisco's Non-potable Water Ordinance and would include the diversion and reuse of water from HVAC/cooling systems, graywater,[20] blackwater,[21] and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas. The proposed project would include graywater and blackwater diversion, treatment, and reuse systems that would provide non-potable water to the project. The graywater (e.g., from showers and washing machines) from both residential and non-residential uses, and blackwater collection from the proposed commercial uses, would be treated at either a centralized treatment plant or

decentralized treatment facilities located within certain buildings or phases as shown in **Figure 2-24** and **Figure 2-25**, p. 2-38. The treatment facilities would include storage tanks, booster pumps, and associated equipment. The treatment facilities would be fully enclosed and would use mechanical filtration, minimizing the potential for odor. The treated graywater would be distributed via a pressurized system of distribution lines within the project streets or open space areas to all of the project site buildings.

* The following bullet was added to the list of approvals by the San Francisco Board of Supervisors on draft EIR p. 2-47:

- Approval of a resolution of intention to establish an Enhanced Infrastructure Financing District

* The following corrections were made to the joint action by the planning commission and the recreation and park commission approvals on draft EIR p. 2-48:

~~JOINT ACTION BY THE PLANNING COMMISSION AND THE~~ RECREATION AND PARK COMMISSION

- ~~Determination~~ Recommendation to the planning commission that the proposed project would have no adverse impact on publicly accessible open space under the jurisdiction of the Recreation and Park Commission ~~after consultation with the Recreation and Parks Commission~~ (planning code section 295)[22]

[22] ~~This determination would only be necessary if the proposed project would shadow a park with a shadow budget.~~

5.D Revisions to Chapter 3, Introduction to the Analysis

In response to a comment, the description of the Parkmerced project in Table 3-1 on draft EIR p. 3-7 was revised as follows:

Parkmerced (2008.0021ENV)

Subsequent phases of the Parkmerced project would add up to 5,679 new residential units to the 152-acre site's existing 3,221 housing units. It would also provide new commercial and retail services and open space. The transportation plan provides a framework and management plan for addressing transit and vehicular travel to and from the neighborhood and would include rerouting of the M-line light rail through the development and five major intersection improvements (including State Route 1/19th Ave), and structured underground parking beneath each block.

The full project has a 15- to 30-year construction horizon, and would include demolition of existing buildings, utility relocation, site clearance, and grading. At buildout, the project would consist of approximately 8,900 dwelling units (including approximately 5,679 new units), approximately 6,252 net new spaces, 310,000 gross square feet of commercial use, 25,000 square feet of educational use, and 164,000 gross square feet of other uses (100,000 square feet of building and maintenance use, and 64,000 square feet of recreation/fitness center/community center).

5.E Revisions to Section 3.A, Historic Architectural Resources

In response to a comment, the text on draft EIR p. 3.A-15 was revised to expand upon the local use of New Formalism:

> Compared to many other midcentury modern styles of architecture defined in the *San Francisco Modern Architecture and Landscape Design, 1935–1970 Historic Context*, New Formalism buildings in San Francisco are relatively rare. This style was most often applied to banks designed from 1963 into the 1970s, including the buildings at 275 Ellis Street (built in 1963, extant), 4947 Third Street (built in 1964, extant), and 2500 Mission Street (built in 1968, extant).[52] Larger-scale examples of institutional buildings in San Francisco designed in the New Formalism style include Kendrick Hall at the University of San Francisco (2100 Fulton Street, built in 1962, extant) and St. Mark's Urban Life Center (1031 Franklin Street, built in 1965, extant).[53] Architects associated with the New Formalism style in San Francisco include George K. Raad (who designed the UA Stonestown Twin Theater at 501 Buckingham Way); Wurster, Bernardi & Emmons; and Milton Pflueger.[54]
>
> The UA Stonestown Twin Theater illustrates the New Formalist style through its strict symmetry, the round-arch, groin-vaulted colonnade that encloses three sides of theater lobby, its flat projecting roofline, the use of extensive glazing to enclose the theater lobby, and the presence of a small sunken courtyard with large aggregate concrete hardscaping and landscaping within concrete planters. The theater demonstrates nearly all of the features that are considered characteristic of the style, apart from a use of high-quality materials like stone. While the building's stylistic elements are limited to its front portion which encloses the lobby, as a freestanding building with a front plaza, the building is more expressive of the formal nature of New Formalism, providing an open-air arcade along three faces of the lobby, articulating the cross-vaulted groined arches, and carrying these design elements into the interior with the inclusion of blind arches along the rear wall of the lobby. The building is an excellent example of the New Formalist style along its primary façade, while the rear of the building is entirely undecorated, in keeping with movie theater typologies that prioritize the decoration of the public-facing façades and entrances of the building.

In response to a comment, the third paragraph of draft EIR p. 3.A-15 was revised as follows for clarity:

> The building functioned continuously as ~~the UA Stonestown Twin Theater~~ a movie theater from 1970 to 2020, and it has been minimally altered. ~~In 1973~~ Originally known as the UA Cinema Stonestown Theater, the ~~original~~ single auditorium was bisected in 1973 to create two smaller auditoriums, and it was renamed the UA Stonestown Twin Theater at that time. In 1998, amenities including a drinking fountain and public telephone were added, and renovations including new auditorium doors and improved restrooms were completed. That same year, the primary (east) façade was altered to include a new accessible entrance. Most recently, the roof was covered with built-up roofing in 2016.

5.F Revisions to Section 3.B, Transportation and Circulation

In response to a comment, draft EIR Table 3.B-1 on p. 3.B-4 was revised as follows:

Table 3.B-1 Roadway Facilities in the Study Area

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
19th Avenue	N-S	3[d]	Vision Zero Network	Residential Throughway	28, 29, M	N/A
~~20th Avenue~~	~~N-S~~	~~1~~	~~N/A~~	~~N/A~~	~~57~~	~~Class III~~
20th Avenue (North of Eucalyptus Drive)	N-S	1	N/A	Neighborhood Residential	N/A	Class III
20th Avenue (South of Eucalyptus Drive)	N-S	1	N/A	N/A	57	Class III
Buckingham Way (North and South)	E-W	1	N/A	Neighborhood Residential	N/A	Class III
Eucalyptus Drive	E-W	1	N/A	Neighborhood Residential	57	—
Font Boulevard	E-W	1	N/A	Boulevard	57	Class III
Holloway Avenue	E-W	1	N/A	Neighborhood Residential	29	Class II
Junipero Serra Boulevard	N-S	3	N/A	Residential Throughway	KT	N/A
Lake Merced Boulevard	N-S	3	Vision Zero Network	Park Edge	57, 58, 18, 29, 122	Class I
Mercedes Way	E-W	1	N/A	Neighborhood Residential	N/A	N/A
Middlefield Drive	N-S	1	N/A	N/A	N/A	N/A
Ocean Avenue	E-W	2	N/A	Residential Throughway/ Commercial Throughway	KT	Class III
Portola Drive	N-S	1	N/A	Residential Throughway	KT, M, 57	Class IV
Sloat Boulevard	E-W	3	N/A	Park Edge/Residential Throughway	18, 58	Class III/ class IV
Sunset Boulevard	N-S	2	Vision Zero Network	Parkway	29	Class I
Wawona Street	E-W	1	N/A	Park Edge/Paseo/ Neighborhood Residential	N/A	N/A

Street Name	Direction	Number of Lanes per direction (typical)	Vision Zero Network Designation[a]	Better Streets Plan Classification	Transit Routes Served[b]	Bicycle Facilities (typical)[c]
West Portal Avenue	N-S	3	N/A	Residential Throughway	KT, M, 57	N/A
Winston Drive	E-W	2	N/A	Neighborhood Residential/ Neighborhood Commercial	58, 122	Class III

SOURCES: *San Francisco General Plan*, 2017; San Francisco Vision Zero High Injury Network, 2017; *San Francisco Better Streets Plan*, 2010

ABBREVIATIONS:

E-W = east–west; N-S = north–south; N/A = value not applicable

NOTES:

The descriptions associated with each street (Vision Zero network, Better Streets Plan Classification, Transit Routes, etc.) are those that apply to some portion of the street near the project site and may not apply to the entire length of the street.

[a] Based on the 2017 Vision Zero Network. Obtained from the San Francisco Transportation Information Map, http://www.sfplanninggis.org/TIM/, accessed September 1, 2022.
[b] The transit routes are operated by Muni, except for the SamTrans Route 122 route.
[c] Bikeway class definitions are provided in the Bicycling Conditions discussion, beginning on p. 3.B-9.
[d] Three travel lanes in each travel direction, with a center-running Muni light-rail line for a portion.

The sixth sentence in the fourth paragraph on draft EIR p. 3.B-52 was revised as follows:

… Vehicles that weigh three tons or more are prohibited on Everglade Drive between Eucalyptus Drive and Sloat Avenue with limited exemptions. None of the other streets within the project study area ~~are~~ is restricted to commercial or oversize vehicles. …

* Mitigation Measure M-TR-1 on draft EIR pp. 3.B-55 to 3.B-56 was revised as follows:

Mitigation Measure M-TR-1: Construction Coordination Plan. The project sponsor of the proposed project or variant shall prepare a construction coordination plan (plan or plans) for each construction phase ~~as shown in Figure 2-20 and Table 3.B-14 in the EIR~~ or subphase, including to address proposed project or variant construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water, electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized.

The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary.

Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to:

- Blue Book section 3: Traffic Lane Closure Requirements
- Blue Book section 5: Sidewalk Closures
- Blue Book section 7: Transit Operations
- Blue Book section 9: Bicycle Routes
- Public Works Code section 2.4.20(b): Contractor Parking Plans
- Public Works Code section 724: Temporary Occupancy of Street
- Public Works Subdivision Code
- Public Works Subdivision Regulations

Each plan shall also address how the proposed construction activities within the project or variant site ~~would~~ will be coordinated with construction activities within Caltrans' right-of-way.

* The third paragraph of Mitigation Measure M-TR-4a on draft EIR, p. 3.B-68 was revised as follows to clarify the timing of when monitoring shall begin:

The project sponsor shall begin monitoring when Phase 1 operations overlaps with ~~any construction~~ Phase 3 construction, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions.

* Mitigation Measure M-TR-4b on draft EIR p. 3.B-69 was revised as follows to clarify the timing, protocol, and implementation:

Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure. The project sponsor ~~of the project or variant shall implement transit travel time reduction measure. Such a measure~~ shall ~~include the preparation and implementation of a coordination and transit signal priority~~ coordinate and fund traffic signal coordination with San Francisco Municipal Transportation Agency (SFMTA) to address potential northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way (S)~~, subject to San Francisco Municipal Transportation Agency (SFMTA) review and approval~~. The project sponsor, in coordination with SFMTA, shall be responsible for implementation as outlined in the Transportation Exhibit of the Development Agreement.

* Mitigation Measure M-TR-6 on draft EIR pp. 3.B-75 to 3.B-76 was revised as follows:

Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP). The project sponsor of the project or variant shall prepare and submit a DLOP to the planning department in accordance with this Mitigation Measure M-TR-6, and any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects) ("Guidelines"), in consultation with the San Francisco Municipal Transportation Agency (SFMTA). In the event of a conflict between the requirements of this Mitigation Measure M-TR-6 and the Guidelines, the requirements of this mitigation measure shall control. The purpose of the DLOP is to reduce potential conflicts between driveway and loading operations, including passenger and freight

loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project- or variant-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes.

The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's or variant's off-street facility and blocking any portion of any private street or public right-of-way during project or variant operations for:

1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and
2. For at least three 24-hour periods in any consecutive seven-day period.

The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase or subphase of project construction. A project phase may not begin construction until its DLOP has received Planning approval.

The DLOP may also include, but not limited to, the following measures to reduce potential conflicts:

- **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue~~. Where no alternative location exists,~~ or design driveway or loading dock entrance with sufficient storage for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks.
- **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections, and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time.
- **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock.

- **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility.
- **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business.

The DLOP shall be implemented by the project sponsor of the project or variant in accordance with any guidelines issued by the department pursuant to planning code section 155(u).

* Mitigation Measure M-C-TR-3 on draft EIR p. 3.B-82 was revised as follows:

Mitigation Measure M-C-TR-3: Signal Coordination ~~and Transit Signal Priority~~ along 19th Avenue. The project sponsor or vertical developer of the proposed project or variant shall pay a fair-share contribution for SFMTA to design and install up to two additional closed-circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation].

The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).

5.G Revisions to Section 3.D, Air Quality

* The second sentence of Mitigation Measure M-AQ-1j on draft EIR p. 3.D-46 was revised as follows to correct the proposed project offset and to reflect the revised variant offset numbers:

Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: ~~0.2~~ 0.5 tons for the project and 0.0 tons for the variant in 2030; ~~2.6~~ 2.8 tons for the project and ~~3.0~~ 3.3 tons for the variant in 2031; ~~and 4.6~~ 4.9 tons for the project and ~~5.0~~ 5.3 tons for the variant in 2032; and 4.9 tons for the project and 5.6 tons for the variant and each year ~~thereafter~~ after full buildout.

5.H Revisions to Section 3.E, Wind

* Mitigation Measure M-WI-1b on draft EIR pp. 3.E-9 to 3.E-10 was revised as follows:

Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet. Before design review approval, ~~if any, but no later than prior to obtaining a building permit~~ for any project or variant building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant or the project architect, as approved by the planning department.

The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26-mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[55] The proposed building(s) shall be wind tunnel tested, or modeling equivalent, using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site:

1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows.
2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern.

If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered:

3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger.

If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply.

* The first sentence under "Significance after Mitigation" on draft EIR p. 3.E-20 was corrected to refer to the applicable mitigation measures:

Although Mitigation Measure M-WI-1a through M-WI-1d would reduce wind hazard exceedances to the maximum extent feasible, it cannot be stated with certainty that no wind hazard exceedances would result from implementation of the proposed project or variant, in combination with cumulative projects; therefore, this impact would be ***significant and unavoidable with mitigation***.

[55] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

5.I Revisions to Section 3.F, Shadow

* The second sentence in the first paragraph on draft EIR p. 3.F-24 was revised as follows to reflect refinements in the shadow calculations:

> Net new shadow coverage on the park in winter would decline from approximately 74 percent early in the morning to ~~20~~ 17.8 percent by noon and would be ~~less than 10~~ 5.3 percent by 3 p.m.

5.J Revisions to Section 3.G, Utilities and Service Systems

In response to a comment, the second paragraph on draft EIR p. 3.G-1 was revised as follows:

> San Francisco's ~~Hetch Hetchy~~ regional water system, operated by the San Francisco Public Utilities Commission (SFPUC), supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and ~~27~~ 26 wholesale customers in Alameda, Santa Clara, and San Mateo counties. The system supplies an average of 85 percent of its water from the Tuolumne River watershed, stored in the Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an in-city distribution system that serves retail customers in San Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, ~~and~~ recycled water, and non-potable water.

In response to a comment, the second paragraph on draft EIR p. 3.G-2 was revised as follows:

> In December 2018, the State Water Resources Control Board (state water board) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment), to establish water quality objectives with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. Specifically, the Bay-Delta Plan Amendment requires the release of 30 to 50 percent of the unimpaired flow[56] from the three tributaries from February through June every year, whether it is wet or dry. In SFPUC modeling of the new flow standard, it is assumed that the required release from the Tuolumne River is 40 percent of unimpaired flow. During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed.

In response to a, the third paragraph on p. 3.G-2 was revised as follows:

> If the Bay-Delta Plan Amendment is implemented, the SFPUC would be able to meet the projected demand in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~ and corresponding water use reductions throughout the SFPUC's regional water system service area, including San Francisco. Without the

[56] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.

implementation of the Bay-Delta Plan Amendment, the SFPUC would not experience shortages until the fourth and fifth year of a multi-year drought at 2045 levels of projected demand.

In response to a comment, the last paragraph on draft EIR p. 3.G-2 was revised as follows:

In recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [state water board] as early as possible after December 1, 2019." In accordance with the state water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a substitute agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the state environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement. To date, those negotiations are ongoing.

In response to a comment, the third paragraph and footnote 284 on draft EIR p. 3.G-3 was revised as follows:

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve overall water supply resilience through the Alternative Water Supply Planning Program. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant[284] and the 2020 plan~~.

~~[284] A water supply assessment was prepared for the project using the variant projected demand because it represents the most conservative buildout for the project site from a water demand perspective.~~

In response to a comment, the last paragraph on draft EIR p. 3.G-8 was revised as follows:

The proposed project or variant would include the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to a comment, the first full paragraph on draft EIR p. 3.G-12 was revised as follows:

The SFPUC adopted a water supply assessment for the proposed project on October 24, 2022.[25] The water supply assessment for the variant identifies the project's total water demand, including a breakdown of potable and non-potable water demands.[26] The proposed project or variant is subject to San Francisco's Non-potable Water Ordinance (San Francisco Health Code article 12C). The Non-potable Water Ordinance requires new ~~commercial, mixed-use, and multi-family residential~~ development projects ~~with 250,000~~ of 100,000 gross square feet or more ~~of gross floor area~~ to install and operate an onsite non-potable water system and meet certain water demands with the onsite non-potable water. ~~Such projects must meet their toilet and urinal flushing and irrigation demands through the collection, treatment, and use of available graywater, rainwater, and foundation~~

~~drainage. While not required, projects may use treated blackwater or stormwater if desired.~~ Commercial buildings that install building-by-building alternate water source systems must meet toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate (water vapor collected from air conditioning systems). Residential and mixed-use buildings must meet toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project or variant would meet the requirements of the Non-potable Water Ordinance ~~by using treated commercial blackwater, graywater, and rainwater for toilet and urinal flushing and irrigation~~ with the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

In response to a comment, the last paragraph on draft EIR p. 3.G-13 was revised as follows:

Potable water to meet the site's potable water and fire flow demands would be supplied to the project site from the SFPUC's regional water system, via the in-city low-pressure water distribution system, described above. The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections,[27] ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities. Therefore, the proposed project or variant would not require construction of new or expanded potable water distribution facilities.

* The second to last sentence and associated footnote under "Low-Pressure Water System" on draft EIR p. 3.G-14 was revised as follows to reflect the updated fire flow demand:

Fire flow demands of ~~1,500~~ 2,500 gallons per minute would be met throughout the project site and pressures were above the minimum residual pressure requirement of 20 pounds per square inch.[307]

[307] Carlson, Barbee & Gibson, Inc., ~~*Stonestown Mall Water System Modelling Low Pressure Water System Design Recommendations*, October 28, 2022. In this document 19th Avenue is referred to as "Monte Vista Drive."~~ Draft Infrastructure Plan, June 2023.

In response to a comment, the last paragraph on draft EIR p. 3.G-14 was revised as follows:

The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~ demand projections, supplies for which would be accommodated by the existing regional water treatment and transmission facilities. The proposed project or variant's population and employment growth is within the projected growth that is the basis for ongoing improvements to the emergency firefighting water system. The proposed project or variant would reduce stormwater flows to existing combined sewer system facilities consistent with the City's Stormwater Management Requirements and Design Guidelines. For these reasons, the proposed project or variant would not require construction of new or expanded water or stormwater drainage facilities during construction or operation, and this impact would be ***less than significant***.

In response to a comment, the first paragraph under "Operation" on draft EIR p. 3.G-15 was revised as follows:

> Water use at full buildout is estimated at 90.74 million gallons per year,[57] and would include irrigation, HVAC/cooling, and residential and commercial uses, such as toilets, lavatory faucets, and kitchen faucets. The proposed project or variant would ~~include the diversion, treatment, and reuse of graywater and blackwater for urinals, irrigation, and cooling towers. Graywater and blackwater collected from showers and washing machines would be treated prior to reuse onsite at a treatment plant or facility located within the project site~~ meet the requirements on the Non-potable Water Ordinance by the diversion and reuse of water from HVAC/cooling systems, graywater, commercial blackwater, and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation for landscaped areas.

* The last paragraph on draft EIR p. 3.G-21 was revised to provide clarification regarding the recycled water system:

> In addition, ~~while recycled water is not yet available for the site,~~ the proposed project or variant would ~~install distribution facilities for recycled water to ensure that such water, when available, could be used for non-potable applications such as irrigation and toilet or urinal flushing~~ produce its own non-potable water on-site and would distribute it to non-potable uses within specific buildings or within the project site, as applicable per the Infrastructure Plan. The proposed system(s) would be private and would not connect to future City recycled water systems, should they ever be extended to the vicinity of the project. Compliance with local regulatory requirements would reduce the project demand for potable water and would not result in direct or indirect environmental impacts discussed above. Therefore, this impact would be ***less than significant***.

[57] This discussion evaluates water use at full buildout of the proposed variant because the variant includes more residential units and institutional space, and consequently greater water use, than the proposed project.

5.K Revisions to Chapter 5, Alternatives

In response to a comment, draft EIR Table 5-3, p. 5-30, was revised as follows:

Table 5-3 Land Use Characteristics and Estimated Vehicle Trips, Alternative C: Partial Preservation and Relocated Parking Alternative

Land Use Type	Project Vehicle Trips by Land Use (Weekday P.M. Peak Hour)	Alternative C Vehicle Trips (Weekday P.M. Peak Hour)	Net Change
Residential Use	407	401	(6)
Retail Sales and Services Use	492	480	(12)
Non-Retail Sales and Service Use	172	172	0
Hotel	29	29	0
Institutional Use	117	108	(9)
Childcare	32	32	0
Total	***1,249***	***1,222***	***~~(275)~~ (27)***
Estimated Overall Vehicle Trip Percentage Change (%)			***(2.2%)***

NOTES:

Because different land use types have different trip generations rates, vehicle trip reduction is estimated for each proposed land use.

It is assumed that the proposed institutional use would include up to 15,000 square feet for childcare facility.

Totals may not sum due to rounding.

Numbers shown in parentheses indicate a negative amount.

These totals include Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event). See Appendix D.1, Travel Demand Memorandum, for more details.

In response to a comment, the footnotes of Table 5-12, pp. 5-65 through 5-77, was revised as follows:

CEQA SIGNIFICANCE DETERMINATION:
NI = No Impact; LTS = Less than significant; LTSM = Less than significant with mitigation; SUM = Significant and unavoidable with mitigation
All SUM and SU impacts are shown in **bold**.
= (equal to); < (less than); > (greater than)

NOTE:
[a] See EIR Chapter 3 and Appendix B for complete impact statements.

5.L Revisions to Initial Study Section E.1, Land Use and Planning

The second paragraph under Impact LU-1 on initial study p. 8 (see draft EIR Appendix B) was revised as follows to be consistent with draft EIR Chapter 2, Project Description, text changes:

> Proposed modifications to existing streets include straightening 20th Avenue between Eucalyptus and Winston drives~~ and straightening the northeast portion Buckingham Way~~, abandoning the portion of Buckingham Way between 19th and 20th Avenues, and creating a new east–west street between Blocks E1 and E3.

5.M Revisions to Initial Study Section E.8, Greenhouse Gas Emissions

The following revisions to initial study Section E.8, Greenhouse Gas Emissions, were made to reflect updates to the regulatory setting for greenhouse gas emissions.

* The last paragraph and associated footnotes on initial study p. 46 and first two lines on p.47 were revised as follows:

> For the post-2030 period, ~~Executive Order B-55-18 establishes a~~ Assembly Bill 1279, the California Climate Crisis Act, codifies the statewide goal of achieving ~~carbon neutrality~~ net-zero GHG emissions as soon as possible, but no later than 2045, and achieving and maintaining net negative emissions thereafter. AB 1279 also requires that the state reduce anthropogenic emissions to 85 percent below 1990 levels by 2045. The ~~next update to the scoping plan, the 2022 climate change scoping plan, will~~ 2022 Scoping Plan was adopted by CARB on December 16, 2022, and assesses progress toward achieving the 2030 target under the California Global Warming Solutions Act of 2016 ~~2030 target~~ and laying out a path to achieve carbon neutrality by ~~mid-century~~ 2045 pursuant to ~~Executive Order B-55-18~~ AB 1279.[132,~~133~~]
>
> [132] California Air Resources Board, ~~*AB 32 Climate Change Scoping Plan*~~ *2022 Scoping Plan for Achieving Carbon Neutrality*, ~~https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan~~ https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents, accessed ~~June 6, 2022~~ April 8, 2023.
> [133] ~~On November 16, 2022, CARB published the *2022 Scoping Plan for Achieving Carbon Neutrality*, https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf. The 2022 Scoping Plan is going to the CARB board for adoption on December 16, 2022.~~

* The second full paragraph on initial study p. 48 was revised as follows:

> These sector-based GHG reduction targets are more ambitious than those set forth in ~~Executive Order B-30-15~~ SB 32 (e.g., a 61 percent reduction in sector-based GHG emissions compared to 1990 levels by 2030 rather than a 40 percent reduction by 2030) and ~~Executive Order B-55-18~~ AB 1279 (e.g., achieving ~~carbon neutrality~~ net zero GHG emissions by 2040 rather than by 2045). The consumption-based targets are consistent with the 2030 goal of Executive Order B-30-15 and the 2050 goal of Executive Order S-3-05 (80 percent below 1990 levels, by 2050).

* New text and revisions to initial study pp. 49 to 50 were made as follows:

> The July 2021 GHG ordinance required the San Francisco Department of the Environment to prepare and submit to the mayor a climate action plan, which was released in December 2021. The climate action plan, which is to be updated every five years, carries forward the efforts of the city's previous climate action plans and charts a path toward meeting the GHG commitments stated in the Paris Agreement (e.g., limit global warming to 1.5 degrees Celsius) as well as the reduction targets adopted within the GHG ordinance. The climate action plan incorporates an equity framework to address historic inequities; prioritizes the social, economic, and environmental benefits from implementing the climate action plan; and ensures that those benefits are distributed equitably. To support the updated 2021 GHG ordinance, the city prepared the 2021 Climate Action Plan in 2022.[138a] The 2021 Climate Action Plan is a roadmap for meeting the City's GHG emissions reduction goals, which are:
>
> - An interim target of cutting sector-based emissions 61 percent below 1990 levels by 2030; and
> - Net-zero sector-based emissions by 2040, a 90 percent reduction from 1990 levels.

These goals align with the updated GHG ordinance goals and are more aggressive than the State's 2030 and 2045 GHG emission reduction targets, as discussed above.

San Francisco has developed many plans and programs for reducing the city's contribution to global climate change and meeting the goals of ordinance 81-08. The ~~2017~~ 2023 GHG Reduction Strategy Update[139] documents city actions related to pursuing cleaner energy, reducing energy consumption, supporting alternative transportation, and implementing solid waste policies. For instance, the city has implemented mandatory requirements and incentives that have measurably reduced GHG emissions, including, but not limited to, requirements for increased energy efficiency in new and existing buildings, requirements for the installation of solar panels or vegetation on roofs (i.e., living roofs), implementation of a green building strategy, implementation of a transportation sustainability program, adoption of a zero-waste strategy, adoption of a construction and demolition debris recovery ordinance, creation of a solar energy generation subsidy, incorporation of alternative-fuel vehicles in the city's transportation fleet (including buses), and adoption of a mandatory recycling and composting ordinance. The strategy also includes specific regulations for new development, which would reduce GHG emissions generated by anticipated future development. These GHG emissions reduction actions resulted in a 41 percent reduction in GHG emissions in 2019 compared with 1990 levels.[140,141,141a] This level of GHG emissions substantially surpasses the 2020 and 2030 goals in the air district's 2017 Clean Air Plan, Executive Orders S-3-05 and B-30-15, California Global Warming Solutions Act, California Global Warming Solutions Act of 2016, and the city's 2017 GHG emissions reduction goal. The 2023 GHG Reduction Strategy Update incorporates the 2021 CAP's GHG emissions targets and strategies.

The July 2021 GHG ordinance required the San Francisco Department of the Environment to prepare and submit to the mayor a climate action plan, which was released in December 2021. The climate action plan, which is to be updated every five years, carries forward the efforts of the city's previous climate action plans and charts a path toward meeting the GHG commitments stated in the Paris Agreement (e.g., limit global warming to 1.5 degrees Celsius) as well as the reduction targets adopted within the GHG ordinance. The climate action plan incorporates an equity framework to address historic inequities; prioritizes the social, economic, and environmental benefits from implementing the climate action plan; and ensures that those benefits are distributed equitably.[142]

[138a] City of San Francisco, San Francisco's Climate Action Plan 2021, https://sfenvironment.org/climateplan, accessed April 12, 2023.
[139] San Francisco Planning Department, *2023~~2017~~ Greenhouse Gas Reduction Strategy Update*, ~~July 2017~~ Updated October 2023, https://sfplanning.org/project/greenhouse-gas-reduction-strategies, accessed ~~June 6, 2022~~ December 5, 2023.
[141a] San Francisco Department of the Environment, *San Francisco's 2020 Carbon Footprint*, https://sfenvironment.org/carbonfootprint, accessed September 12, 2023. San Francisco's 2020 carbon footprint inventory found that GHG emissions reduction actions resulted in a 48 percent reduction in GHG emissions in 2020 compared to 1990. It is uncertain the degree to which the decrease may have been attributable to the effects of the pandemic.

* The following text was added to the end of the first paragraph on initial study p. 51.

In December 2021, the U.S. EPA finalized the national greenhouse gas emissions standards rule, which is expected to result in a projected industry-wide fuel economy of 40 miles per gallon by 2026, an approximately 25 percent increase over the previous standard.[151] In 2022, CARB approved the Advanced Clean Cars II Program for model years 2026–2035, which requires that all new passenger cars, trucks, and SUVs sold in California be zero emissions by 2035.[151a]

[151a] California Air Resources Board, Advanced Clean Cars II Regulations: All New Passenger Vehicles Sold in California to be Zero Emissions by 2035, https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii, accessed April 8, 2023.

* The following text was added to the end of the second full paragraph on initial study p. 52:

> Public Resources Code chapter 547, statutes of 2015[58] increased the stringency of the renewable portfolio standard. Public Resources Code chapter 547, statutes of 2015, establishes a renewable portfolio standard that calls for 50 percent of electricity to come from renewable sources by 2030, along with interim targets of 40 percent by 2024 and 45 percent by 2027. California Public Utilities Code, sections 399.11, 399.15, 399.30, and 454.53 accelerates the renewable energy targets that were set by Public Resources Code chapter 547, statutes of 2015 from 50 percent to 60 percent. SB 1020, signed on September 16, 2022, requires that renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to end-use customers by December 31, 2035; 95 percent of all retail sales to end users by December 31, 2040; 100 percent of all retail sales to end users by December 31, 2045; and 100 percent of electricity procured to serve all state agencies by December 31, 2035.

* The following text was added to the first and second bullet points on initial study p. 54:

- Project does not include natural gas ~~and~~.
- Project would not result in wasteful, inefficient, or unnecessary energy use.
- Project would result in VMT per capita that is 15 percent below the regional average ~~and~~ for residential and office projects and result in no net increase in existing VMT for retail projects.
- Project would meet the CALGreen Tier 2 off-street electric vehicle requirement.

* The second and third paragraphs on initial study p. 54 was revised as follows:

> Given that the city's GHG emissions reduction targets are more aggressive than the state's 2030 and 2045 GHG emissions reduction targets, the city GHG ordinance is consistent with the goals of statewide executive orders and bills (i.e., California Global Warming Solutions Act, California Global Warming Solutions Act of 2016, AB 1279, and Executive Orders S-3-05, B-30-15, B-55-18). ~~Therefore,~~ Because the 2023 GHG Reduction Strategy Update incorporates the 2021 Climate Action Plan, which is consistent with the statewide GHG goals for 2030 and 2045, actions that are consistent with the ~~2017~~ 2023 GHG Reduction Strategy Update would be consistent with the state's GHG goals and would not conflict with an applicable plan or generate GHG emissions that would make a considerable contribution to global climate change.
>
> The air district has reviewed the 2010 GHG reduction strategy and concluded that aggressive GHG reduction targets and comprehensive strategies like San Francisco's help the bay area move toward reaching the state's California Global Warming Solutions Act goals and also serve as a model from which other communities can learn.[162] Subsequent updates including the 2017 and 2023 GHG Reduction Strategies have only strengthened the City's GHG reduction requirements. Although the California Global Warming Solutions Act milestone year of 2020 passed just two years ago, San Francisco has already met the 2030 GHG reduction goal of the California Global Warming Solutions

[58] California Health and Safety Code section 44258.5; California Labor Code section 1720; California Public Resources Code sections 25310, 25943, 25302.2, and 25327; California Public Utilities Code chapter 2.3, part 1, division 1, sections 359, 399.4, 399.11, 399.12, 399.13, 399.15, 399.16, 399.18, 399.21, 399.30, 454.55, 454.56, 701.1, 740.8, 9505, 9620, 337, 352, 237.5, 365.2, 366.3, 454.51, 454.52, 740.12, 9621, 9622.

Act of 2016 (40 percent below 1990 levels). San Francisco's updated GHG ordinance includes a pathway to carbon neutrality by 2040 and the 2050 goals of the California Global Warming Solutions Act of 2016, ensuring that the city will continue to serve as a model for other communities. Meeting the emissions targets of the California Global Warming Solutions Act of 2016 as well as longer-term goals would result in an overall annual net decrease in GHG emissions compared with current levels and account for the projected increases in emissions resulting from anticipated growth.

The last paragraph on initial study p. 56 was revised as follows:

The project sponsor is required to comply with these regulations, which have proven effective as the city's GHG emissions have decreased 41 percent in 2019 when compared to 1990 emissions levels, which far exceeds the statewide ~~and regional~~ 2020 GHG reduction target~~s~~ (1990 levels) and achieves the city's local 2025 target (40 percent below 1990 levels) six years in advance of the target year. Furthermore, the city's GHG emission reductions in 2019 also met the statewide ~~and regional~~ 2030 target~~s~~ (40 percent below 1990 levels) more than 10 years in advance of the target year. This progress puts the City on the emission reduction trajectory to meet the 2030 target (61 percent below 1990 levels) and the 2045 target (90 percent below 1990 levels), as envisioned in the 2021 CAP. The City will continue to update its regulations and ordinances for new development to implement the GHG emission reduction strategies and measures in the 2021 CAP to achieve the City's 2030 and 2045 targets. These new regulations and ordinances will apply to the proposed project or variant, or portions of the proposed project or variant, as individual development applications are submitted to the City for approval. The City will update its GHG Reduction Strategy to incorporate these new regulations. Therefore, because the proposed project or variant would be subject to regulations adopted to reduce GHG emissions, the proposed project or variant would be consistent with San Francisco's 2023 GHG reduction strategy and the 2021 CAP and would not generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations.

* The first paragraph on initial study p. 57 was revised as follows:

~~Therefore~~ Furthermore, because the proposed project or variant would be consistent with the City's 2023 GHG reduction strategy and 2021 CAP, the proposed project or variant it would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan, and would not conflict with these plans.

* The third sentence in the last paragraph on initial study p. 57 was revised as follows:

The proposed project or variant would also be consistent with the GHG reduction goals of executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan, and would not conflict with these plans.

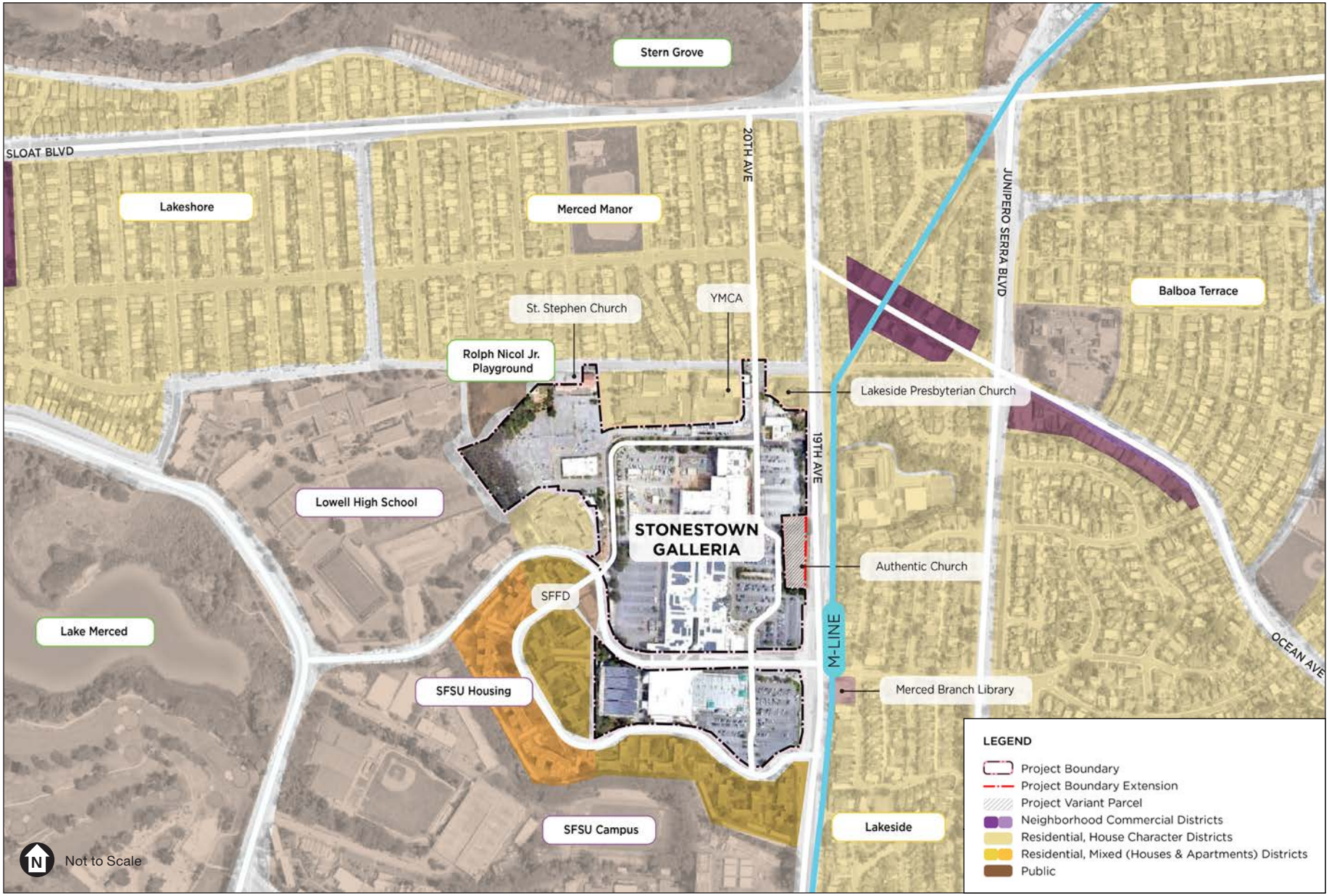
5.N Revisions to Figures

The following draft EIR figures were revised to reflect the changes to the project description as outlined in Chapter 2 and minor corrections in response to comments in Chapter 4 of this RTC:

- Figure 2-2, Project Site and Adjacent Land Uses
- Figure 2-7, Proposed Site Sections through West and East Parcels
- Figure 2-8, Proposed Site Sections along 19th Avenue
- Figure 2-9, Proposed Site Sections through North and South Parcels
- Figure 2-12, Proposed Street Plan
- Figure 2-13, Proposed Intersection Controls
- Figure 2-14, 20th Avenue Illustrative Section A
- Figure 2-15, 20th Avenue Illustrative Section B
- Figure 2-16, 20th Avenue Illustrative Section C
- Figure 2-17, 20th Avenue Illustrative Section D
- Figure 2-18, Buckingham Way North Illustrative Section
- Figure 2-19, Winston Drive Illustrative Section A
- Figure 2-20, Winston Drive Illustrative Section B
- Figure 2-21, Proposed Pedestrian Network
- Figure 2-23, Proposed Potable Water Plan
- Figure 2-24, Proposed Non-Potable Water Plan (Centralized Treatment Option)
- Figure 2-25, Proposed Non-Potable Water Plan (Decentralized Treatment Option)
- Figure 2-26, Proposed Combined Sewer System Plan
- Figure 3.D-1, Sensitive Receptors
- Figure 5-1, Alternative B: Full Preservation and Relocated Parking Alternative
- Figure 5-2, Alternative C: Partial Preservation Alternative

The following note was added to the legends on Figures 2-7 to 2-9:

~~CEQA Heights~~ Maximum Building Envelope for Shadow and Wind Analyses

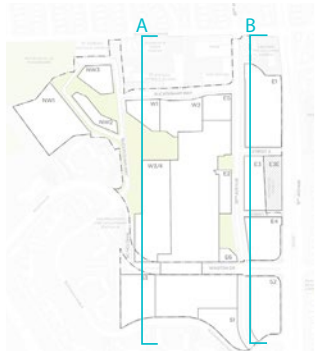


SOURCE: ESA, 2022; Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

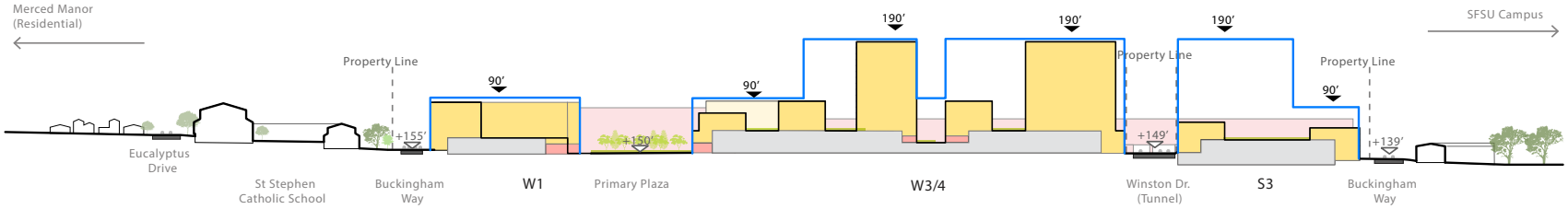
FIGURE 2-2

PROJECT SITE AND ADJACENT LAND USES (REVISED)



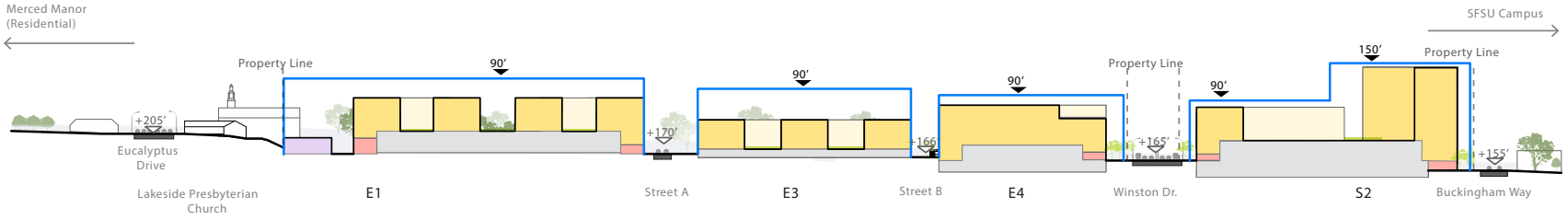
Section A

Section Through West Parcels - Looking East



Section B

Section Through East Parcels - Looking East



Note: Proposed topographic/grading elevations to be further refined in a future phase. Buildings are an illustrative representation and subject to change.

Legend

- Maximum Building Envelope for Shadow and Wind Analyses
- +00' Elevation Above Sea Level
- 00' Maximum Parcel Height
- Section Cut Line

Illustrative Buildings

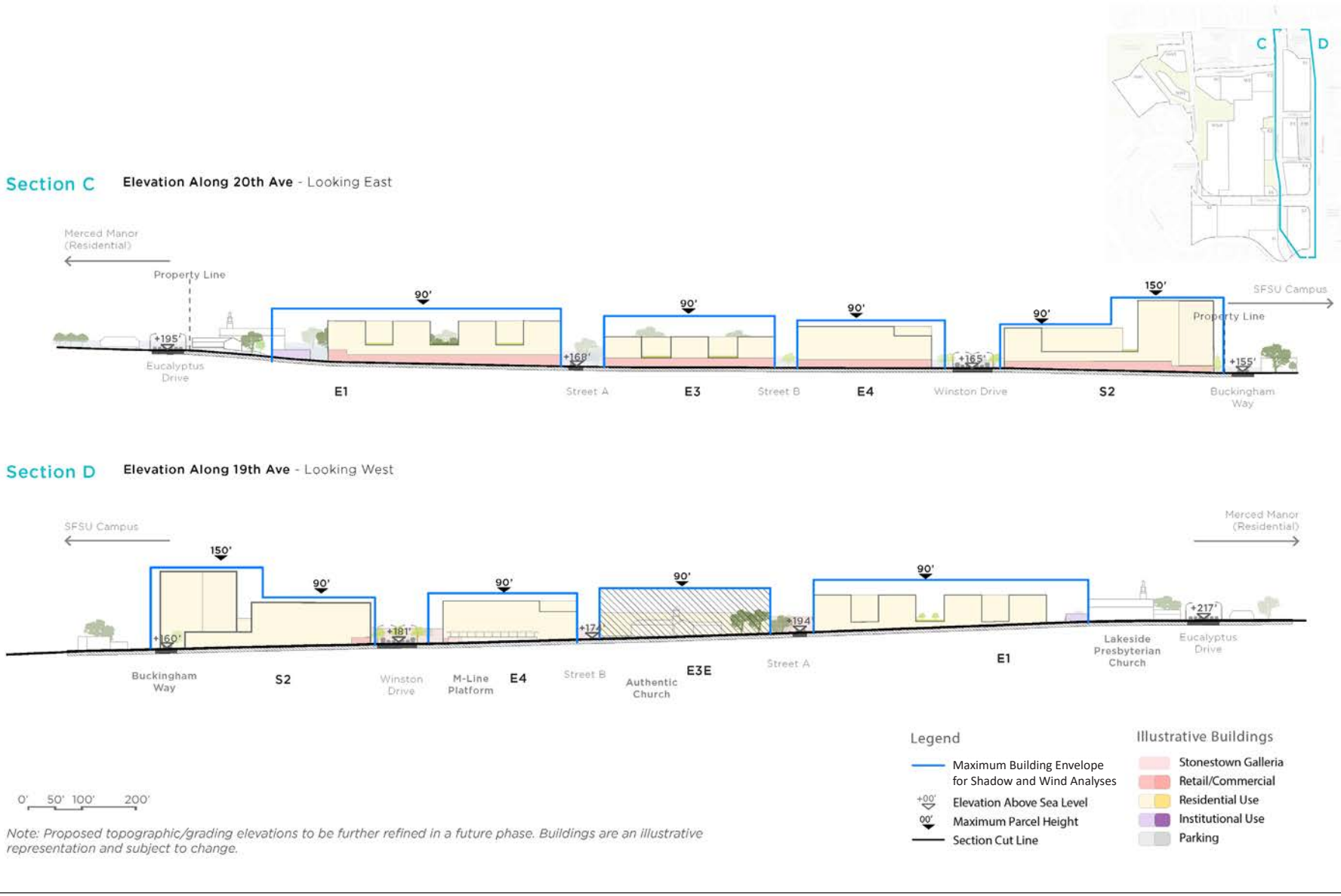
- Stonestown Galleria
- Retail/Commercial
- Residential Use
- Institutional Use
- Parking

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-7

PROPOSED SITE SECTIONS THROUGH WEST AND EAST PARCELS (REVISED)

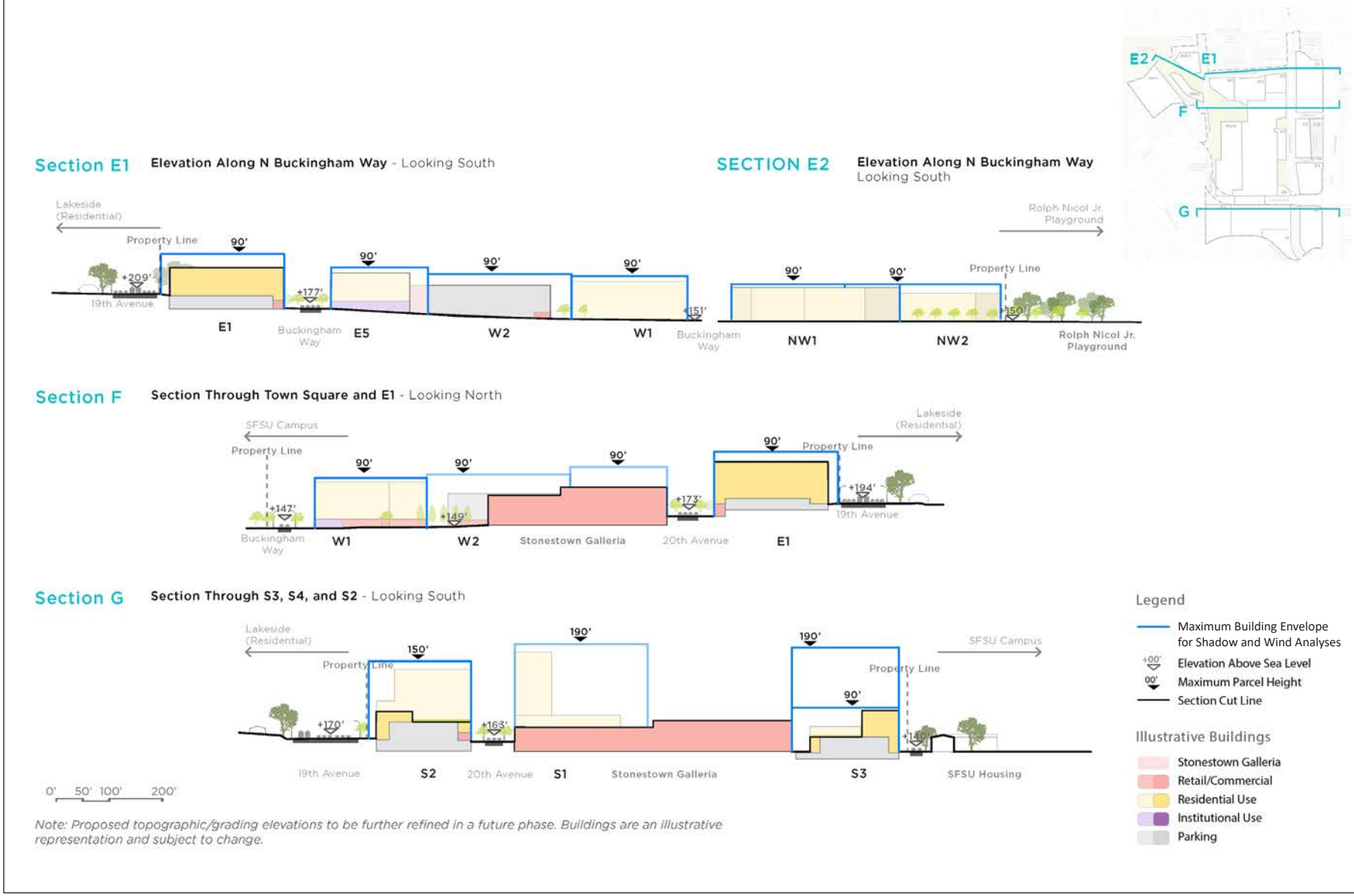


SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-8

PROPOSED SITE SECTIONS ALONG 19TH AVENUE (REVISED)



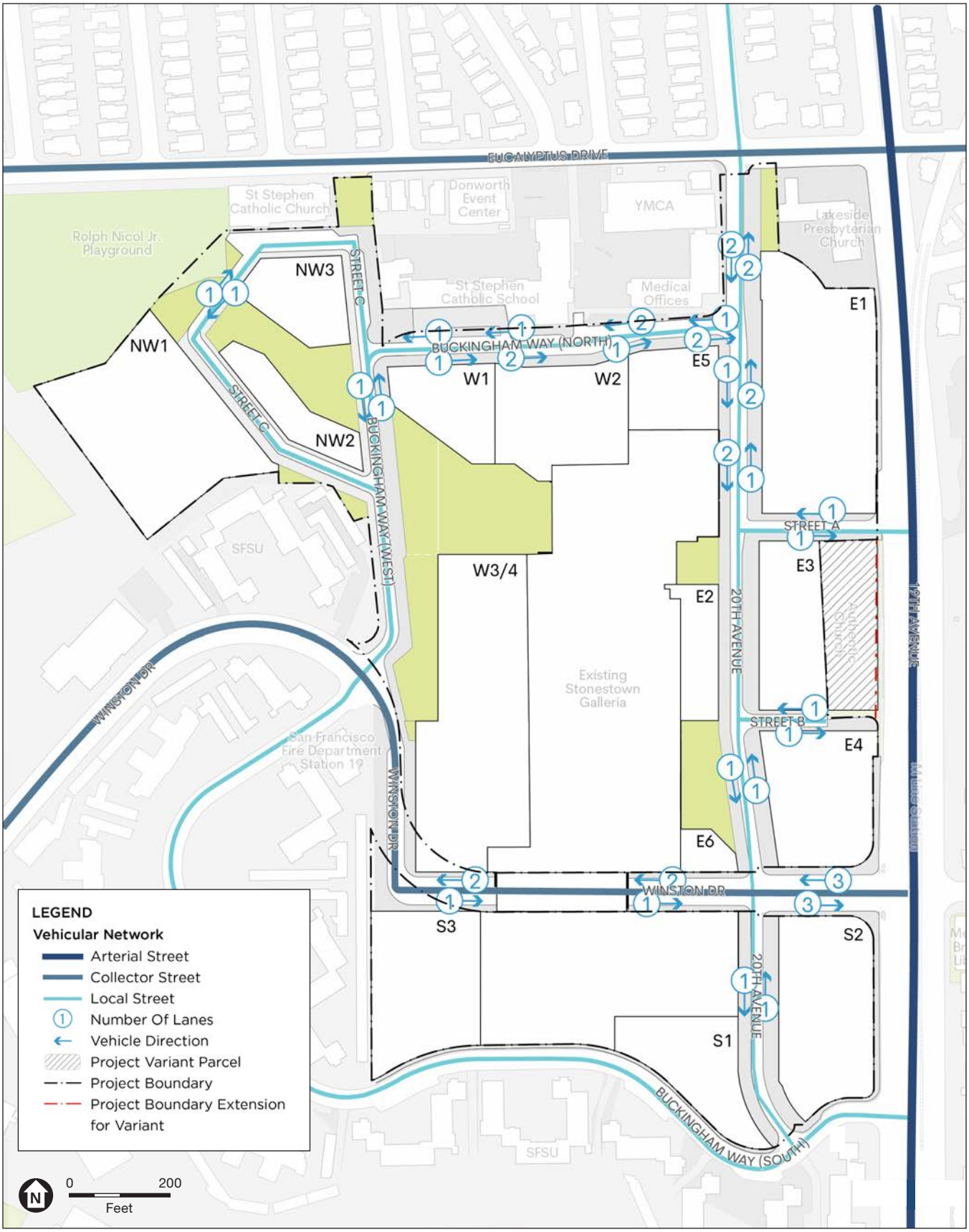
Note: Proposed topographic/grading elevations to be further refined in a future phase. Buildings are an illustrative representation and subject to change.

SOURCE: Brookfield Properties and SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 2-9

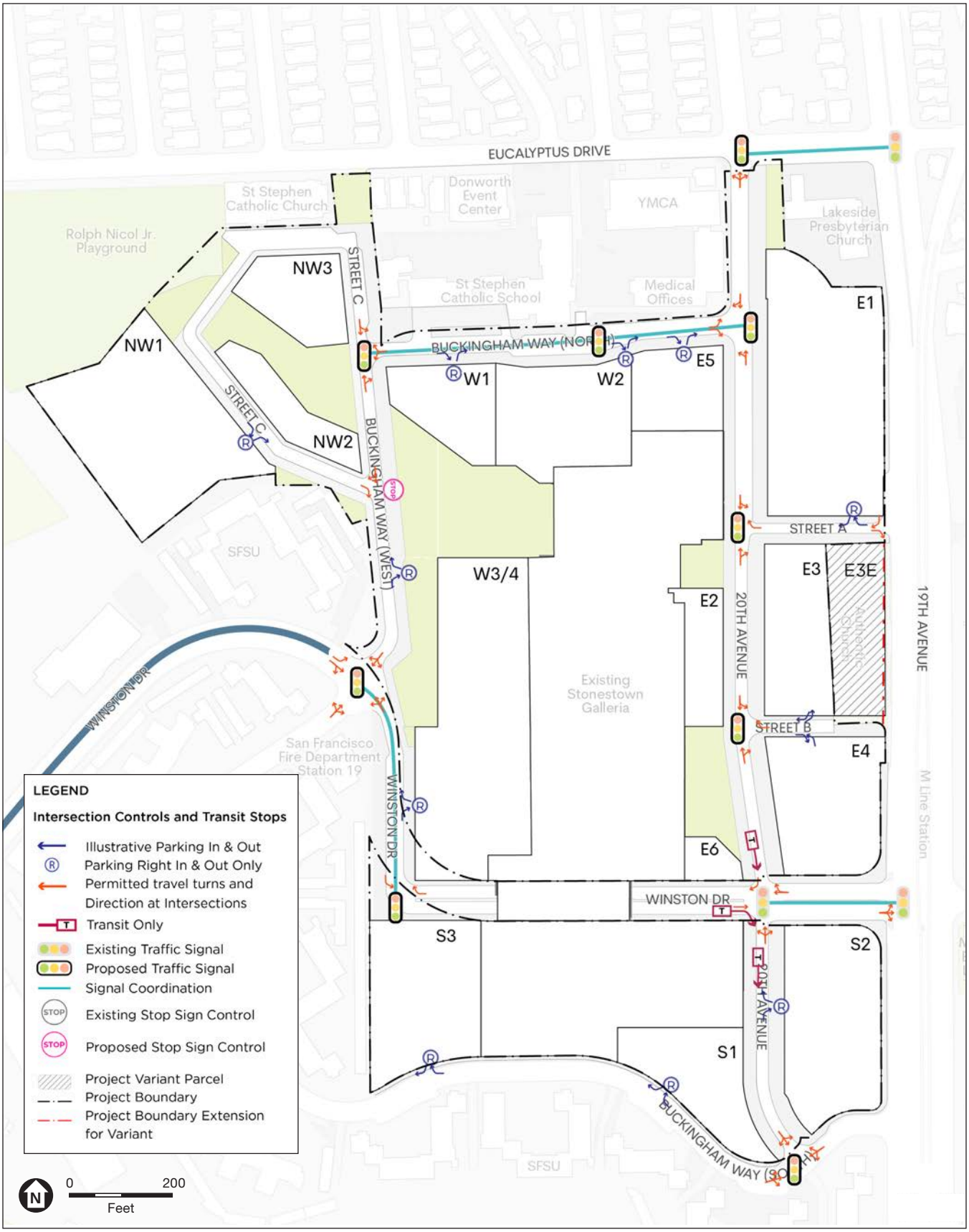
PROPOSED SITE SECTIONS THROUGH NORTH AND SOUTH PARCELS (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

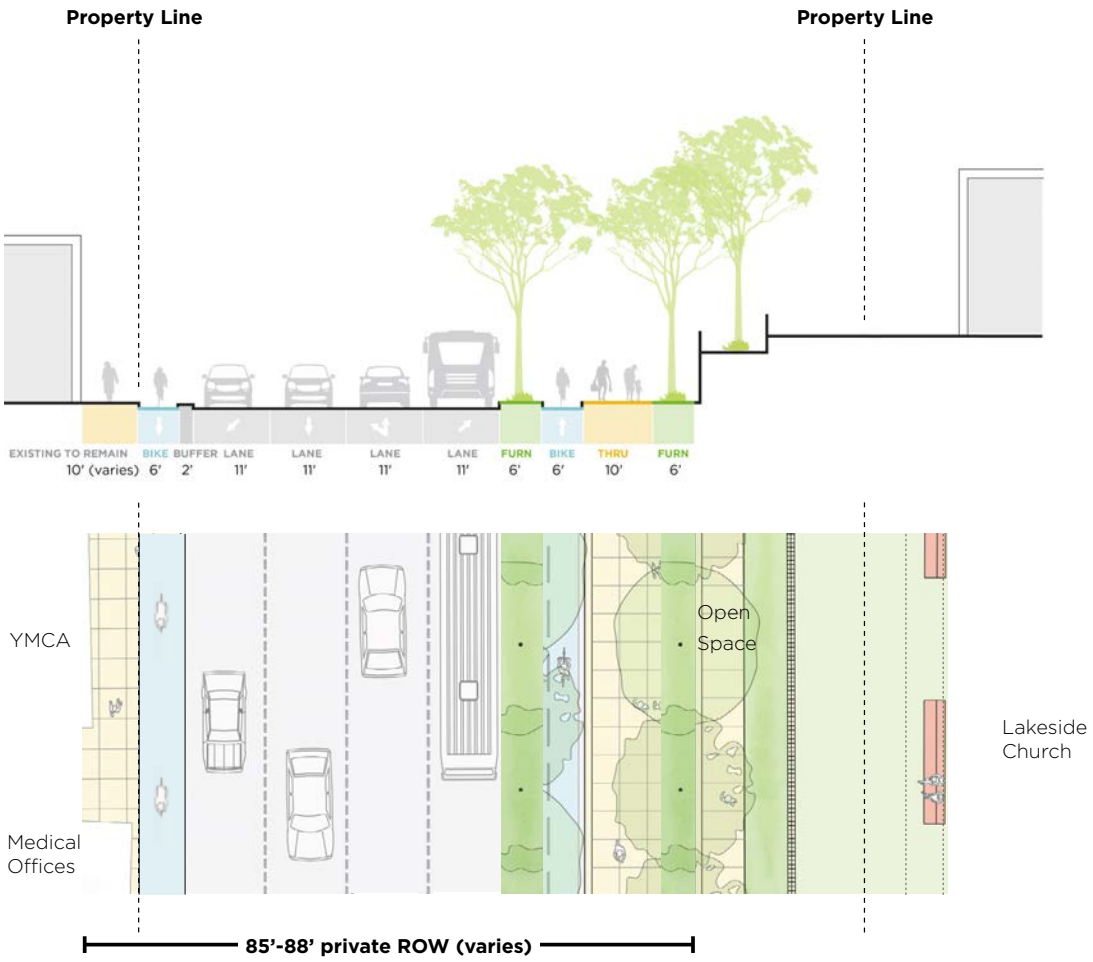
FIGURE 2-12
PROPOSED STREET PLAN (REVISED)

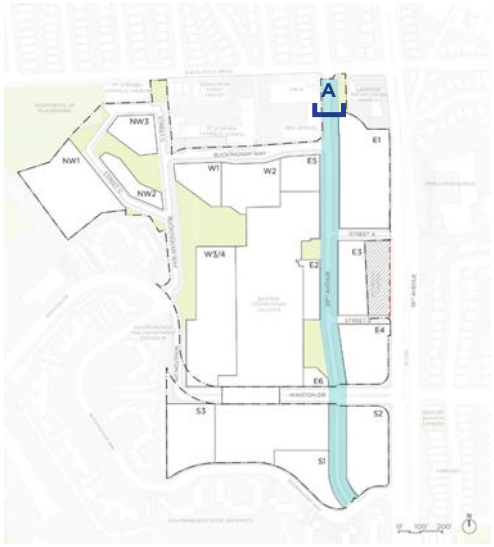


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-13
PROPOSED INTERSECTION CONTROLS (REVISED)





Legend

Sidewalk zone
- Frontage zone (FRNT)
- Throughway zone (THRU)
- Furnishing zone (FURN)
- Extension zone* (EXT)
- Furnishing zone with parking edge zone

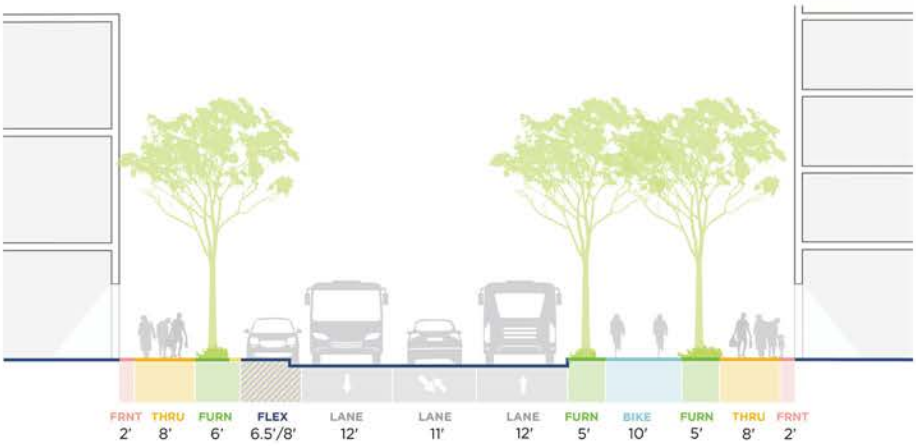
Travel Lane zone
- Travel lane (LANE)

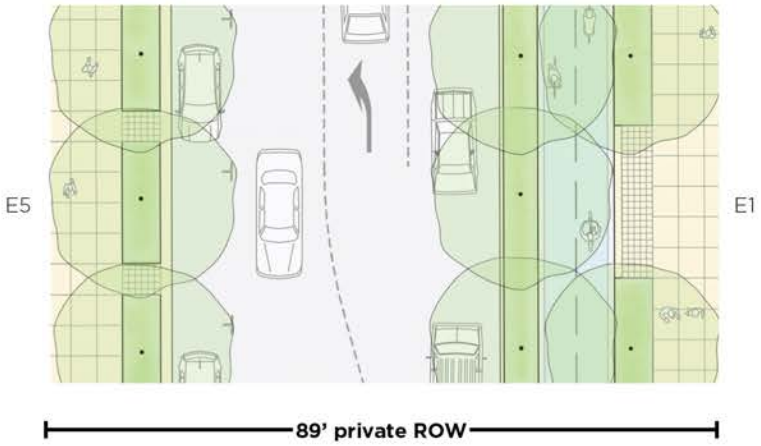
Other
- Bicycle facility (BIKE)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-14
20TH AVENUE ILLUSTRATIVE SECTION A (REVISED)





Legend

Sidewalk zone
- Frontage zone (FRNT)
- Throughway zone (THRU)
- Furnishing zone (FURN)
- Extension zone* (EXT)
- Furnishing zone with parking edge zone

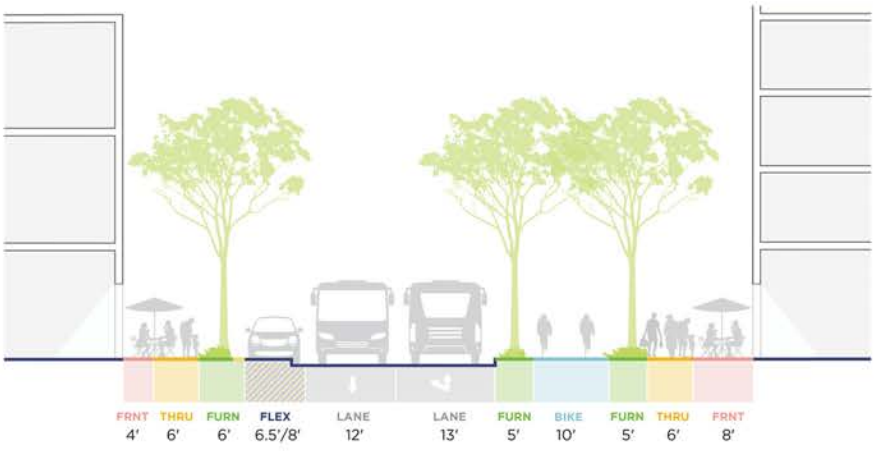
Travel Lane zone
- Travel lane (LANE)

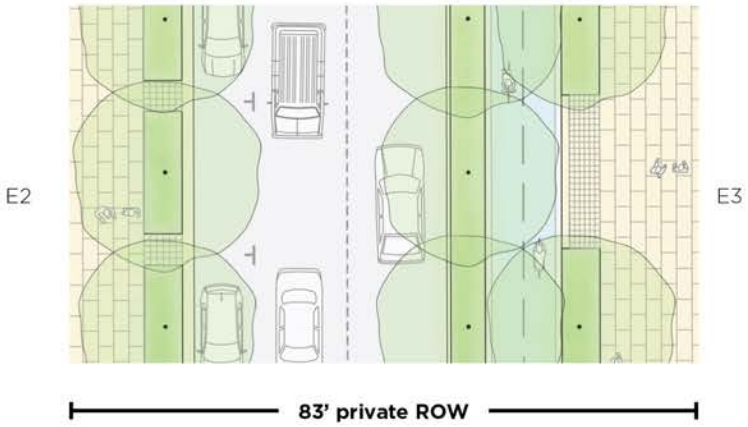
Other
- Bicycle facility (BIKE)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-15
20TH AVENUE ILLUSTRATIVE SECTION B (REVISED)

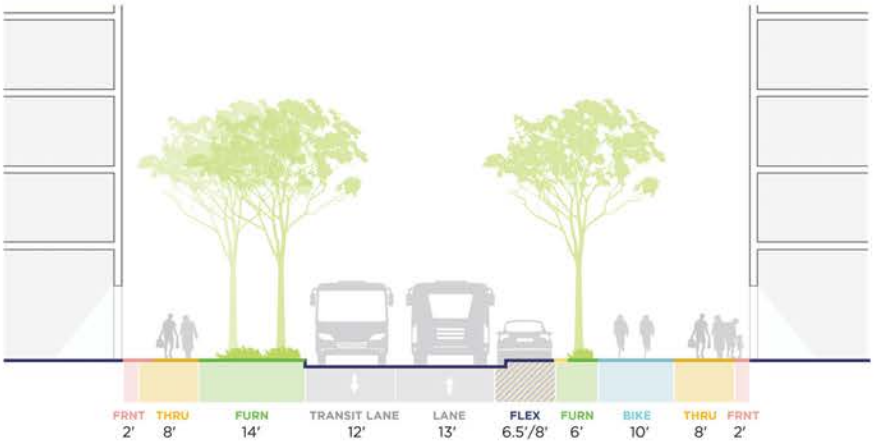


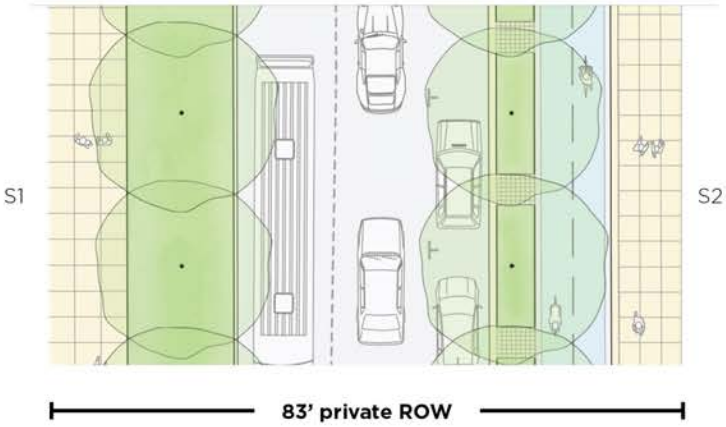


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-16
20TH AVENUE ILLUSTRATIVE SECTION C (REVISED)





SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

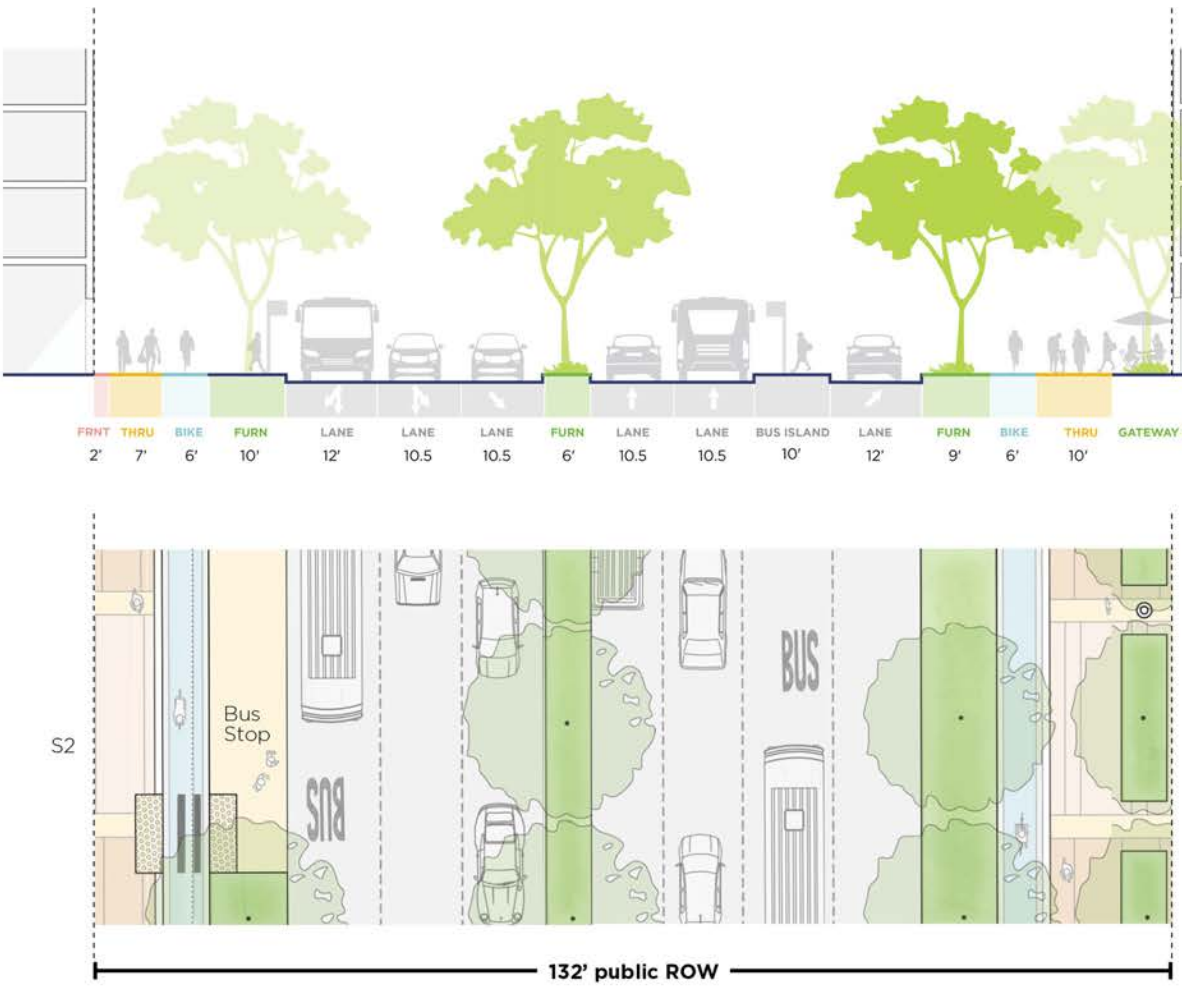
FIGURE 2-17
20TH AVENUE ILLUSTRATIVE SECTION D (REVISED)

SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

FIGURE 2-18

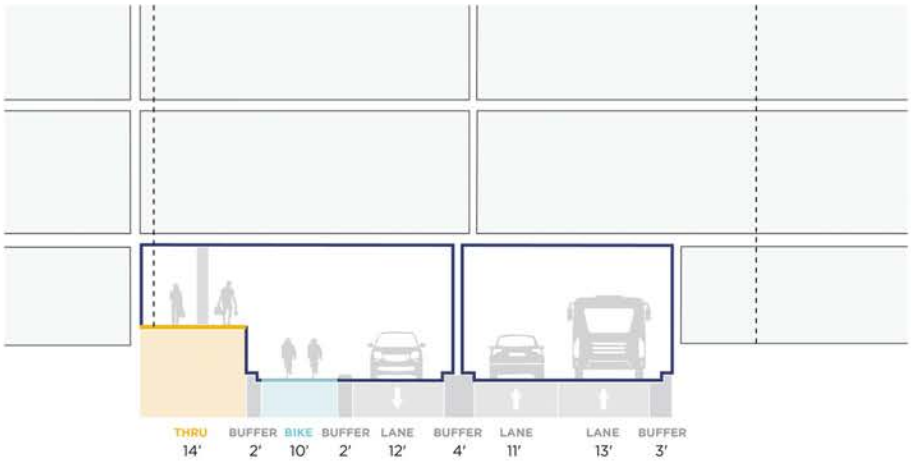
BUCKINGHAM WAY NORTH ILLUSTRATIVE SECTION (REVISED)

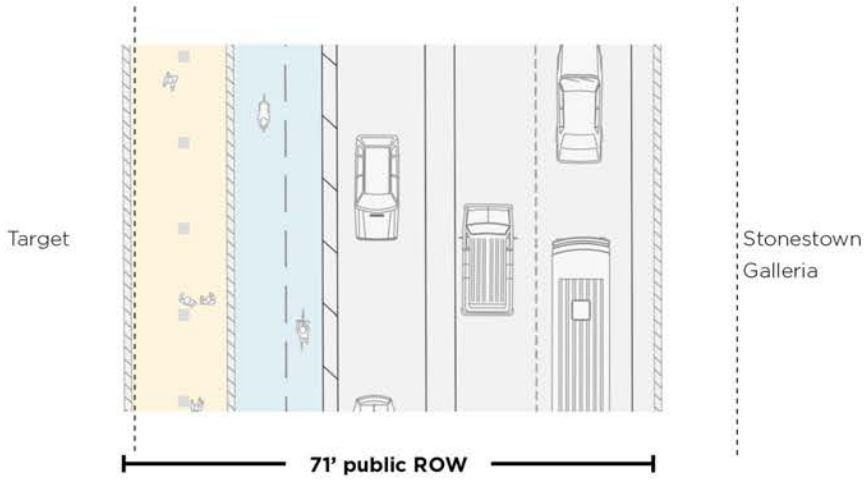


SOURCE: Brookfield Properties and SITELAB urban studio, 2023

Stonestown Development Project

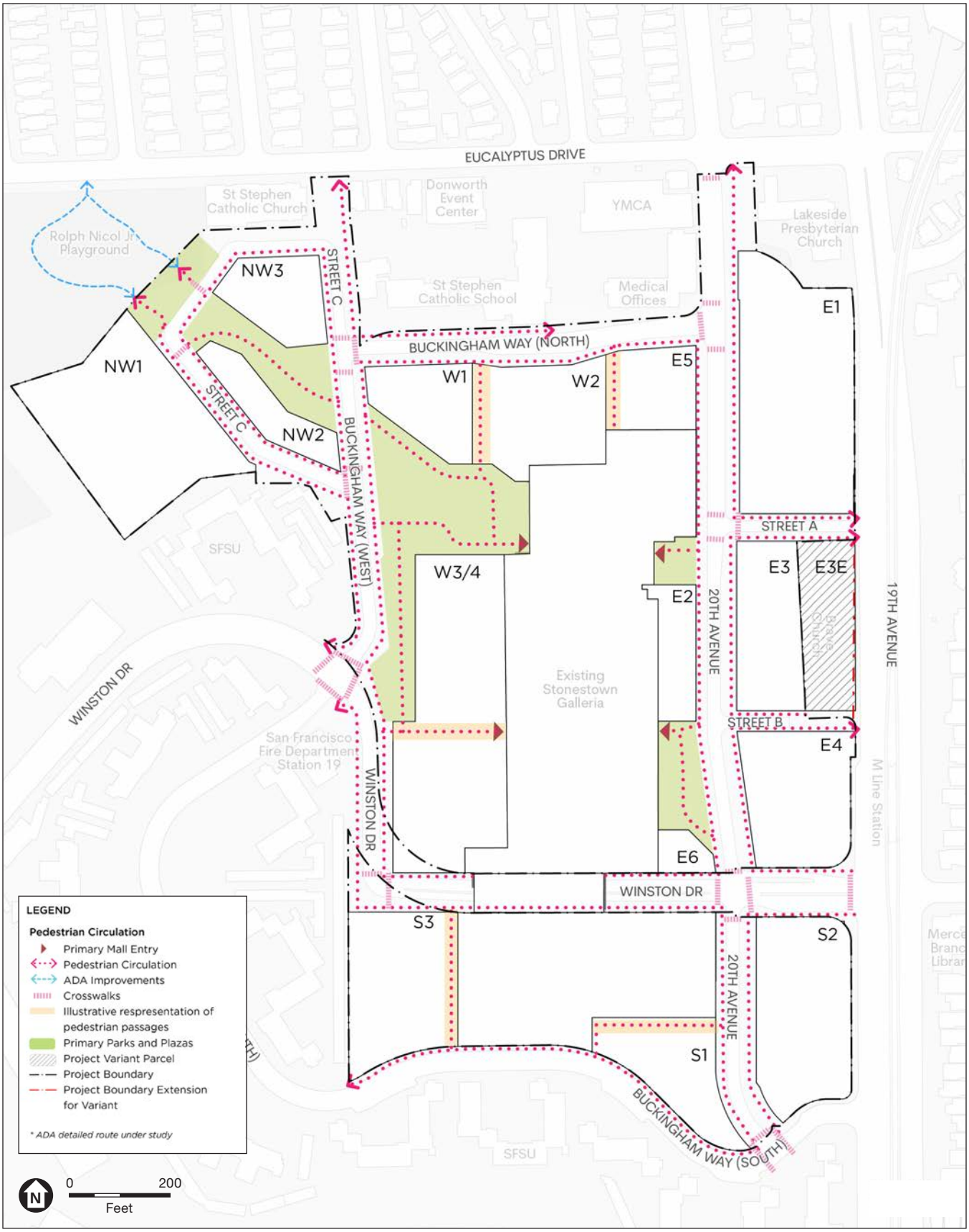
FIGURE 2-19
WINSTON DRIVE ILLUSTRATIVE SECTION A (REVISED)





SOURCE: Brookfield Properties and SITELAB urban studio, 2023

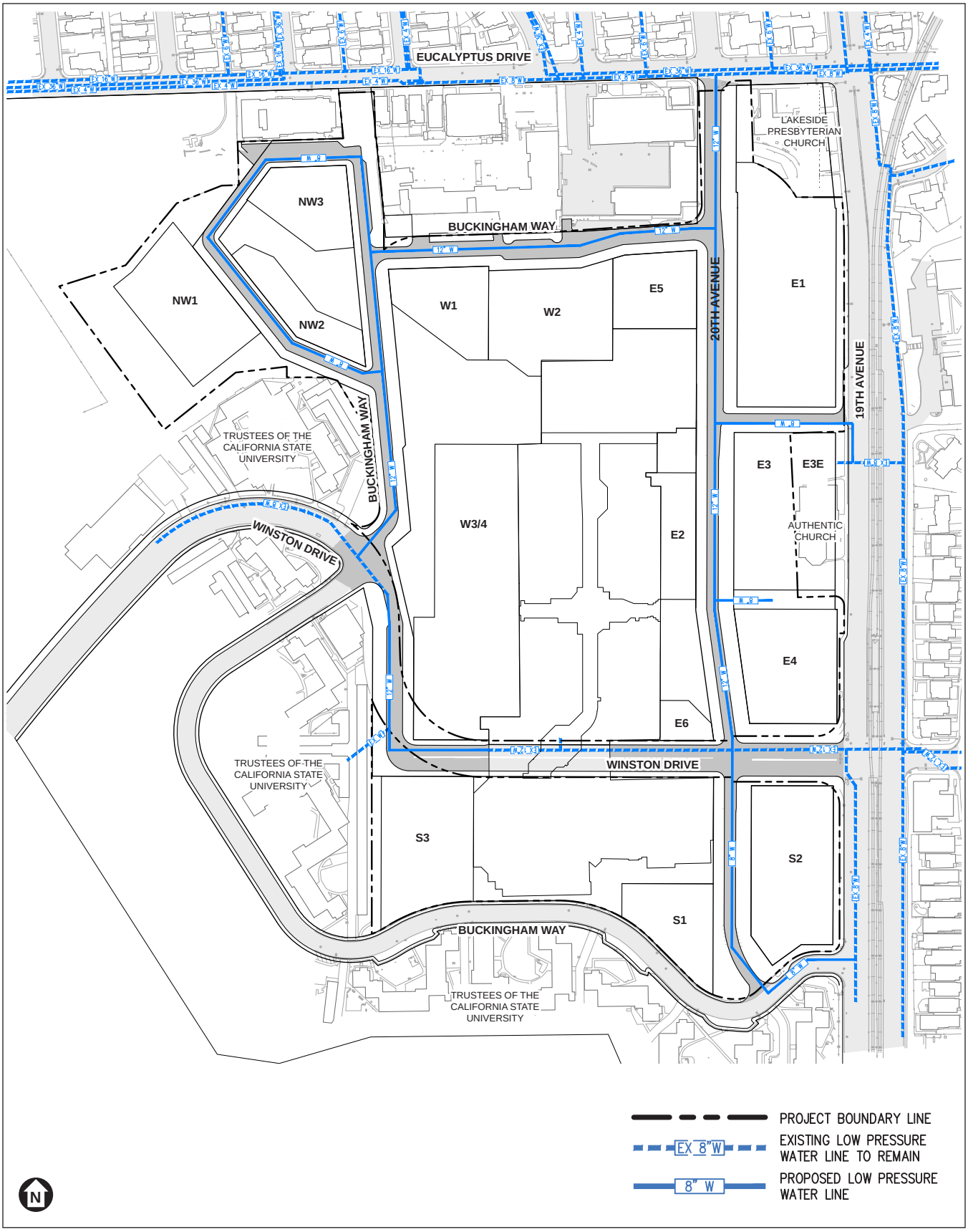
FIGURE 2-20
WINSTON DRIVE ILLUSTRATIVE SECTION B (REVISED)



SOURCE: Brookfield Properties and SITELAB urban studio, 2024

Stonestown Development Project

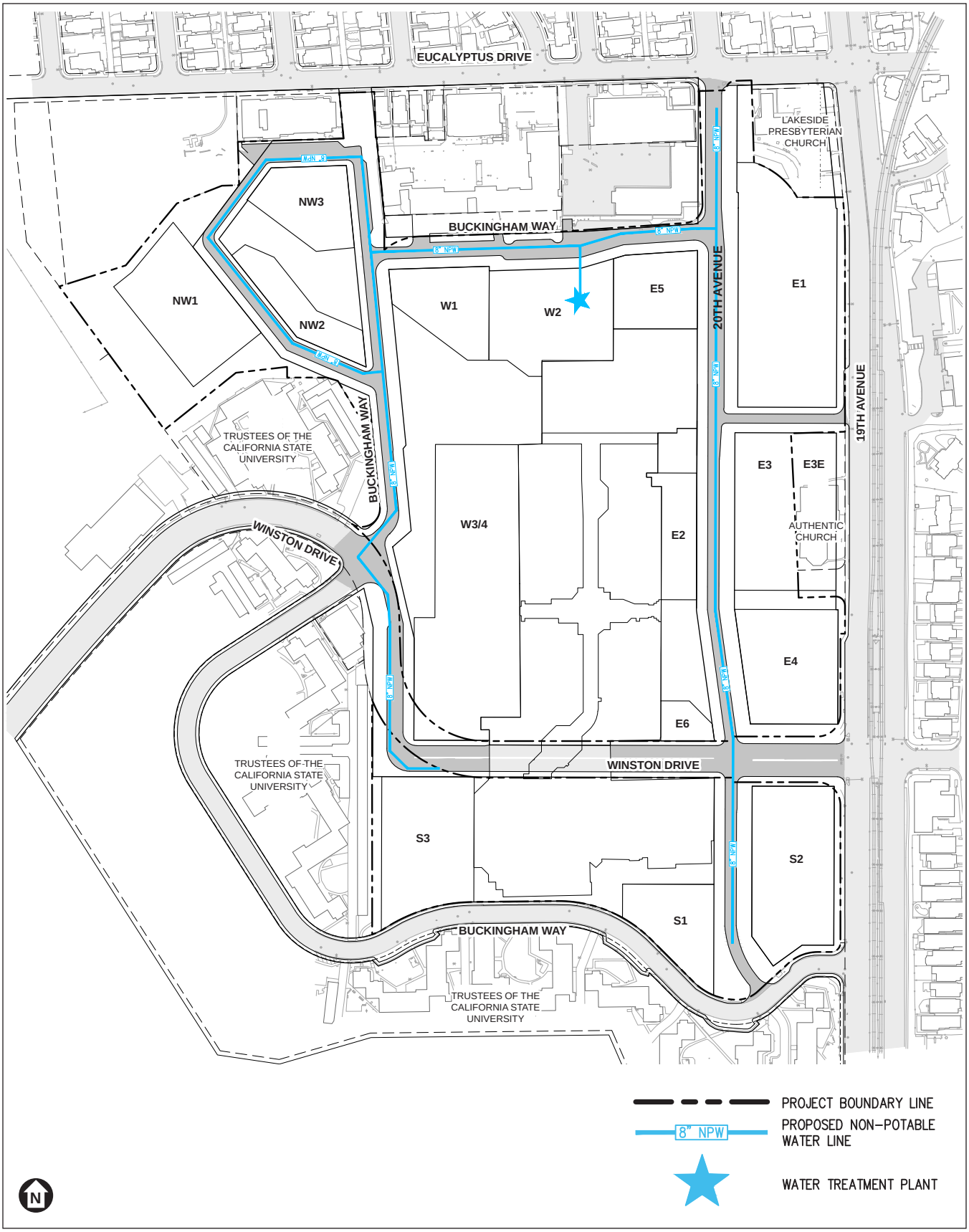
FIGURE 2-21
PROPOSED PEDESTRIAN NETWORK (REVISED)



SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-23
PROPOSED POTABLE WATER PLAN (REVISED)

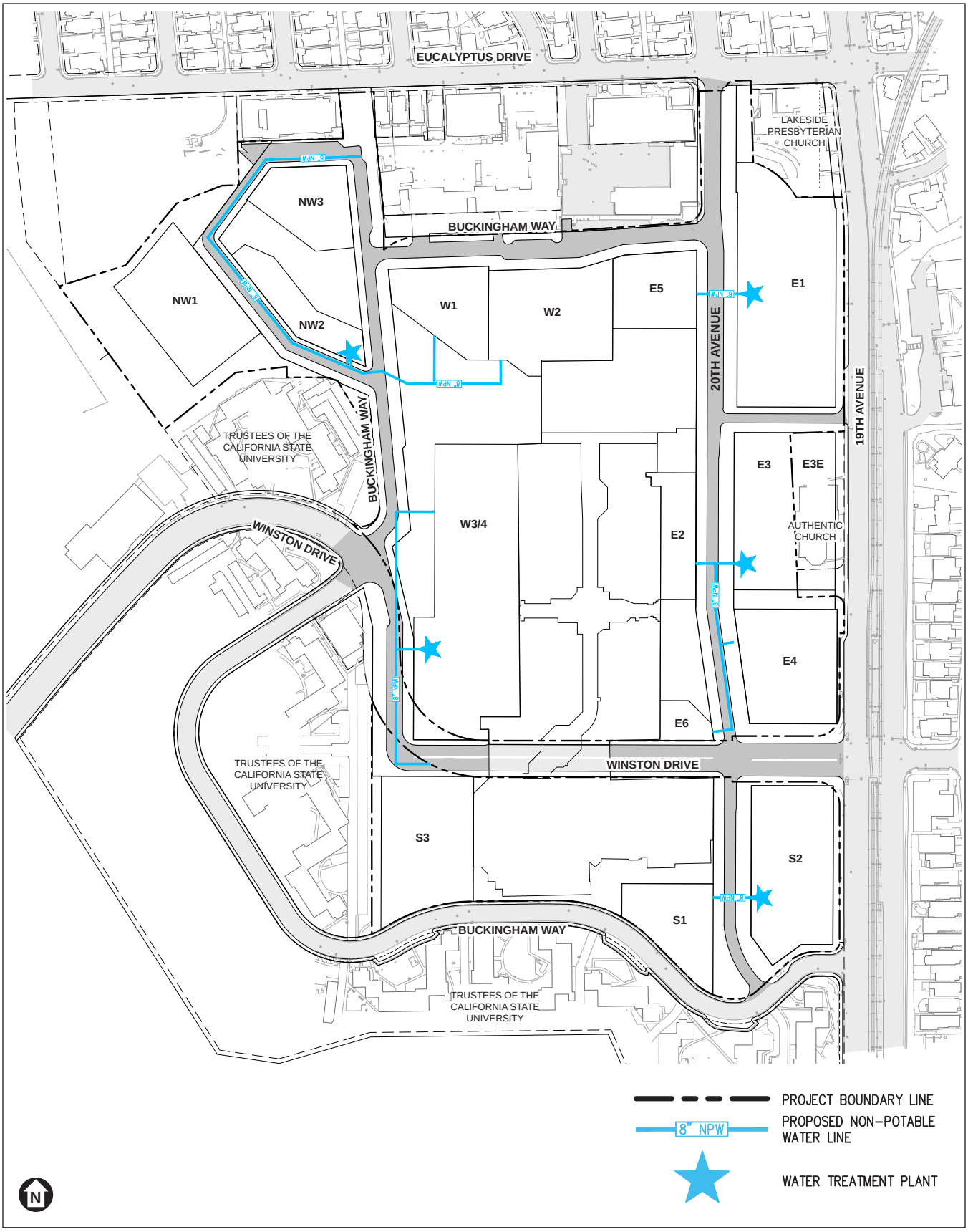


SOURCE: CBG, 2022

Stonestown Development Project

FIGURE 2-24

PROPOSED NON-POTABLE WATER PLAN (CENTRALIZED TREATMENT OPTION) (REVISED)

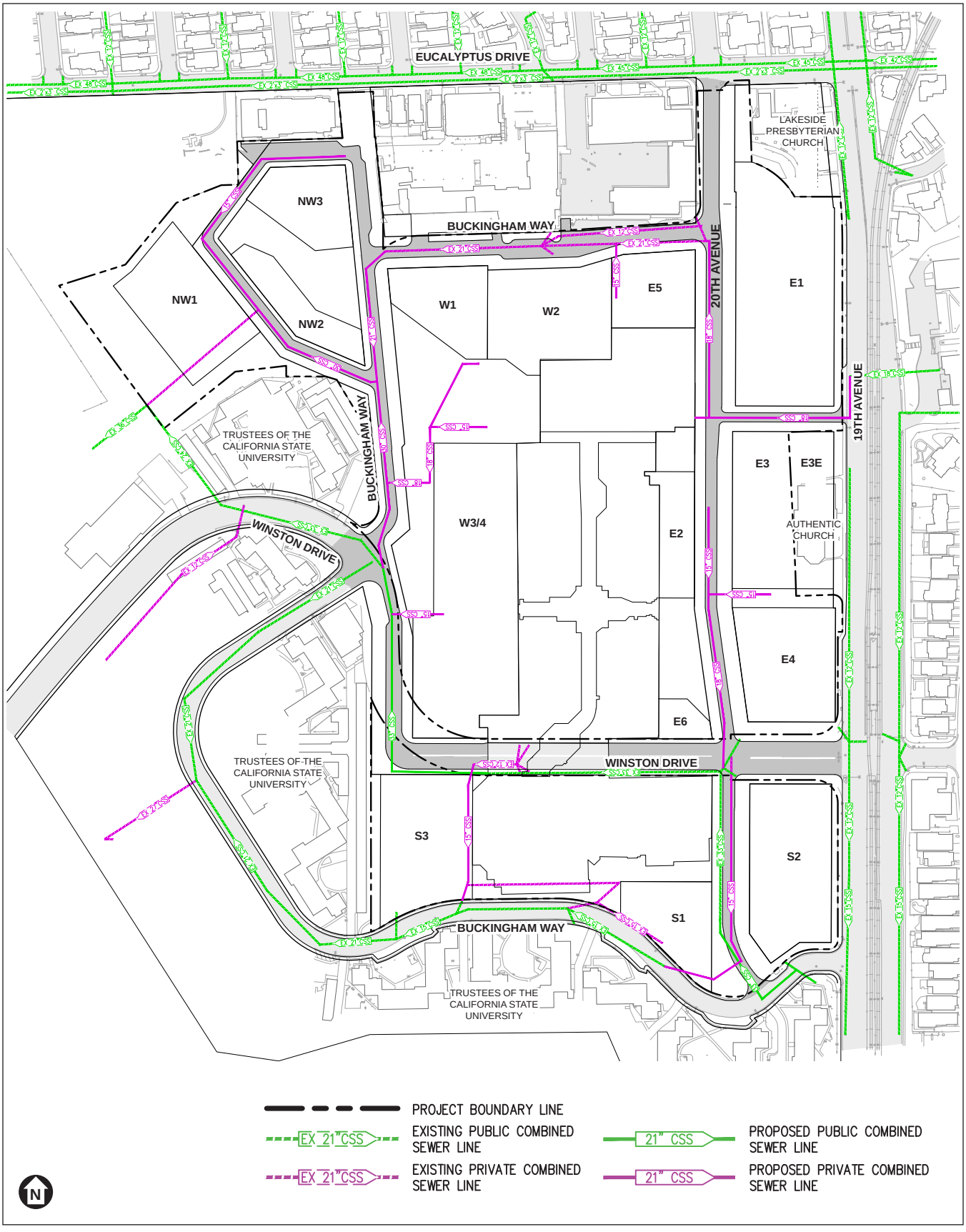


SOURCE: CBG, 2022

Stonestown Development Project

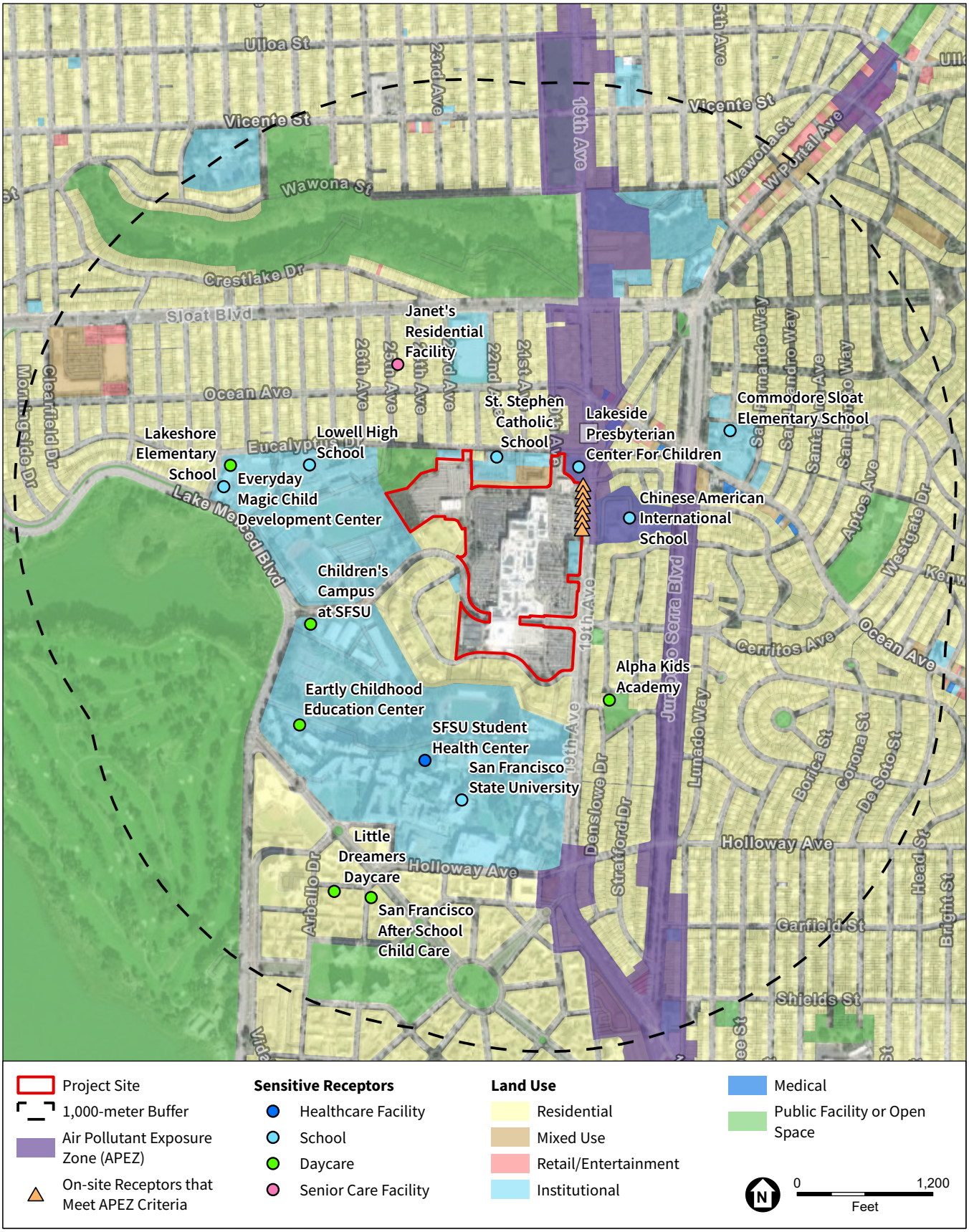
FIGURE 2-25

PROPOSED NON-POTABLE WATER PLAN (DECENTRALIZED TREATMENT OPTION) (REVISED)



SOURCE: CBG, 2022

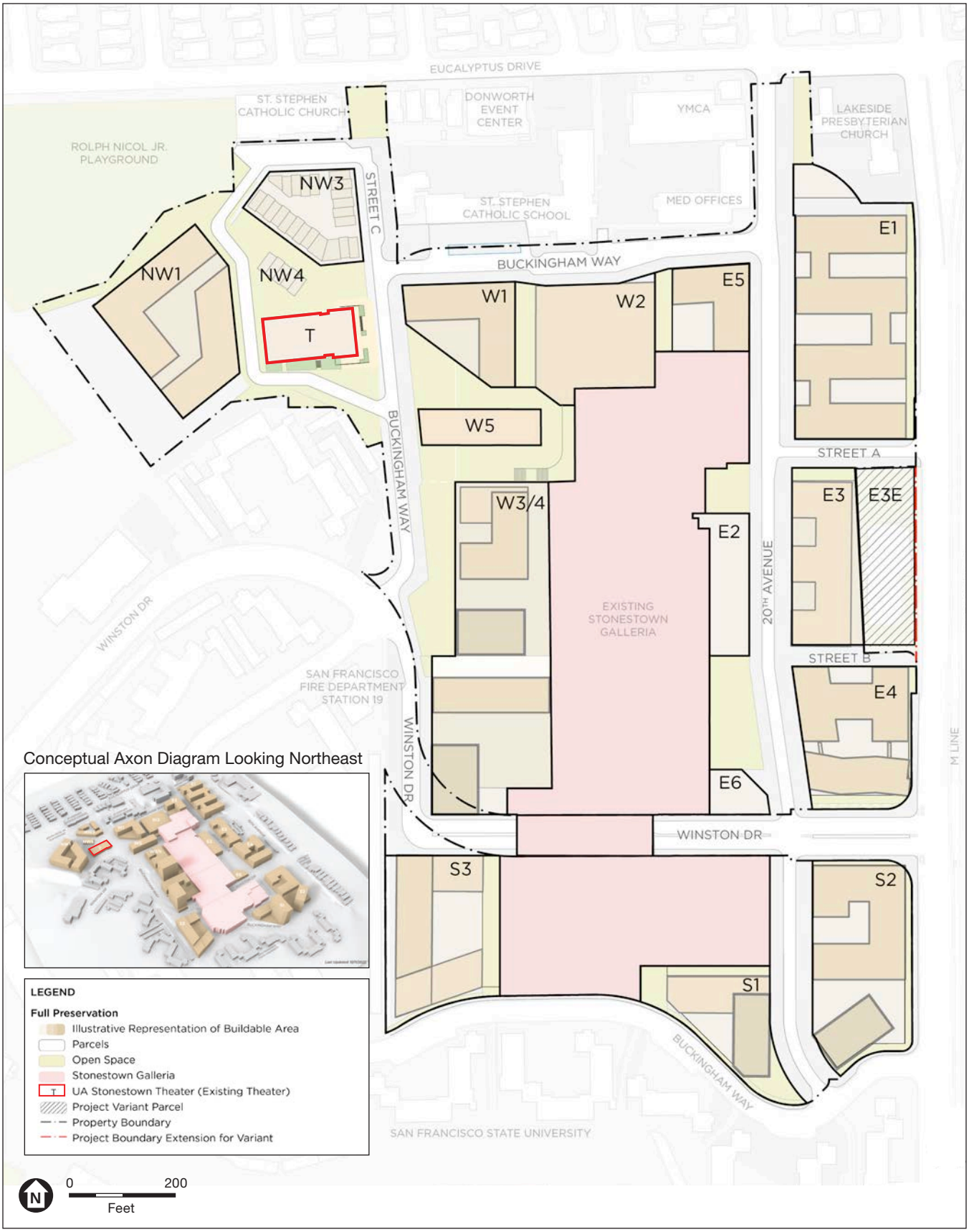
FIGURE 2-26
PROPOSED COMBINED SEWER SYSTEM PLAN (REVISED)



SOURCE: Maxar, 2021; San Francisco Planning Department, 2022; Google, 2022; ESA, 2023

Stonestown Development Project

FIGURE 3.D-1
SENSITIVE RECEPTORS (REVISED)

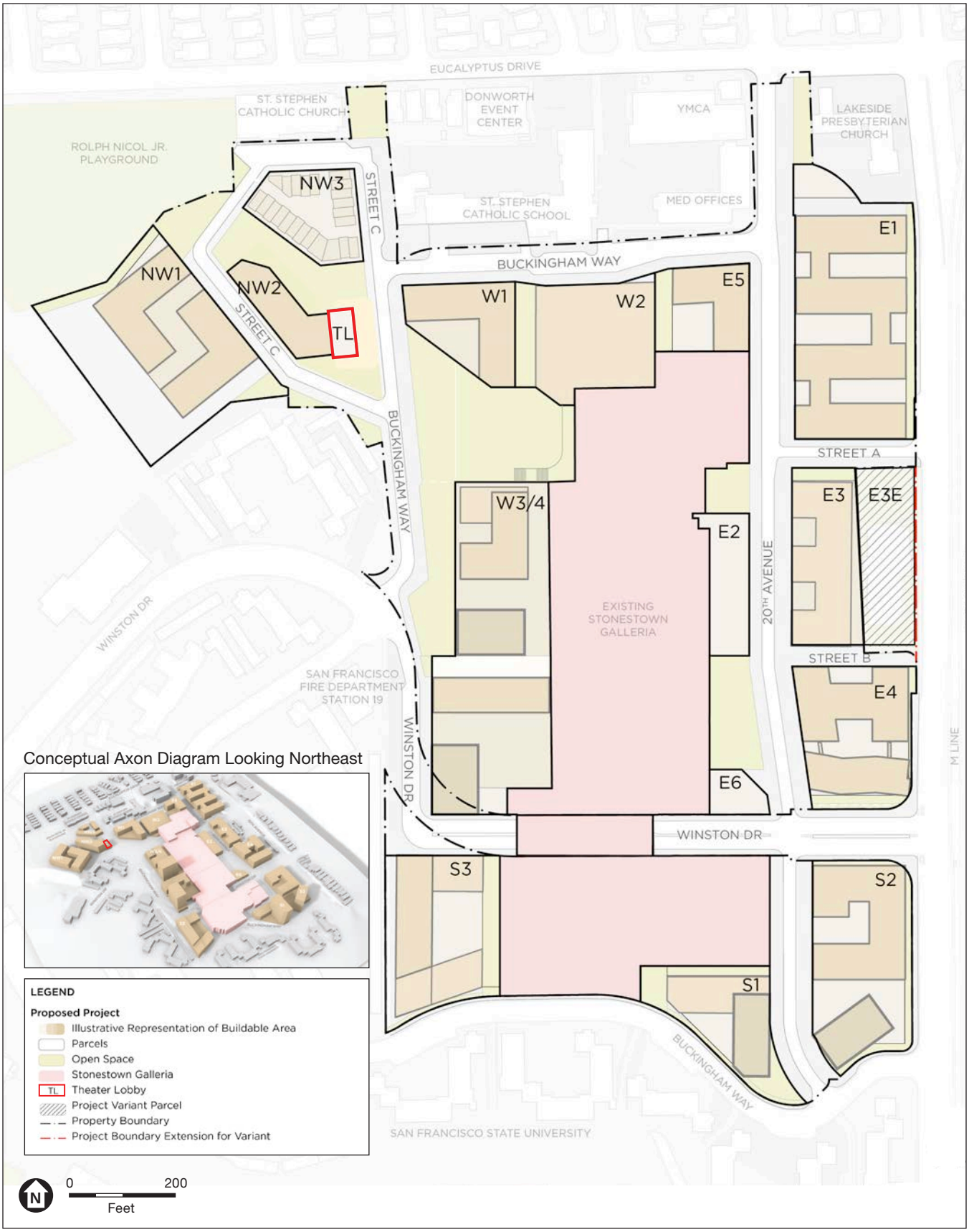


SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-1

ALTERNATIVE B: FULL PRESERVATION ALTERNATIVE (REVISED)



SOURCE: SITELAB urban studio, 2022

Stonestown Development Project

FIGURE 5-2

ALTERNATIVE C: PARTIAL PRESERVATION ALTERNATIVE (REVISED)

5.O Revisions to Appendices

Appendix H, Shadow Analysis Report, is replaced in its entirety to reflect the inclusion of correct exhibits, and minor refinements to shadow coverage calculations. Exhibits B.1 and B.2 (Rolph Nichols Jr. Park) of Appendix H were replaced with the correct exhibits, such that the report text and exhibits are aligned. In addition, an error in the spreadsheet calculating shadow coverage for each park was corrected and resulted in slight decreases in the proposed project or variant shadow coverage of both Rolph Nichol Jr. Park and Junipero Serra Playground. These changes do not materially affect the analysis, nor do they alter the conclusions of the draft EIR with respect to shadow impacts: there would be no new or substantially more-severe impacts, nor would new or revised mitigation measures or alternatives lessen the shadow impacts of the proposed project or variant. Rather, refinements to the calculations merely clarify and make insignificant modifications to the draft EIR. Accordingly, no recirculation of the EIR is required.

The revised *Shadow Analysis Report* may be found on the planning department's website under Case No. 2021-012028ENV at https://sfplanning.org/environmental-review-documents.

ATTACHMENT A

Draft EIR Public Hearing Transcript

CITY AND COUNTY OF SAN FRANCISCO

PLANNING COMMISSION

---oOo---

PROJECT NAME:	) CASE NO.:
3251 20TH AVENUE	) 2021-012028ENV
Stonestown Development Project	)
	) Pages 1 - 30

PUBLIC HEARING ON DRAFT EIR

Thursday, February 9th, 2023

Reported by:

Brianna Rudd, CSR 13668

JAN BROWN & ASSOCIATES

WORLDWIDE DEPOSITION & VIDEOGRAPHY SERVICES

701 Battery Street, 3rd Floor, San Francisco, CA 94111

(415) 981-3498 or (800) 522-7096

A P P E A R A N C E S

COMMISSIONERS:

RACHAEL TANNER, President

KATHRIN MOORE, Vice President

DEREK BRAUN, Commissioner

SUE DIAMOND, Commissioner

THERESA IMPERIAL, Commissioner

JOEL KOPPEL, Commissioner

GABRIELLA RUIZ, Commissioner (Remotely via Webex)

STAFF:

RICH HILLIS, Planning Director

JONAS IONIN, Commission Secretary

FLORENTINA CRACIUN, Environmental Coordinator

PATRICK RACE, Senior Planner

LISA GIBSON, Environmental Review Officer

PROJECT:

COURTNEY PASH, Project Sponsor Representative

Page

Reporter's Certificate 30

February 9, 2023 - 2:36 p.m.

P R O C E E D I N G S

---oOo---

...

(Proceedings prior to agenda item #10 not reported.)

COMMISSION SECRETARY IONIN: Commissioners, that will place us on item 10 for Case No. 2021-012028ENV for the property at 3251 20th Avenue. This is the Environmental Impact Report.

Please -- the Draft Environmental Impact Report.

Please note that public comment for this Draft EIR is from December 14th, 2022 until 5:00 p.m. on February 13th, 2023. And this is for your review and comment.

MS. CRACIUN: Okay. Hi, everybody.

Good afternoon, President Tanner and members of the Commission. My name is Florentina Craciun, and I am Planning Department staff and environmental coordinator for the Stonestown Development Project. Joining me here today is my colleague, Patrick Race, and Courtney Pash on behalf of the project sponsor.

The item before you is the public hearing on the Draft Environmental Impact Report, or Draft EIR, for the Stonestown Development Project, which was published on December 14, 2022. We are here seeking comments on the

adequacy of the Environmental -- of the Environmental Impact Report.

Please note that the comments received here today will be responded to in writing in the Response to Comments document that will be part of the final EIR.

Next slide.

I will go ahead and provide you with a short -- with a short description of the proposed project and the project site.

Next slide.

As you can see on this map, the project site is located at the Stonestown Galleria in the Lakeshore area in southwest San Francisco. The site is surrounded by San Francisco State University, a variety of schools, and residential neighborhoods.

Next slide.

The proposed project would develop the existing 27 acres of surface parking surrounding the Stonestown Galleria into a master-planned, multi-phased, mixed-use community. Under the project, the existing mall would be retained, with changes to the facade, entrances and exits. The site would be rezoned as part of a proposed special use district.

As you can see, the site would include a variety of building types and heights. The intent of the

master-planned community is to transform 20th Avenue into the commercial core of the site, while the western portion would be mostly dedicated to residential uses and open space. The proposed project would include 2,930 units of housing, along with new retail, hotel and institutional use, as well as six acres of open space.

The EIR also analyzed a project variant. The variant would include the .8-acre parcel in the eastern portion of the site, shown on this slide as E3E. The variant would add an additional 150 residential units, 10,000 square feet of institutional uses, and approximately 200 parking spaces, additional parking spaces.

Now I will move forward and provide you with an overview of the potential environmental impacts outlined in the Draft EIR.

If we could move the slides forward, please. And one more.

The draft EIR determined that the project or variant would result in significant and unavoidable impacts for the following resources areas: built historic culture resources due to the demolition of the UA theater, which is a historic architectural resource under CEQA; noise due to overlap of construction for the multi-phase development; wind hazards, as the project

would result in construction of buildings above 85 feet in height; transit delay for the project variant scenario, under cumulative conditions for the routes -- the transit routes running along 20th Avenue; and air quality impacts, due to the exceedances of criteria air pollutants for the construction phases that would overlap with project operations, as well as for project operations due to ROG exceedances.

Next slide.

The EIR identified feasible mitigation measures for these significant and unavoidable impacts; however, I want to point out that these impacts would remain significant and unavoidable even with implementation of said mitigation measures. As shown in this slide, mitigation measures include: documentation of historic resources; reduction of vehicle miles traveled; signal coordination to reduce transit delay; as well as construction noise control plan.

Next slide.

Mitigation measures to reduce air quality impacts include usage of Tier 4 engines during construction, electric vehicle infrastructure, and offsets for ROG emissions, while wind mitigation measures include additional analysis for any buildings taller than 85 feet as specific design becomes available, as well as

a wind safety plan during construction.

Next slide.

In addition to the topics analyzed in the Draft EIR, the EIR also includes the initial study checklist that covers the remaining topics required under CEQA. Additional mitigation measures were identified to reduce impacts to archaeological and paleontological impacts.

Next slide.

I really do hope that these brief slides were a useful overview of the potential environmental impacts of the proposed project. In addition to environmental impacts, we are also required to study CEQA alternatives to the project. The purpose of the alternatives is to minimize or eliminate the project's environmental impacts. As such, in consultation with the sponsor, and with input from the public and other city agencies, we developed five alternatives to the project. I will quickly walk you through those alternatives.

Next slide.

The first alternative considered is the required No Project Alternative. Under this scenario, the site would remain as is and no development would take place.

Next slide.

Because the project would have a significant and unavoidable impact on an identified historic resource

under CEQA, the Draft EIR includes two alternatives that would reduce impacts on historic resources. The Full Preservation Alternative, as shown on this slide, would retain the theater building with some minor alterations and would include a new 100-unit building, shown as W5, and a new five-unit building shown as NW4. This alternative would construct 2,870 units, or 60 less than the proposed project, and would include 3.2 acres of open space, or 2.8 less than the proposed project.

Next slide.

Under the Partial Preservation and Relocated Parking Alternative, the theater would be partially retained and parking would be relocated to minimize transit impacts. The theater building would incorporate the new NW2 building, which is an eight-story, 130-residential-unit building. This is alternative would include 2,890 residential units, or 40 less than the proposed project, and similar other uses, including six acres of open space. This alternative also includes the relocation of parking from E3 to the southwest corner to avoid significant transit impacts along 20th Avenue.

Next slide.

As another alternative, we put forward the Code Compliant Alternative, which was provided to show the development potential at the site under existing land

use and zoning regulations. Under this alternative, development would be about 46 percent less than under the proposed project, and there would be no buildings above 65 feet. This alternative would include about 2,000 housing units, 1.5 acre of open space, and would not include any hotel services or institutional uses. In addition, this alternative would not include any street network changes to 20th Avenue. And this alternative was also tailored to avoid or substantially reduce significant impacts related to transportation, noise, air quality and wind.

Next slide.

The Reduced Density Alternative was developed to substantially reduce significant and unavoidable impacts of the proposed project. Overall, this alternative would result in 36 percent less building than the proposed project, and buildings would be up to 80 feet in height. This alternative would produce approximately seventeen hundred housing units, about 75,000 square feet of retail space and would maintain the six acres of open space, as proposed in the project. It would also include a hotel and non-retail uses similar to the proposed project. This alternative would avoid or substantially reduce significant and unavoidable impacts related to transportation, noise, air quality and wind.

Next slide.

I know that I just covered a lot of information, and I put together this table for you to show you a handy comparison of all the numbers I just threw at you. As shown, the main difference between the five alternatives are the number of proposed housing units and open space. So I'm gonna move forward to this slide, but you do have it in your printout.

Next slide.

Now that we covered the proposed project, potential environmental impacts and alternatives, I would like to give a quick overview of where we are in the environmental process and the next steps for this project.

Next slide.

As shown in this slide, we are currently in the public comment period. Once the Draft EIR comment period concludes, we will prepare a Response to Comments document and a Final Environmental Impact Report that we anticipate will be back before this Commission later this year for certification.

Next slide.

As a reminder, we are here to receive comments on the adequacy of the EIR by the public and the Commission. As I previously mentioned, comments received

today will be responded to in writing.

Written comments will be accepted until 5:00 p.m. on February 13, 2023. While staff is available to answer clarifying questions about the EIR process, comments will be fully responded in the Response to Comments.

Please also note that a court reporter is here today virtually to record these proceedings. Therefore, when you speak, please be sure to state your name, its spelling, and to speak slowly and clearly so that the reporter can make an accurate transcript.

Thank you so much for your time.

COMMISSION SECRETARY IONIN: Okay. We should open up public comment.

Members of the public, this is your opportunity to address the Commission on this Draft EIR. Again, we're taking comment on the adequacy and accuracy, not the project itself.

MEMBER OF PUBLIC: Excuse me.

Good afternoon, ladies and gentlemen. My name is Jim Herlihy. I live in the Lakeside subdivision. I'm also a member of the Lakeside Property Owners Association.

A little bit of history, the Lakeside subdivision consists of 500 homes bordered by Junipero

Serra, Sloat Boulevard, 19th Boulevard -- 19th Avenue, rather -- sometimes it seems like a boulevard -- going out as far as the Chevron gas station.

As I said, I'm a member of the Lakeside Property Owners Association. We've lived there since 1987.

I-Herlihy3-1

CEQA guideline section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly obtain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This Draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5.1 outlines Alternatives (B), (C), (D), and (E), which range from 2,890 dwelling units to 1,758 dwelling units. Assuming two-person occupancy per unit, that would result in approximately 5,600 new residents, on the high end, or 3,500 new residents on the low end, on the Stonestown property. Today, there is no resident on that property.

Unavoidable negative impacts have been detailed in the DEIR and were also detailed by Miss Florentina. And those negative -- unavoidable negative impacts are noted in the Draft, and they impact transit, traffic, emergency services and infrastructure, including sewer

I-Herlihy3-1 (cont.)

and water. No consideration is given to an alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure. Such an alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor and Lakeshore.

I-Herlihy3-2

I realize my time is up. Simply would like to close by saying that the proposed 18-story, 200-room hotel is inconsistent with their goal of mixed residential and commercial.

I-Herlihy3-3

And finally, the proposed -- it's essentially a towering wall of apartments which would go from Eucalyptus to Buckingham Way, approximately 0.25 miles, and no analysis has been done on the environmental impact of having a towering wall on the west side of 19th Avenue --

COMMISSION SECRETARY IONIN: Thank you, sir. That is your time. But you can always submit your written comments as well.

MEMBER OF PUBLIC: I have copies for you all.

COMMISSION SECRETARY IONIN: Great.

Okay. Any other member of the public in the chambers wishing to submit their testimony, you need to come forward.

Seeing none, we'll go to our remote callers.

COMMISSIONER TANNER: We might need to remind callers they have to press star, six to be heard.

COMMISSION SECRETARY IONIN: Indeed. Thank you, Commission President.

MEMBER OF PUBLIC: Hello, can you hear me?

COMMISSION SECRETARY IONIN: We can.

MEMBER OF PUBLIC: Hi. Good afternoon, commissioners. Jake Price on behalf of the Housing Action Coalition.

O-HAC-1

I'd like to first commend the interpretation team, the Planning Commission and the Planning staff for your flexibility earlier in this hearing.

I am here to offer support for the Stonestown Development Project and believe that the Draft EIR is sufficient and hope that the project moves forward with the maximum number of housing units that would not require an EIR re-submittal.

Our project review committee endorsed this project back in December of 2022 and gave especially high marks to the land use and density of the project. We are tremendously excited to see this innovative project revitalize the area and ask that the Commission move forward in approving this EIR at its earliest convenience.

Thank you.

COMMISSION SECRETARY IONIN: Again, you need to press star, six to unmute yourself.

MEMBER OF PUBLIC: Can you hear me?

COMMISSION SECRETARY IONIN: Yes, we can.

MEMBER OF PUBLIC: Perfect.

Hey, my name is Roland Maldonado. I was a past five-year resident in SF's Ingleside District 11. I live in Oakland now for the past year.

I-Maldonado-1

I'm calling in support of Stonestown Development EIR. This is -- the EIR is missing things like prospected environmental benefits instead of the short-term project environmental impact. This project provides sustainable alternatives for biking from Ingleside's Holloway Street through SF campus -- which I've done before, even walking through it -- to Stonestown beneath an Irish sunset. And it's pretty safe; right?

Moreover, this opportunity provides in-filling of housing space at affordable market rates to keep and grow the diversity of Ingleside, where Blacks were displaced before. And some callers against EIR approval are familiar with such history in the past.

This multi-development narrowly promotes SFMT ridership with the M-Line as well, buses, and even

I-Maldonado-1 (cont.)

walking within the new 15-minute walkable neighborhood as well. Plus it's a multi-use neighborhood.

Please consider the future positive environmental impacts this project has going forward with this already satisfactory EIR document.

Thank you so much. Have a great day, everyone.

MEMBER OF PUBLIC: Good afternoon, commissioners. My name is Jonathan Bunemann. I live in District 2, and I'm with the pro-housing neighborhood organization, Northern Neighbors.

O-NorthernNeighbors-1

And I'm calling in in support of this Stonestown Development draft EIR. The, you know, EIR is adequate and comprehensive. Let's not be -- let perfect be the enemy, you know, of the good here.

I think one of biggest issues in housing in San Francisco is that things get delayed over and over again and that the process takes forever. So let's make good progress here in the process, not delay it further, and approve the Draft EIR.

Thank you.

MEMBER OF PUBLIC: My name is Tara Hardesty, and I live within a mile of the project.

I-Hardesty-1

I believe I'm calling in support for the Draft EIR. I've participated, over the last the several years, in community outreach efforts by the sponsor, and I've

I-Hardesty-1 (cont.)

looked at these plans. I believe this is a really smart use of this land and a good place to build significant housing which we desperately need.

I'd like to encourage the Commission to take the next steps to approve -- or take -- approve the draft EIR and move forward in the next steps to having this development realized.

Thank you.

COMMISSION SECRETARY IONIN: Again, if you're being asked to unmute yourself, you need to press star, six.

When you're asked to unmute yourself, you need to press star, six.

MEMBER OF PUBLIC: Good afternoon.

Can you guys hear me?

COMMISSION SECRETARY IONIN: We can hear you just fine.

MEMBER OF PUBLIC: Hi. My name is Dena Aslanian-Williams, and I'm the immediate past president of the West of Twin Peaks Central Council.

I-Aslanian-Willams-1

And the only thing I came to say today is that this Draft EIR and the company has definitely presented itself to the community. They've been to West of Twin Peaks meetings a few times and presented the project. And I think that this Draft EIR is complete and should be

I-Aslanian-Williams-1 (cont.)

approved.

There are questions and requests that we have, and we have sent a letter to that effect by the chair of our land use committee. So there are things to be answered, such as the infrastructure, mix of housing, et cetera. But as far as this Draft EIR, it should be approved.

Thank you very much.

COMMISSION SECRETARY IONIN: Mr. Kleinfelter? Mr. Kleinfelter, are you with us?

Okay. Let's take the next caller.

Again, when you're being asked to unmute yourself, you need to press star, six.

MEMBER OF PUBLIC: Hello?

My name is my Mee Mee Kiong. I live in the Balboa Terrace neighborhood, which is not very far away from Stonestown Development.

I-Kiong2-1

I like a lot about the Stonestown Development. My main concern is the traffic situation on the -- going to South Bay. Many residents in this neighborhood travel to the Silicon Valley to work. In fact, I think we are kind of well known to be, you know, the suburb of the Palo Alto area. So I am just really concerned about the number of residents that are going to be in this neighborhood and the traffic that's going to be

I-Kiong2-1 (cont.)

generated. And there's a lack of public transportation from this particular area to Silicon Valley, and the only way to travel besides (unintelligible) the buses, or to take buses, is by cars.

Pre-COVID, this situation is already quite above that situation. And with the number of residents' parking spaces, it's just going to generate even more traffic. And as long as the developer adequately address that particular stretch from 19th down to Silicon Valley, I would really appreciate that. I just can't see how the number of people added to this particular location can eliminate or relieve that kind of traffic situation.

MEMBER OF PUBLIC: Can everybody hear me?

COMMISSION SECRETARY IONIN: We can.

MEMBER OF PUBLIC: Great.

I-Seratti-1

My name is Karen Seratti, and I live about a mile away from Stonestown. And I can't tell you how excited I am to see something like this in our area that's so close. We lack housing, as everybody knows, in this city, and the -- so I'm absolutely thrilled with this proposal, and I -- for many reasons: the housing, the walkable space, the proximity to San Francisco State. How fortunate for these college students to be so close to a proposed living and mixed-usage space as this one.

So I absolutely ask you to move forward to

I-Seratti-1 (cont.)

approve this EIR as it is. And I think it's a wonderful, wonderful contribution to our area. Thank you so much. And this'll make the west side so much more exciting and livable than it is right now.

Thank you.

MEMBER OF PUBLIC: Hello?

COMMISSION SECRETARY IONIN: Yes.

MEMBER OF PUBLIC: Thank you.

I-CLee-1

My name is Chen Young Lee. I am in support of the Stonestown Project and hope that it moves forward with the maximum amount of units and hope that the Planning Commission takes the necessary steps to move forward with the -- what's that? -- the EIR.

I spent my time going to the high school there on Eucalyptus, so I spent a lot of time walking back and forth between Stonestown and the high school. The space towards the -- toward (unintelligible) high school and the Ralph Nicol Park, they're unactivated space. When I was a student there, me and my friend, we've been mugged through that -- in that area because it's a very quiet area. So the intimacy (unintelligible) all residents and has a more accurate space. I think it's a great use of the (unintelligible) as of right now.

Thank you.

MEMBER OF PUBLIC: Hi. My name is Martin Munoz.

I-Muñoz-1

I'm calling in support of the Draft EIR for the Stonestown redevelopment, particularly because a mall like Stonestown was built during a time in which a lot of development was car-centric. And unfortunately, this created huge scars throughout the city where, you know, it's not walkable. You can't really feel comfortable there unless you're in a car. And I think this will correct the wrongs of the past by adding housing, by adding walkable spaces, by adding green spaces. And importantly, it's on a Muni Metro line, which will be great for people.

Oftentimes, the West side has quoted a lot of opportunity, like great parking, great schools and not enough housing for the people to be able to take advantage of that. So this development will right those wrongs as well. And I hope you will agree and pass -- and approve this EIR.

Thank you.

MEMBER OF PUBLIC: Eileen Boken, CSFN speaking on my own behalf.

I-Boken-1

When this item was on the agenda for the February 2nd meeting, I was caught off guard for a number of different reasons. I've been following this project since pre-pandemic years, both attending in-person events and virtual meetings. Each of these involved only

I-Boken-1 (cont.)

project sponsors and their consultants. Planning staff was never included. There is a community steering committee, but it's only by invitation.

The PIM website still lists Xinyu Liang as the assigned planner even though the department staff directory lists her as a current planner for District 6. The PIM website also states that the shadow study was placed on hold on September 7th of last year.

I-Boken-2

During the walking tour last year, the consultant stated that the UA cinema would be demolished. Navy report subsequently stated that the cinema had been -- had come before the Historic Preservation Commission, and even the HPC was not listed on the project website as a milestone.

That the public comment period for the Draft EIR started over the holidays on December 14th is a practice that the Department has been heavily criticized for in the past.

I would concur with the commissioner's comments from the February 2nd meeting on how this is late to come before the Commission, as half of the plans and half of the community benefits have already been completed. I

I-Boken-3

would add the following: The cumulative impacts should include not only SF State housing and Park Merced but

I-Boken-4

also Balboa Reservoir; the issue of limited evacuation

I-Boken-4 (cont.)

routes from the site should be investigated; the issues

I-Boken-5

of resiliency and climate change, as the project will have dedicated emergency firefighting water pipes, but the City has stated that there aren't funds to connect them to the city's pipeline network.

I-Boken-6

Besides catastrophic fires, the issue of the project's impact on drinking water has not been adequately addressed. This city has experienced water rationing, and a large project would have impacts on the water system even further.

It should be noted that the City has commissioned a report by URS to identify sites for a desalination facility. The preferred site in the URS report is the Oceanside treatment facility not far from the project site.

Thank you.

MEMBER OF PUBLIC: Good afternoon, everyone.

I-Marzo-1

I'm calling in strong support. This is Steve Marzo. I'm a resident in the Ingleside neighborhood right down the street of the Stonestown Development. I go to this mall all the time. I'm a, you know, a big fan of the mall, and I strongly believe that it should be used for more housing.

And looking at the EIR, it looks to be adequate for the purposes of environmental review. And, you know,

I-Marxo-1 (cont.)

let's get it done. Let's get this passed so we can get more housing in San Francisco because we need it.

Thank you so much for your time. Please pass the EIR.

COMMISSION SECRETARY IONIN: Okay. Last call for public comment. You need to come forward if you're in the chambers; or if you're calling in remotely, you need to press star, three; if you're on Webex, you need to raise your hand.

Seeing no additional request to speak, commissioners, public comment is closed, and this is now for your review and comment.

COMMISSIONER TANNER: All right. Thank you. Good to see so many callers reading the EIR, getting in on it.

Wondering if there are commissioners who have comments that they would like to make in response to the Draft EIR.

Commissioner Diamond.

A-CPC-Diamond-1

COMMISSIONER DIAMOND: We're at this pivotal point in time where not only is CEQA a very important consideration in the approval of the project, which is not yet in front of us, but we are also now dealing with a new Housing Element that's been adopted and certified that mandates that we find room for 82,000 additional

A-CPC-Diamond-1 (cont.)

units with the focus being on the west side. And this is one of the prime opportunity sites where we can really add a significant amount of housing so long as it is done in an appropriate manner with Urban Design and with the appropriate infrastructure, in part, to ensure that whatever we add here is still beautiful and livable and adds to the quality of life in the city.

But approving units on paper doesn't do us any good. We need the developer to actually build them. And so I am hoping that when we get to the next stage, that the elements for this project will build in necessary flexibility that will allow the developer to pursue various parts of this project at appropriate times to meet market demand and to make changes as necessary.

And so what I am curious about is whether or not -- is really the limits of the existing analysis that's been done to allow for that flexibility in the future. And let me just give a couple of examples.

If they decide not to build the hotel and to add housing units instead, is the EIR, as currently drafted, adequate to handle that without the need for, you know, a supplemental EIR? Same thing if they decide to take out some of the retailers institutional uses and add in more housing units instead to go above the 3,000, even with the variant, or if they decide to add an extra floor or

A-CPC-Diamond-1 (cont.)

two, or three or four, or whatever it is on various parts of the project, because that's what makes sense from an economic perspective in order to move it forward without having to do a supplemental EIR.

So really the CEQA question that I have, that I'm hoping you can respond to is that, at the limits of this document, how far it can go in terms of providing coverage for the entitlements. And I'm -- as I say, entitlements that include flexibility to allow for shifts among the various uses.

COMMISSIONER TANNER: Thank you.

Commissioner Moore.

A-CPC-Moore-1

COMMISSIONER MOORE: I believe that the Draft EIR in front of us is accurate and complete. It has an unusually large number of alternatives; mostly, we see two or three. This really stretches it and gives everybody really the subtleties of what can happen. This is only -- these are comments for the Draft EIR, not an exchange between us and staff.

A-CPC-Moore-2

The one thing I would like to suggest is that the graphics, which show the theater, punch out the theater more strongly because your eye gets lost, given the line weight of how that particular object -- which is much of the alternatives -- pops into your eye when you look at the alternatives. It may be the smallness of

A-CPC-Moore-2 (cont.)

what the EIR shows, but I would strongly suggest that it is more strongly delineated and popped out in the graphics.

A-CPC-Moore-3

The other thing -- and that is my own personal comment, probably not really a DEIR comment -- the New Formalist-styled theater and its value kind of somewhat eludes me. I will be very honest. I have looked at it. I've been there.

The site is complicated due to the fact that the theater is actually in a bowl, so to speak, which makes the usability of that particular site, even in -- under any theater configuration difficult because the theater, as it is built, does not meet ADA requirements of how you get there.

That said, I would like to see a slightly larger elaboration historically, with pictures or whatever, to explain the New Formalist style. Having practiced in my field and my entire education, which is quite extensive, in architecture and architectural history, et cetera, the style of New Formalist has never crossed my desk. And it may be a regional expression. There is obviously similar styles practiced by Eero Saarinen with concrete that takes form similar to what's attempted here.

Without trying to sound facetious, I would like to see a slightly more in-depth explanation of the value

A-CPC-Moore-3 (cont.)

of this building and its stylistic importance.

A-CPC-Moore-4

Those are my comments. Otherwise, I believe that the -- what's in front of us is very thorough and goes into all of the aspects that we need to consider.

Thank you.

COMMISSIONER TANNER: Great. Thank you.

Commissioner Koppel.

A-CPC-Koppel-1

COMMISSIONER KOPPEL: Yeah. Thanks again to the environmental review staff. You guys always do a very thorough job. So thanks again.

But I would like to echo the comments of Commissioner Diamond. You said it best when you said opportunity site. I mean, 20 acres in this seven-by-seven-mile-wide city is a huge opportunity. I just want to make sure we're not limited, with our limited horizontal footprint, in what we can do going upwards.

COMMISSIONER TANNER: Thank you.

A-CPC-Tanner-1

I'll align myself with those comments as well. In particular, thinking about some of the, you know, mega multi-phase projects we have in this city that, you know, get going, and then they run into a problem and then need to rethink what they're doing and how the EIR does or does not allow that type of flexibility for, you know, a future that's unknown, and that we're trying to plan for

A-CPC-Tanner-1 (cont.)

as best we can. So having, you know, a ceiling that's higher, maybe, than we need it to be in terms of, you know, dwelling units, in order to shift as needed or shift space around. Maybe it is a hotel or proposed as another use now but dwelling units make a better -- better proposition in the future.

A-CPC-Tanner-2

But I just again want to thank the staff for their great work and again for the project sponsor for bringing it forward. We're very, very excited about this and really just want to commend a very transformative proposal that both keeps the mall and brings it into -- really a whole new part of this neighborhood into being.

So we're very excited and thank, again, staff and for members of the public, again, calling in.

And I don't see any other hands or comments from other commissioners.

COMMISSION SECRETARY IONIN: Indeed, commissioners. That will conclude your agenda today.

COMMISSIONER TANNER: Thank you all for a short but very interesting hearing.

We're adjourned.

(Whereupon the proceedings adjourned at 3:18 p.m.)

---oOo---

REPORTER'S CERTIFICATE

I, BRIANNA RUDD, a Shorthand Reporter, State of California, do hereby certify:

That said proceedings were taken before me at said time and place, and were taken down in shorthand by me, a Certified Shorthand Reporter of the State of California, and were thereafter transcribed into typewriting, and that the foregoing transcript constitutes a full, true and correct report of said proceedings that took place.

IN WITNESS WHEREOF, I have hereunto subscribed my hand this 24th day of February 2023.

Brianna Rudd, CSR NO. 13668

ATTACHMENT B

Draft EIR Comment Letters and Emails

From: Luo, Yunsheng@DOT <Yunsheng.Luo@dot.ca.gov>
Sent: Wednesday, February 8, 2023 2:31 PM
To: Craciun, Florentina (CPC)
Cc: Leong, Mark@DOT; Zushi, Kei (CPC); Wietgrefe, Wade (CPC)
Subject: Comments for Stonestown Development Project, DEIR

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Good afternoon Florentina,

Thank you for the opportunity to review the DEIR for the Stonestown Development Project. We had a call with Kei and Wade this Monday regarding our comments. One question came up during the meeting was the location for the Caltrans project 04-4W490. But our project management team told me that there are multiples locations still pending to be finalized. Please see our comments below.

Comments

A-Caltrans-1

Project Coordination
Please specify the design and construction schedule of the proposed project. Please coordinate this project with the following adjacent Caltrans projects:

- Project 04-0AA62: 19th Ave Pave Rehab, design to be completed in June 2024
- Project 04-4W490: Traffic Signal Replacement (locations are pending to be finalized), design to be completed in FY 2026/27

Encroachment Permit
The following project elements identified in the DEIR will need the Caltrans-issued encroachment permit:

- Figure 2-22: the road approach and road connection off the State Highway System for the new streets
- Figure 2-23: the new proposed water line within the limits of Caltrans' Right of Way (ROW)
- Figure 2-26: the new private sewer line within the limits of Caltrans' ROW
- Figure 3.B-4: the proposed sidewalks within the limits of Caltrans' ROW

Feel free to reach out to me if you have any questions.

Best,

Yunsheng Luo
Associate Transportation Planner
Local Development Review (LDR), Caltrans D4
Work Cell: 510-496-9285
For early coordination and project circulation, please reach out to ***LDR-D4@dot.ca.gov***

San Francisco Planning

A-HPC
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

February 7, 2023

Ms. Lisa Gibson
Environmental Review Officer
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

Dear Ms. Gibson,

On January 18, 2023, the Historic Preservation Commission (HPC) held a public hearing for the Commissioners to provide comments to the San Francisco Planning Department on the Draft Environmental Impact Report (DEIR) for the proposed Stonestown development project at 3251 20th Avenue (2019-014485ENV). After discussion, the HPC arrived at the comments below on the DEIR:

A-HPC-1
- The HPC had no comments on the analysis of historic resources on the site and found the analysis to be accurate. Some commissioners expressed their preference regarding the architectural style of the theater.

A-HPC-2
- The HPC agreed that the DEIR analyzed a reasonable and appropriate range of preservation alternatives to address historic resource impacts. Some commissioners weighed the merits of the different alternatives and expressed a preference for one alternative over another.

A-HPC-3
- Commissioner Black inquired why the additional building W5 added to the Full Preservation Alternative was also not incorporated within the Partial Preservation Alternative. She thought the partial preservation alternative that saved the theater lobby was successful and supported it over the full preservation alternative.
- Commissioner Johns found the changes made to the partial preservation alternative to be acceptable.
- Commissioner So requested clarification as to whether or not the project team explored the possibility of constructing above the theater or explored reduction of other non-residential square footages on the site to increase the residential units under the preservation alternatives.

HPC Comments on the Proposed Project

A-HPC-4
- Commissioner Foley expressed support for the proposed project and expressed the need for the City to construct housing.

The HPC appreciates the opportunity to participate in review of this environmental document.

Review of CEQA Documents for Non-SFPUC Projects
San Francisco Public Utilities Commission

Document Name: **DEIR**
Project: **Stonestown Development Project**

SFPUC BEM Coordinator: **Monica Wu**
Date: 1/18/2023

	Comment Number	Commenter Name & SFPUC Division	Document Section Title or Section Number	Page Number and Line or Paragraph Number	Figure Number	Review Comment
A-SFPUC-1	1	Taylor Nokhoudian and Fan Lau, Water Resources Division	2.D.9 Infrastructure and Utilities	page 154 (2-36), paragraph 2	N/A	Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a non-potable use as it is required. Also, the Water Supply Assessment indicates that residential laundry would be another end use for non-potable supply in addition to toilet and urinal flushing, irrigation, and cooling tower. Please list all anticipated end uses of non-potable supply.
	2	Taylor Nokhoudian, Water Resources Division	2.D.9 Infrastructure and Utilities	page 155-156 (2-27 through 2-38)	Figure 2-24 and Figure 2-25	Why are the figures not showing non-potable water piping extending to building NW1?
A-SFPUC-2	3	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 501 (3.G-1), paragraph 2	N/A	Edit paragraph to align with 2020 UWMP: - Remove "Hetch Hetchy" in first sentence - Change to 26 wholesale customers instead of 27 - Revised last sentence as follows: "Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater, ~~and~~ recycled water, and non-potable water."
	4	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 502 (3.G-2), paragraph 2	N/A	Last sentence of paragraph may be redundant since similar to next paragraph. Suggest removing. If not, revise as follows to align wiht 2020 UWMP: "During multiple dry years, this would result in ~~a substantial reduction in the SFPUC's water~~ shortages in regional water system supplies from the Tuolumne River watershed."
	5	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 502 (3.G-2), paragraph 3	N/A	Revise sentence as follows to align with WSA language: "Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year and multiple dry year water supply shortfalls ~~and rationing~~corresponding to water use reductions throughout the SFPUC's regional water system service area, including San Francisco."
	6	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 503 (3.G-3), paragraph 1	N/A	At top of page, add following language before sentence that reads "To date, those negotiations are ongoing": "On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the State environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement."
	7	Annahita Fallah, Water Resources Division	3.G.2 Environmental Setting	page 503 (3.G-3), paragraph 3	N/A	Edit last sentence as follows: "The SFPUC has taken action to fund the study of additional water supply projects, which are described in the 2020 plan and referenced in the water supply assessment ~~for the variant and the 2020 plan~~."
	8	Taylor Nokhoudian, Water Resources Division	3.G.3 Regulatory Framework	page 508 (3.G-8), paragraphs 4-5	N/A	Under the discussion of San Francisco's Non-potable Water Ordinance, the proposed project should also include drain trap priming as a non-potable use as it is required.
	9	Taylor Nokhoudian, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 512 (3.G-12), paragraph 2	N/A	Discussion of the Non-potable Ordinance requirements differs from what is described on page 508 (3.G-8). These should be consistent with each other and should follow the language on page 508.

Review of CEQA Documents for Non-SFPUC Projects
San Francisco Public Utilities Commission

Document Name: **DEIR**
Project: **Stonestown Development Project**

SFPUC BEM Coordinator: **Monica Wu**
Date: 1/18/2023

A-SFPUC-2 (cont.)

Comment Number	Commenter Name & SFPUC Division	Document Section Title or Section Number	Page Number and Line or Paragraph Number	Figure Number	Review Comment
10	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 512 (3.G-12), paragraphs 2-3	N/A	The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.
11	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 513 (3.6-13), paragraph 5	N/A	The existing wording suggests that the regional treatment and distribution system is sized to meet the growing water demands, but that might be misleading. Revise sentence as follows: "The SFPUC has determined in the water supply assessment that the maximum estimated potable water demand for the variant is already accounted for within the overall San Francisco retail water ~~demands~~ demand projections, ~~for which the associated regional water treatment and transmission facilities have been established~~ supplies for which would be accommodated by the existing regional water treatment and transmission facilities."
12	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 514 (3.6-14), paragraph 3	N/A	Similar comment as above. The existing wording suggests that system capacity is sized based on the projected demands, but that is incorrect. Revise sentence as follows: "The proposed project or variant's potable water demand is already accounted for within overall San Francisco retail water demand projections ~~demands that are the basis for the capacity of regional water treatment and transmission facilities~~, supplies for which would be accommodated by the existing regional water treatment and transmission facilities."
13	Taylor Nokhoudian, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 515 (3.G-15), paragraph 3	N/A	Under "Operation", the description of how the project plans to comply with the Non-potable Ordinance should be consistent with how it's described above on page 508 (3.G-8). Currently the description is inconsistent.
14	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 515 (3.G-15), paragraph 3	N/A	Same comment as above regarding difference in resident and employee estimates. The Population and Housing analysis in the Initial Study provides resident and employee estimates that differ from those used in the Water Supply Assessment. Provide an explanation in a footnote or elsewhere as to why the estimates differ and how the difference affects the water supply impacts analysis, if at all.
15	Fan Lau, Water Resources Division	3.G.4 Impacts and Mitigation Measures	page 515 (3.G-15), paragraph 5	N/A	The Water Supply Assessment does not make any determination based on the potable portion of the project's demand estimate. The assessment is based on the total project demand. Revise sentences as follows: "The water supply assessment determined that the ~~variant's potable water demand of 0.152 mgd would contribute 0.19 percent to the projected total demand for San Francisco water customers of 80.6 mgd in 2045. The~~ variant's total water demand of 0.249 mgd, which does not account for the 0.097 mgd savings anticipated through compliance with the non-potable water ordinance, would represent 0.31 percent of 2045 total demand for the city."

Ingleside Terraces Homes Association

O-ITHA

P.O. Box 27304 • San Francisco, California 94127

Feb. 10, 2023

Florentina Craciun, EIR Coordinator
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
CPC.Stonestown@sfgov.org

Re: Project Title: Stonestown Development Project

This letter, on behalf of the Ingleside Terraces Homes Association, a neighborhood organization representing 750 households to the east of the proposed project, is our response to the draft EIR. We have the following issues and concerns regarding the identified impacts as well as the lack of identifying additional impacts and their satisfactory analysis and mitigation enumerated below.

IDENTIFIED IMPACTS

I-ITHA-1 **Section 3.B, Transportation and Circulation**

- We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA.

I-ITHA-2 **Section 3.C, Noise and Vibration**

1. We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a non-profit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences.

I-ITHA-3 **Section 3.G, Utilities and Service Systems**

- We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify.

I-ITHA-4

- We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used.

MISSING IMPACTS

I-ITHA-5

- **Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact be identified, analyzed, and mitigated with additional staffing or a manned police sub-station.

- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled.

I-ITHA-6

- **Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks, streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston.

I-ITHA-7

- **History:** We understand that in recognition of the potential impact of the original Stonestown Mall project on the surrounding neighborhoods, the original proposal was modified to protect the quality of life of these communities. We request that the EIR detail and examine the initial City approval process for Stonestown and the mitigating measures taken at that time and ensure that is maintained if still relevant to place this project in the proper historical context.

We look forward to your careful consideration of these community issues and the preparation of a Final EIR that addresses the issues we have raised above.

Sincerely,

Mark V. Scardina, President
Ingleside Terraces Homes Association

SAN FRANCISCO STATE UNIVERSITY

UNIVERSITY ENTERPRISES

1600 Holloway Avenue
San Francisco, CA 94132

Tel: 415/338-6880
sfsu.edu

February 13, 2023

Florentina Craciun, EIR Coordinator
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

Via email to: cpc.stonestown@sfgov.org

Re: Comments on Draft Environmental Impact Report
Stonestown Development Project

Dear Ms. Craciun,

On behalf of San Francisco State University, I am pleased to submit the following comments on the draft environmental impact report for the Stonestown Development Project. As the project's largest neighbor, with our Holloway campus just south of the project site, the university has taken great interest in the planning that has been underway at Stonestown. We have appreciated the opportunity to attend regular community meetings and planning charrettes with others from the neighborhood and throughout the City, and we very much appreciate the thoughtful and engaging community outreach program pursued by the developer so as to garner community feedback. With over 20,000 students and 3,000 employees, our campus community is inherently tied to Stonestown; the City's transportation and utilities infrastructure, housing stock, public open space, and many other vital services are shared among the communities near the project site. Thus, coordination, ongoing planning and dialogue are essential components to ensuring a vibrant, safe, well-functioning community.

Below, please find several comments on the Draft EIR for consideration as the Final EIR is prepared:

O-SFSU-1

1) Transit Services: With a significant increase in the anticipated number of transit riders on the SFMTA's M-Line, please analyze whether there may be value in any of the following approaches:
   - A) extending platforms at stations along the corridor to permit three-car trains;
   - B) extending the J-Church line to the Holloway/SFSU or Winston/Stonestown Stations, so that both the M and J lines can serve the project site and others in the vicinity.

O-SFSU-2

2) Housing: Currently many SF State students, faculty and staff face long commutes to reach the university campus next door to the project site. Please consider whether unique initiatives exist which may reduce travel times for those affiliated with SF State by providing affordable housing. Such an approach would alleviate transit and transportation impacts as well as greenhouse gas emissions. Additionally, in considering the types of housing being offered, please consider the specific needs of the SF State community, particularly as they would complement the university's offerings.

O-SFSU-3

3) Pedestrian and Bicycle Connections: Currently, there is a great deal of pedestrian and bicycle activity between SF State and the project site. We expect this level of activity to increase significantly under the proposed project—both from residents and patrons of the Sonestown site, as well as residents and students at SF State. It will be critical that bike and pedestrian routes are mutually planned and implanted to ensure safe and clear paths of travel. Ample bicycle parking will also be needed to support this effort.

O-SFSU-4

4) Street Configuration: Please assess the proposed layout of both Buckingham Way and Winston Drive, as they relate to the anticipated increase in travel between SF State and the project site. We expect that many students, faculty and staff who live on campus or who will live at the project site and walk to SF State will cross one or both of these streets. Safe passage, clear paths of travel, and appropriate vehicle signals will be critical to support this activity.

O-SFSU-5

5) Workforce Considerations: SF State plays a key role in developing the City's and the region's workforce, and the opportunities for our students to gain hands-on, practical experiences in the workforce may be significant. we would welcome the opportunity to consider partnerships that provide workforce training, and related collaborations.

O-SFSU-6

6) Open Space: As a public university, SF State is a beloved place to visit—to enjoy the quad, pathways and other spaces for outdoor recreation and enjoyment. With the addition of a large residential community please consider how the project's population will be provided with open space for outdoor recreation and enjoyment to complement those provided at the university and surrounding environs. Perhaps there are options that might include accessible rooftop gardens, which would provide views of the ocean and the lake nearby.

O-SFSU-7

7) Utilities:

- A) SF State occasionally experiences power outages and we are considering methods whereby we may have access to redundant power supplies from differing sources. Please consider whether the project site has ample access to utilities and whether additional sources are needed to support this growth.

O-SFSU-8

- B) Please consider electric/battery generators, rather than gas-powered so as to reduce air pollution.

O-SFSU-9

- C) The project considers water demand for landscape irrigation and cooling. Please assess whether there might be an opportunity to access recycled water via

O-SFSU-9 (cont.)

purple pipes from nearby sources. Extension of such infrastructure to the project site may benefit other projects as well.

Thank you for your consideration, and please let me know if I can provide any additional information.

Sincerely yours,

Jason Porth
Vice President
University Enterprises

SIERRA CLUB
FOUNDED 1892

SAN FRANCISCO GROUP

January 27, 2023

Florentina Cracium, Coordinator
CPC.Stonestown@#sfgov.org
Planning Department, 1660 Mission Street
San Francisco CA 94103-2414

Re: Stonestown DEIR Comments, Case No. 2021-012028ENV

Dear Ms. Cracium,

I-SierraClub-1 Thank you for the opportunity to comment on the subject SEIR. The Sierra Club appreciates your electronic publishing of the DEIR to save paper, printing and mailing cost.

The subject document has over 600 pages that attempt to deal with prospective environmental failures. Thankfully, the Stonestown project, of dense housing near good transit is inherently a benefit to the environment by providing residents with thermally efficient housing and a more economic life of less driving. The Sierra Club has reviewed the subject Draft EIR and we have a few suggestions to improve the final EIR and make the ultimate project more even beneficial to the environment:

I-SierraClub-2 1) Because of San Francisco's great need of additional affordable housing the Study should have included a statement about how many additional affordable units, of what kind, would be provided if an outside source of funding, of how much, was available.

I-SierraClub-3 2) Because of SF's increasing numbers of elderly residents and our great need for market rate housing the study should have included as a partial alternative the impacts of using the eighteen story building as a senior "independent living" residence. This alternative should note that many of the residents of this senior facility would be people who are ready to downsize from a two or three bedroom home or apartment but now see little advantage to moving. If they can move into a nearby senior residence they will release their larger, nearly empty, houses for families who need more space. In addition some of these homes have a lower floor that can be improved to provide a second housing unit, but, that is too big a project for an elderly person. An attachment is provided to show how this building might work as an Ideal senior residence.

3) Because of SF's great need of housing of all sorts the Study should have included an alternative of greater density and height (without shading an existing park) with up to the maximum number of units, with existing zoning, or more. This alternative would provide the developer with greater profits from the currently wasted parking lot land and more shoppers for

I-SierraClub-3 (cont.)

the remaining shopping center. The studies discussion of the problems and benefits of increased density on this site might give the public and their elected representatives a chance to select a larger project or a better understanding of why the proposed size is just right.

Another Sierra Club member may be commenting on other aspects of this project

Thank you for your consideration,

Howard Strassner, Member SF Group Executive Committee of the Sierra Club
419 Vicente, San Francisco CA 94116, 661-8786, (h,w)
email: ruthow1@gmail.com

From: aeboken <aeboken@gmail.com>
Sent: Monday, February 13, 2023 4:30 AM
To: Craciun, Florentina (CPC)
Subject: Stonestown Draft EIR Comments

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

DATE: February 13, 2023 (Submitted prior to 5pm.)

TO: Florentina Craciun
San Francisco Planning Department

FROM: Eileen Boken, President
Sunset-Parkside Education and Action Committee (SPEAK)

RE: Stonestown Draft EIR Comments

BACKGROUND

Due to redistricting, Stonestown is now in both Board of Supervisors Districts 4 and 7.

O-SPEAK-1

PROJECT SCOPE

The project proposal includes a 200 room hotel. The Westside is not a tourist or business destination. The hotel should be reassigned to housing.

The project proposal includes office space. The Westside is not a business destination. Also, there is a high commercial vacancy rate in the downtown core. The office space should be reassigned to housing.

The project proposal includes an increase in retail space. With increases in online retail, this increase should be eliminated.

HEIGHT

The tallest structure in the proposed project is eighteen (18) storeys. The tallest structure in the SFSU student housing site is ten (10) storeys. The tallest structure in ParkMerced is fourteen (14) storeys but at a lower geographic elevation.

SPEAK is advocating for the tallest structure in the Stonestown project to be ten (10) storeys mirroring the adjacent structures in SFFU student housing.

O-SPEAK-2

SB7 (Atkins)

SPEAK is strongly opposing the proposed application for SB7 (Atkins) streamlining. SB7 (Atkins) is a deeply flawed reauthorization of a previous bill.

O-SPEAK-3

UTILITIES AND SERVICE SYSTEMS

The project proposes to construct independent Emergency Firefighting Water System (EFWS) pipes onsite.

However, the Draft EIR states that the nearest hookup to the City's EFWS pipeline network is Ocean Avenue and San Fernando Way.

Although geographically closest, this hookup location doesn't appear to deliver the maximum benefits of EFWS.

Besides high volume, EFWS pipes and hydrants are designed to utilize high pressure.

The typical residential water pressure is 60 psi. The EFWS system can reach a maximum pressure of 328 psi.

However, this is dependent on EFWS hydrants and pumping stations.

There are currently two (2) EFWS pumping stations on the Eastside of the City.

For the Stonestown EFWS to operate effectively, there needs to be an ocean water pump station.

To achieve this, a possible configuration is hooking up to the EFWS pipe and hydrant on 19th Avenue at Ulloa and extending it to 19th Avenue and Buckingham Way.

This could connect to another section of EFWS pipes and hydrants from 19th Avenue and Sloat to Sloat and the Great Highway.

The ocean water pump station could be located in the vicinity of the Oceanside Treatment Facility.

An affiliate of Brookfield Properties is Brookfield Infrastructure. Brookfield Infrastructure should be well positioned to implement this EFWS expansion as part of the Stonestown Development Agreement.

A subsidiary of Brookfield Infrastructure is Poseidon Water.

Poseidon Water is the owner/operator of a desalination (desal) facility in San Diego County. The engineering firm for this facility is IDE Technologies.

It has been confirmed by IDE Technologies that it is technically feasible to engineer a combined EFWS ocean water pump station and a desal facility.

The structure would function as a desal facility during normal operations and bypass the desal process in an emergency to provide ocean water directly to the EFWS system.

This could also be included in the Development Agreement.

O-SPEAK-4

RELATED ISSUES

ParkMerced is nearby Stonestown. ParkMerced is owned by Maximus Real Estate Partners.

Maximus in currently in loan forebearance for the ParkMerced property and is expected to default in late 2023 or early 2024.

SPEAK would urge Brookfield Properties to negotiate with Maximus Real Estate Partners to acquire the ParkMerced property with the provision that the City have the option to purchase the property or parts of the property over the next thirty (30) years.

###

Sent from my Verizon, Samsung Galaxy smartphone

West of Twin Peaks Central Council
A Resource for Neighborhood Organizations West of Twin Peaks in San Francisco since 1936

PO Box 27112
San Francisco, CA 94127
http://www.westoftwinpeaks.org/

<DATE>

West of Twin Peaks Central Council
PO Box 27112
San Francisco, CA 94127

Florentina Craciun, EIR Coordinator
49 South Van Ness Ave,
Suite 1400,
San Francisco, Ca. 94103

Dear Ms. Craciun,

The West of Twin Peaks Central Council represents over twenty San Francisco neighborhoods and thousands of homeowners. It was formed over 80 years ago to provide input into the development and zoning of the community in which many have invested and raised families.

We have the following issues and concerns regarding the identified impacts as well as the lack of identifying additional impacts and their satisfactory analysis and mitigation enumerated below.

IDENTIFIED IMPACTS

O-WTPCC-1 **Section 3.B, Transportation and Circulation**

- We recognize that the intersections of Ocean & Cerritos, Junipero Serra & Winston, and 19th Ave & Winston were analyzed for traffic impacts and that monitoring and mitigations were limited to only Winston from Junipero Serra to 19th Ave. Given that significant westbound traffic currently backs up Cerritos and other neighborhood streets to Ocean Avenue due to the shorter distance and GPS routing, we request that this impact boundary be extended to Ocean Ave and Cerritos for establishing a baseline for traffic delay as well as a mitigation plan with the SFMTA.

O-WTPCC-2 **Section 3.C, Noise and Vibration**

- We recognize that there are two potential public spaces, Town Square and Westside Park where amplified performances could occur and that the mitigation as offered is the standard City noise ordinance which allows for 80dbA levels till 10 PM. The developer has expressed their intent to focus on daytime community performances managed by a non-profit. We request that this intent be reflected in the mitigation given the proximity to both on-site and neighboring residences.

O-WTPCC-3 **Section 3.G, Utilities and Service Systems**

- We recognize that the impact on the SF water supply was only considered as a percentage of the total water available to the City without regard to how this increased volume gets delivered to an area surrounded by single-family home neighborhoods whose water is gravity fed through an aged infrastructure. We request that further analysis be performed on both the volume and pressure impact on the surrounding neighborhoods and if necessary, mitigation measures to rectify.

DRAFT

O-WTPCC-4

- We recognize that the wastewater treatment plant has frequent backups due to the paved neighborhood yards and synthetic surface runoffs which cannot be mitigated without increasing the salinity of the treated water and that no impact was detailed due to simply accepting the wastewater company's sign-off that the black water waste was within its capacity. We request a data-based impact analysis be included that factors in run-off management and how to prevent the morbidity of plants in parks and open spaces where this water is used.

MISSING IMPACTS

O-WTPCC-5

- **Police Services:** We recognize that the on-site private security force is not made up of sworn officers and that police services would be SFPD's responsibility. Taraval Police District is geographically the largest in the City and would be responsible for responding to these 5000+ new residents. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing or a manned police sub-station.
- **Firefighting and EMT Services:** We recognize that there will be several 18-story buildings along with the increased residential density served by a single fire station and that this area has no currently planned access to AWSS even though the developer will provide the on-site infrastructure for connection. We request that this impact needs to be identified, analyzed, and potentially mitigated with additional staffing and specialized equipment as well as considering the acceleration of the AWSS extension project committed to but not yet scheduled.

O-WTPCC-6

- **Public Vistas:** We recognize the substantial massing and height of this development and its prominence will be visible from public vistas predominantly from the east and west. We request that this impact be identified, analyzed, and potentially mitigated by consideration of DEIR Alternatives D or E. The EIR should provide visual depictions of the proposed development skyline as it will be seen from sidewalks, streets, and parks in the surrounding neighborhoods, including changed public vistas for visitors to Lake Merced and Fort Funston.

O-WTPCC-7

- **History:** We recognize that the original Stonestown retail development would impact the surrounding neighborhoods and that impacts were identified and mitigated to protect the quality of life of these communities. We request that the EIR should examine the initial City approval process for Stonestown and the provisions made at that time and ensure that is maintained if still relevant to place this project in the proper historical context.

We look forward to your careful consideration of these community issues and your response.

Sincerely,

Stephen Martin-Pinto
President,
West of Twin Peaks Central Council

Representing Balboa Terrace Homes Association, Forest Hill Association, Forest Knolls Association, Golden Gate Heights Neighborhood Association, Greater West Portal Neighborhood Association, Ingleside Terraces Homes Association, Lakeshore Acres Improvement Club, Lakeside Property Owner's Association, Merced Manor Property Owner's Association, Midtown Terrace Homeowner's Association, Miraloma Park Improvement Club, Monterey Heights Homes Association, Mount Davidson Manor Homeowners Association, Mount Sutro Woods Owners Association, Pinelake Park Neighborhood Association, Saint Francis Homes Association, Sherwood Forest Homeowner's Association, Sunnyside Neighborhood Association, Twin Peaks Improvement Association, Westwood Highlands Homeowner's Association, Westwood Park Association and The Woods of San Francisco Homeowners Association

DRAFT

From: Bob Anthony <bobanthony46@gmail.com>
Sent: Tuesday, February 7, 2023 3:59 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Hello,

I-Anthony-1 We are vehemently opposed to the proposed redevelopment of Stonestown that would include the proposed 2900 housing units and an 18 story hotel. We have lived in this neighborhood all of our lives and have seen the increase in traffic and people explode over the years. The proposed project would absolutely destroy the quality of life in the area. The City of San Francisco has already deteriorated enough as it is.

Thank You,

Bob and Maha Anthony

From: Antonio Arbulu <arbuluanthony4@gmail.com>
Sent: Saturday, February 11, 2023 2:45 PM
To: CPC.Stonestown
Subject: Comment on Stonestown EIR

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Arbulu-1 We reside in Merced Manor which is right
> across the street from Phase 1 of the project. We have just seen the plans for the parking lot near our home and are very concerned about the scope of the project and the construction noise that they estimate will take at least 4 years for Phase 1 alone, AND the noise and traffic that will be in our neighborhood forever
>

I-Arbulu-2 > It does not appear that the impact on our neighborhood has been adequately addressed. No one from the developer ever approached us for our input. They held open houses to say WHAT they were going to do— not for suggestions. Then in the final plan they changed the scope of Phase 1 with even bigger and taller buildings. The people they list as supporters do not live in the neighborhood. Of course they will support it because they will reap the benefits of visiting a massive new mall and then going home to their neighborhoods and leaving the noise and traffic to those who actually live here!
>

I-Arbulu-3 > There are 3 schools in our neighborhood spanning 8 blocks—a high school and 2 primary schools. You need to be here in the mornings before school to see first hand the chaos and gridlock every morning. Parents double park, block driveways, and honk at each other as they drop their kids off, and the students who drive themselves scour the neighborhood for parking spots.
>
> Adding hundreds of residents a block away —-many of whom will also seek parking—will only make it worse on our neighborhood
>

I-Arbulu-4 > Finally, the construction noise over a minimum of 4 years will be a terrible nuisance. Pile driving etc. Would YOU like to hear that from your home for 1/2 a decade? Of course not! So don't allow the developer to do that to us!
>

I-Arbulu-5 > The scope of Phase 1 must be scaled down to reduce the impact on the existing residents. This is not some remote parking lot that they want to develop with nothing around it, or in an empty downtown This is in the middle of our neighborhood. Please help us!
>
> [Name withheld for fear of retribution from the developer]

From: Laurie Berman <lmberman@earthlink.net>
Sent: Wednesday, February 8, 2023 12:19 AM
To: CPC.Stonestown
Subject: EIR.

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Berman-1 We have lived in Lakeside ll since 1975 and we do not approve of any of the changes mentioned in this EIR!!! For one thing the traffic will be a nightmare. Also I could have stayed in Manhattan if I wanted concrete canyons.
Sent from my iPhone

From: Cenpai <s.x.echarles@gmail.com>
Sent: Wednesday, February 8, 2023 1:11 AM
To: CPC.Stonestown
Cc: dlhsf1@aol.com
Subject: Objections to 4 Story Building behind Rolph Nicol Park

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Hello,

I-Cenpai-1 I am sending this email to voice my objections against the development of the building behind Rolph Nicol Park. I believe that having a building there is not only environmentally detrimental, but also a safety concern

I-Cenpai-2 for current residents. Environmentally, more traffic in that area will increase trash and garbage within the area. In addition, having a tall building there where dogs and kids alike gather will make it less safe. Crime has been on a rise in the neighborhood, and with a tall building blocking everything, crime will definitely increase. Do we really need a second tenderloin in San Francisco? I don't think so. Please keep this residential area safe and spacious before building more things and causing higher human traffic.

Best,
Inverness

From: Mary Chang <marymchang@yahoo.com>
Sent: Tuesday, February 7, 2023 8:41 PM
To: CPC.Stonestown
Cc: Mary M Chang
Subject: Subject: Draft Environmental Impact Report Stonestown Development Project Comments from Lakeshore residents

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Ms. Florentina Craciun, EIR Coordinator,

My name is Mary Chang, I reside on 57 Stratford Drive, San Francisco, CA 94132 (Member of Lakeside Property Owners Association.

I am writing to Oppose the the EIR on Stonestown development Project for the following reasons:

I-Chang-1 (1) Currently, there is a lot of traffic on 19th Avenue and Stonestown area. By having this project developed, it will create more congestion and significant noises

I-Chang-2 (2) It is very hard to find parking even for the Lakeshore residents right now, this project will create even more parking problems.

I-Chang-3 (3) We have a lot of foot traffic near the Stonestown mall, with the increase of traffic and populations, it will likely to have more car/pedestrians accidents.

I-Chang-4 (4) The air quality will get worsened with the proposed apartment and hotel construction

I-Chang-5 (5) It will increase the demand and the response time for public services from fire protection, police and emergency services

I-Chang-6 (6) Increase the risks posed by demolition of existing buildings for hazardous materials, directly affect our health for the existing local residents

I-Chang-7 (7) This project has a significant impact on increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore

I-Chang-8 (8) SFMTA streetcar platform is already at capacity during rush hours. can you address the impact of increased ridership.

Please listen to my voice and I look forward to hearing from you soon!

Regards,

Mary Chang

Email: marymchang@yahoo.com

From: Su-Syin Chou <susyinchou@gmail.com>
Sent: Sunday, February 12, 2023 1:04 PM
To: CPC.Stonestown
Cc: dlhsf1@aol.com; Anthony Chen; Chen, Yu-Lang (Angus)
Subject: Stonestown - 90-foot tall Residential Tower (OBOJECTIONS)

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Florentina Craciun, EIR Coordinator,

I, on behalf of my family, am sending in an objection to the Stonestown proposed development, specifically a 90-foot tall residential tower next to Rolph Nicol Park.

I-Chou-1 For years, we were informed that a 4-story building in that spot was proposed. Its Environmental Impact Report (EIR) will provide an overview of the project, in-depth studies of potential impacts, measures to reduce or avoid those impacts, maps and technical details of the project area and an analysis of alternatives to the project. Yet, a 90-foot residential tower has been inserted into the Draft EIR filed with the City on 12/14/2022. This is an dishonest move that breaks the Merced Manor and Lakeshore neighborhood's trust.

I-Chou-2 The proposed building is also next to Saint Stephen Church and School. This quiet community will be impacted in many ways (to be addressed in the EIR in-depth). Saint Stephen School children will not receive the same quality of school environment/life/education as my children received from there as a dense neighborhood brings many adverse impacts to a safe environment.

I-Chou-3 As a professional Civil Engineer and over 30 years resident, I would like to request a copy of draft EIP for my review prior to its certification.

Thank you for your time and your consideration.

Best regards,
Su-Syin Chou, P.E.
Merced Manor and Lakeshore Resident

From: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Sent: Monday, January 9, 2023 12:55 PM
To: Susan Yogi
Subject: FW: Stonestown Draft EIR

Susan,

Can you double check that we included the WTPCC letter?

Thank you,

Florentina Craciun, AICP
Senior Environmental Planner
Environmental Planning Division
San Francisco Planning Department
1650 Mission Street, Suite 400 San Francisco, CA 94103
Direct: 628.652.7510 | www.sfplanning.org
San Francisco Property Information Map

From: Paul Conroy <conroy@wans.net>
Sent: Thursday, January 5, 2023 3:42 PM
To: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Subject: Stonestown Draft EIR

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Ms. Craciun,
I have two preliminary process questions, having looked at the Draft EIR:

I-Conroy1-1

1. I understood that the West of Twin Peaks Central Council (WTPCC) made written comments about the scope of the EIR before the deadline for public comment. However, I don't see any reference to comments by the WTPCC in the draft EIR. Were written comments received from the WTPCC?

2. The announcement of the availability of the Draft EIR for comment and the deadline for public comment, both in writing and at the hearing, is timed such that affected neighborhood organizations (that do not meet in December because of the holidays) are limited in their ability to discuss and develop responses to the Draft EIR before the February 13th deadline. How can this deadline be extended 30 days to permit considered responses?

Thank you.
-Paul Conroy

Paul A. Conroy
conroy@wans.net

February 13, 2023

Florentina Craciun, EIR Coordinator
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
CPC.Stonestown@sfgov.org

Re: Stonestown Development Project – COMMENTS ON DRAFT EIR
Case No. 2021-012028ENV

Dear Ms. Craciun:

I-Conroy2-1 The Draft EIR does not adequately address several of the significant negative impacts that would be created by the proposed Stonestown Development Project.

The Draft EIR fails to meet the requirement that an EIR "contain sufficient information to understand the project's environmental impacts. (Dry Creek Citizens Coalition v. County of Tulare (1999) 70Cal.App.4th 20, 28.) "Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal ... and weigh other alternatives in the balance." (County of Inyo, supra, 71Cal.App.3d at pp.192-193.)" Save Our Capitol! Vs Department of General Services (Opinion Filed January 18, 2023; No. C096617, California Court of Appeal, 3rd Dist., p.12)

I-Conroy2-2 The Draft EIR does not adequately inform the public and public agency decision-makers with respect to several environmental impacts, as addressed by comments from affected neighborhood associations. The Draft EIR does not address many of the earlier public comments regarding the scope of the EIR, other than to note that the comments were made. This is particularly true with respect to the comments regarding the project's blocking of public vistas and view corridors.

I-Conroy2-3 Also, only short shrift is given to the public comments concerning traffic impacts to surrounding neighborhoods - the Draft EIR identifies that Winston Avenue may experience traffic back-ups of one block, but ignores the remainder of the surrounding neighborhoods.

PUBLIC VISTAS AND VIEW CORRIDORS

I-Conroy2-4 The Draft EIR does not even acknowledge blocked public vistas as significant adverse impacts on the surrounding neighborhoods and the City's southwestern quadrant. The Draft EIR does nothing to clarify the misleading depictions of the project contained in the developer's presentations - the developer's birds-eye views and aerial renderings hide the true visual impact of the project's towers and mid-rise structures. In this respect the Draft EIR does not meet the requirement that it present sufficient information on this subject so that the public and the public agency decision-makers have sufficient information to assess the project's negative environmental impacts.

I-Conroy2-4 (cont.)

The Draft EIR should, but does not, contain photographs, renderings and depictions of the project's visual impact on public vistas and views from streets, sidewalks and other public areas within the surrounding neighborhoods. The disruption of views from public parks, including Lake Merced and Fort Funston, requires depiction, discussion and analysis of mitigating measures. The draft EIR does not discuss the fact that the existing ten story buildings to the west of the project are situated at a ground elevation much lower than the project. Those buildings therefore do not serve as a guide to how a ten story, much less a nineteen story building, will appear on the project site. The EIR should address the project sponsor's promotion of the project as a "city within a city" and how that notion of a high-rise downtown in the midst of residential neighborhoods so close to the coastline will effect a major deviation from the area's overall city pattern.

INCONSISTENCY WITH THE URBAN DESIGN ELEMENT OF SAN FRANCISCO'S GENERAL PLAN

I-Conroy2-5

Despite public scoping comments, the Draft EIR has not addressed how the project deviates from the Urban Design Element of the General Plan. The Urban Design Element requires that projects be compatible with the views and vistas afforded by the existing city pattern.

The Draft EIR does not identify the project's inconsistencies with the Element's policies, as requested by the undersigned's EIR scoping letter as follows:

Policy No. 1.1: Recognize and protect major views in the city, with particular attention to those of open space and water.

The project will disrupt and block views of the Ocean, the shoreline and sunsets on the Ocean's horizon from the neighborhoods to the east of the project. The increased height will also disrupt views of Mount Davidson, Twin Peaks and other topographical features from areas west of the project, including, for example, views from Fort Funston.

Policy No. 1.3: Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

This policy provides that "…the relationships of building forms to one another and to other elements of the city pattern should be moderated so that the effects will be complementary and harmonious." In other words, the buildings should fit with one another to produce a harmonious effect. The Draft EIR should, but does not, analyze to what extent the proposed increased height and bulk conflict with the existing topography and buildings.

Policy No. 2.6: Respect the character of older development nearby in the design of new buildings.

The Draft EIR does not consider whether the project's new buildings conflict with the pattern established by the existing buildings in the area, including the existing apartment buildings and adjoining residential neighborhoods: Policy 2.6 further states that, "In some cases, formal height

I-Conroy2-5 (cont.)

limits and other building controls may be required to assure that prevailing heights or building lines or the dominance of certain buildings and features will not be broken by new construction."

Policy No. 3.5: Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development.

This policy, similar to Policy 2.6, must also be considered by the EIR in determining whether the heights proposed by the project are out of scale with the surrounding area, imposing a significant adverse environmental impact on the area.

Policy No. 4.1: Protect residential areas from the noise, pollution and physical danger of excessive traffic.

The EIR should evaluate the extent to which the proposed project will increase traffic through the neighborhoods and consider mitigating measures to be taken, such as those suggested by this policy.

THE DRAFT EIR DOES NOT ADDRESS THE PRECEDENT SETTING ASPECT OF THE PROJECT

I-Conroy2-6

The project's proposed deviation from the existing zoning restrictions will set a precedent for similar departures from existing planning. This will encourage and enable similarly scaled projects that are inconsistent with the character of the City's southwestern quadrant. This and similarly scaled projects will permanently disrupt the existing broad skyline, which has always respected vistas of the ocean and topographical features from all parts of the city west of Twin Peaks. These adverse environmental impacts are not identified by the Draft EIR. While a zoning compliant alternative is presented by the Draft EIR, the adverse environmental consequences of a project that is not compliant with existing zoning are not, but should be discussed. This is necessary in order to adequately present the consequences of potential decisions made regarding this project.

THE DRAFT EIR DOES NOT DISCUSS THE ORIGINAL PERMITTING OF THE STONESTOWN MALL AND THE ACCOMODATIONS TO THE SURROUNDING NEIGHBORHOODS

I-Conroy2-7

In the "history" section of the Draft EIR, there is no discussion of the public process by which the Stonestown Mall was first established. The EIR should analyze the initial purpose of the Stonestown Mall as described in the Planning Department documents governing the establishment of the mall, consider the benefits to the surrounding neighborhoods as expressed in those documents, and determine the negative impacts caused by the deviation from the parameters originally established for the Stonestown Mall.

Florentina Craciun, EIR Coordinator
San Francisco Planning Department

CONCLUSION

I-Conroy2-8 The Draft EIR does not adequately inform the public of many of the adverse environmental consequences of the project. The Final EIR should address all significant environmental effects of the project, including those described above.

Very truly yours,

Paul A. Conroy

Project Title: Stonestown Project

Case No: 2021-012028ENV

Date: February 9, 2023

Attn: Florentina Craciun, EIR Coordinator

Email: cpc.stonestown@sfgov.org

Subject: Draft Environmental Impact Report

Stonestown Development Project

Comments

From: Barbara and Robert DeBaun

127 Denslowe Drive, San Francisco, CA 94132

Member, Lakeside Property Owners Association

I-DeBaun-1 We purchased our home on Denslowe Drive in December 2008. Having lived in a very dense and heavily populated neighborhood (NOPA) for over 20 years, we were attracted to the idyllic nature of the Lakeside neighborhood. Certainly, the neighborhood has changed in the past 14 years but its sweet neighborhood 'look and feel' remains.

We are deeply concerned about the impact the proposed Stonestown Project will have on our community.

I-DeBaun-2 1. EIR Section 3-2: 19th Avenue is already a highly congested thoroughfare. The impact of increased traffic in this area, potential diversion of Stonestown related traffic into Lakeside and other adjacent neighborhoods, impact of street parking (supply vs. demand) , pedestrian crossings must be adequately addressed.

I-DeBaun-3 2. Section D-4: the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Holloway Drive and Buckingham way must be adequately addressed.

I-DeBaun-4 3. Section 3.6: there are multiple schools in the area that will be impacted by shadows/loss of sunlight.

I-DeBaun-5 4. Section 3.3: we have been directly impacted by the construction of the Science Building on the SFSU property. Noise, significant vibrations, loss of sunlight due to height of building

I-DeBaun-6 5. Section 3.1: how will the architectural style/height blend with the unique character of the homes in Lakeside and adjacent neighborhoods? Nearly 3,000 housing units and an 18-story hotel will dramatically alter the architectural character of the neighborhood

I-DeBaun-7 6. Section E.13: The need for increased police, fire, emergency and public services for the 2,900 new dwellings and the 18 story hotel must be addressed

I-DeBaun-8 | 7. Section E.17: What steps have been taken to evaluate the health and safety impacts of demolition of existing buildings?

I-DeBaun-9 | 8. Section 3.2: The platform for the SFMTA streetcar on 19th Avenue and Holloway are already not adequate during peak times such as morning and evening rush hours. The impact this project will have on ridership must be addressed.

From: Eugene Birsinger <ebirsingerjr@yahoo.com>
Sent: Thursday, February 9, 2023 7:12 AM
To: CPC.Stonestown
Cc: Laura Birsinger
Subject: Stonestown Project - 2021-012028NV

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

To: Floretina Craciun

I-EBirsinger-1 i am writing in regards to the subject project. i am totally against it. I am a Lakeside resident for nearly 30 years. The project would add tremendous congestion to the area. I suggest you take some of the vacant building in downtown SF and convert them to housing.

Besides congestion, here are a few more reasons why I don't like the project:

I-EBirsinger-2 1.) Section 5.C of the EIR Draft: Safety: Stonestown is a mess with crime. Shoplifting is rampant. Car break-ins occur all the time. Police protection is already inadequate. Does the EIR report address these issues?

I-EBirsinger-3 2) Traffic - Section 3.2 of the EIR Draft. Traffic on Winston and Nineteenth Ave is already terrible. Congestion is getting worse. All of these new residents and businesses in this project will add to much traffic. Gridlock will be everywhere. How does the EIR Draft address this issue?? By the way, Muni is not the solution. Muni service is already terrible on Nineteenth Avenue.

I-EBirsinger-4 Terrible project...to much congestion., more crime, and more traffic. SF already has plenty of vacant buildings to use for housing..

Regards,

Gene Birsinger
223 Stonecrest
San Francisco, CA 94132

.

From: Lynn Finnegan <lynn.finnegan@compass.com>
Sent: Thursday, February 9, 2023 4:55 PM
To: CPC.Stonestown
Subject: Comments | Draft EIR for Stonestown Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Hello,

I am a 25-year resident of West Portal and Parkside, near Stonestown.

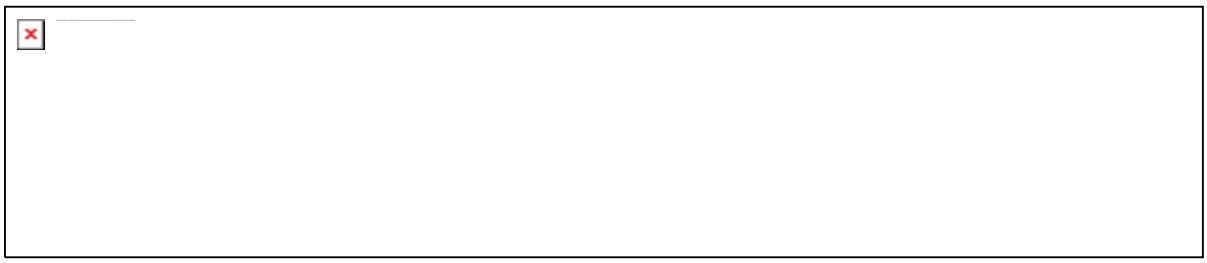
I-Finnegan-1 Though my interpretation of the EIR is elementary, I endorse the draft EIR and am in support of the project offering much-needed additional housing. I believe that a project like this is perfect for all the current open and underutilized space and will attract more business and commerce to the west side of the City.

Lynn Finnegan

Lynn Finnegan | Broker Associate
1699 Van Ness Avenue
San Francisco, CA 94109
c: 415.254.2509
LynnFinneganSF.com
DRE#: 01423977

SOLD! Modern Townhome Condo in City Center
SOLD! Pacific Heights Classic
SOLD! Perfect Perch in Parkside
SOLD! Rare SOMA Grand Penthouse
SOLD! Modern Glen Park with Views

BAY AREA MARKET REPORTS



From: David Full <davidjohnfull@gmail.com>
Sent: Sunday, February 12, 2023 12:52 PM
To: CPC.Stonestown
Cc: EngardioStaff (BOS); MelgarStaff (BOS)
Subject: Comments on the Stonestown Draft EIR

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Ms. Craciun,

I-Full-1 Thank you for the opportunity to review the Stonestown Development Project EIR. Provided below are my comments on the EIR. I have organized the comments by page number to assist in understanding my comments and concerns. In general, the EIR is internally inconsistent, confusing, and lacking in critical analysis needed to determine the impacts of the proposed project. It is unfortunate that a much-needed housing project in the City and County of San Francisco did not garner more attention and care in preparing the EIR.

I-Full-2 General. Comments on the scope of the EIR were provided (see Appendix A). However, many of the comments were not addressed in the EIR and, in some cases, completely ignored. Why does the City and County of San Francisco offer the opportunity to provide scoping comments and then not acknowledge them or explain how those comments have been incorporated into the EIR? Merely printing the scoping comments may meet the requirements under the California Environmental Quality Act (CEQA), but it certainly is not within the spirit of engaging with the public regarding environmental concerns. The EIR fails to provide any information regarding how these comments were addressed.

I-Full-3 Page 2-5, Figure 2-2. This figure showing the Project Site and Adjacent Land Uses is the same that was provided during the scoping process. I commented on that figure at the time and pointed out numerous errors in the figure. It was not updated or corrected. It is difficult to have confidence in the CEQA process when comments are not addressed and basic errors are not corrected.

Page 2-7, Section 2.D. The characterization of the northeast portion of Buckingham Way is misleading. This portion of Buckingham Way is not being “straightened”. This portion of Buckingham Way is being abandoned and a new street is being created. Characterizing it is a street being “straightened” is misleading.

Page 2-15, Figure 2-7. The legend includes something called “CEQA Heights”. However, this term is not defined. Without such information, how is it possible to understand the importance of this term and what the blue line means?

Page 2-18, Section 2.D.6. The text indicates the proposed project would provide 2,940 vehicle parking spaces embedded within the proposed building podiums and/or below grade (or 3,140 parking spaces with the variant). However, this information is not consistent with Table 2-1 on page 2-12. How can environmental analysis be completed when inconsistent information is provided?

Page 2-20, Section 2.D.8. The EIR continues to indicate that secondary access to the project site is at Eucalyptus Drive and 20th Avenue. However, data provided in Appendix D.1 shows that traffic

I-Full-3 (cont.) volumes at the intersection of Buckingham Way and Winston Drive are actually greater than at Eucalyptus Drive and 20th Avenue. Characterizing the intersection of Eucalyptus Drive and 20th Avenue as the secondary access point is misleading.

Page 2-20, Section 2.D.8, bullet #1. The text indicates that 20th Avenue would have two travel lanes (one lane in each direction) between Eucalyptus and Winston Drives. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction. Which is it? What was used in the travel analysis and trip generation?

I-Full-4 Page 2-23, Figure 2-13. This figure shows a traffic signal at the intersection of Eucalyptus Drive and 20th Avenue. Was a traffic signal warrant study conducted for this intersection to determine that a traffic signal is needed? Where is the result of that study in the EIR? Also, the intersection of Buckingham Way and Winston Drive is proposed to continue to be a stop-sign-controlled intersection. Given that the traffic volumes at this intersection are similar (as presented in Appendix D.1), why does this intersection not need a traffic signal?

I-Full-5 Page 2-24, Figure 2-14. This figure shows that 20th Avenue would have two travel lanes in the southbound direction and one travel lane in the northbound direction. This is not consistent with Figure 2-12 on page 2-22, which shows this segment of 20th Avenue as having two travel lanes in each direction, or with the text presented on page 2-20.

Section 2.D.8, bullet #1 (see comment above). Given that this segment of 20th Avenue leads to the "secondary access point" for the proposed project, why is there such contradictory information provided in the EIR. It simply is not possible to understand what is being proposed and what is being analyzed in the EIR when such inconsistencies are presented in the EIR.

Page 2-28, bullet #1. The description on the number of travel lanes on Buckingham Way between 20th Avenue and Winston Drive is not consistent with Figure 2-12 on page 2-22 or Figure 2-18 on page 2-29.

Page 2-28, bullet #2. The description of Street A is misleading in indicating that it "straightens" Buckingham Way. This is a new street and should be described as a new street in the EIR.

Page 2-28, paragraph 2. This paragraph indicates that there will be a traffic signal at Buckingham Way and Winston Drive. However, Figure 2-13 on page 2-23 indicates that this will be a stop-sign-controlled intersection. Which is it? What was assumed when doing the traffic analysis in the EIR?

I-Full-6 Page 2-34, Figure 2-22. An explanation is needed for how bicyclists will be safe when transitioning from one-way bikeway each of 20th Avenue on Winston Drive to a two-way bikeway west of 20th Avenue on Winston Drive. Will there be a separate traffic signal cycle for bicyclists traveling westbound through the intersection? Given the Safe Streets initiative in the City of San Francisco, this needs to be addressed. In a similar fashion explain the same transition at the intersection of 20th Avenue and Eucalyptus Drive and at the intersection of Buckingham Way and Winston Drive.

I-Full-7 Pages 2-35 through 2-39, Figures 2-23 through 2-26. Each of these figures mislabels 20th Avenue north of Buckingham Way.

I-Full-8 Page 2-40, Section 2.D.10. Why is the sustainability plan not available for review? Could there be any impacts associated with the implementation of the sustainability plan? Without providing any information regarding the sustainability plan, it is not possible to provide any comments regarding potential impacts resulting from the implementation of the sustainability plan.

I-Full-9 Page 2-40, Table 2-3. This table does not provide any information on the construction of roadway improvements. This table only describes the construction schedule for buildings. Given that roadway and intersection improvements are an integral part of the proposed project, this information needs to be provided.

Page 2-40, Section 2.E.1, paragraph 2. This paragraph basically states that construction can occur any time, day or night. There needs to be some assurance as to when construction will occur.

I-Full-10 Page 2-42, Section 2.E.2. This section does not describe where excavated materials will be transported. Does the air quality analysis include the emissions associated with the use of trucks to transport this material? Without a destination of where excavated materials will be transported, how can the air quality analysis be considered complete?

I-Full-11 Page 2-42, Section 2.E.3. This section does not provide any information regarding a construction traffic plan. Will construction vehicles be restricted to certain streets? What guarantee is there that construction trucks will not use residential streets to access the project site? A construction traffic plan needs to be provided for that purpose.

I-Full-12 Page 3-7, Table 3-1, Key No. 2, paragraph 2. The first sentence is not complete. It is not possible to understand the full scope of the Parkmerced project based on the information provided in this table.

I-Full-13 Page 3.A-9, Section 3.A.3, paragraph 1. It is news to residents in the vicinity of Stonestown that the project site is in the Lakeshore area of San Francisco. This is basic information and does not lead to confidence in the quality of the EIR.

Page 3.A-9, Section 3.A.3, paragraph 2. There is a description of the single-family homes east of the project site and an indication that they are Category B properties. Why is there no similar description of the single-family homes of Merced Manor, immediately north of the project site. This neighborhood was developed in the 1930s and has greater potential for being considered historic than the neighborhood east of 19th Avenue that was developed in the 1930s. This is a major oversight in the EIR and an analysis of the Merced Manor neighborhood and the impacts to the historic character of the neighborhood needs to be addressed in the EIR.

Page 3.A-15, paragraph 3. Something is not quite right with the first sentence. How can the building function as a twin theater from 1970 through 2020 and also acknowledge that the single auditorium was bisected in 1973?

I-Full-14 Page 3.A-22, Mitigation Measure M-CR-1. Why is there not the possibility of incorporating the façade of the theater into a building to be developed on the project site? Could this minimize the impact associated with the impairment of the architectural resource? This should be considered as a measure for mitigating this impact to a historic resource.

I-Full-15 Page 3.A-24, Impact CR-2. This impact analysis is not complete. Given that the EIR does not recognize the potential for Merced Manor to be a neighborhood with historic and architectural resources, this analysis is not complete. The EIR needs to include such an analysis.

I-Full-16 Page 3.B-1, Section 3.B.2, paragraph 2. The statement that there is an "unlikelihood of the project or variant to result in significant transportation and circulation impacts in those areas" is not supported by any evidence. This statement is arbitrary and baseless without any information to back it up.

Page 3.B-2, Figure 3.B-1. Why were the intersections of 20th Avenue and Ocean Avenue and 20th Avenue and Sloat Boulevard not included as a study intersection. The EIR indicates that 20th Avenue

I-Full-16 (cont.) and Eucalyptus Drive is a "secondary access" to the project site yet the intersections immediately north of this "secondary access" are not included as study intersections and other intersections much farther removed from the project site included (e.g., Ocean Avenue and Ashton Avenue). This is a major flaw in the approach to analyzing traffic impacts.

I-Full-17 Page 3.B-4, Table 3.B-1. In this table, the Better Streets Plan Classification for 20th Avenue is listed as N/A. In a short search on-line, it is evident that 20th Avenue north of Eucalyptus Drive is a "Neighborhood Residential" street. The EIR incorrectly considers 20th Avenue only as a street within the project site. This street also exists between Eucalyptus Drive and Sloat Boulevard and no effort has been made in the EIR to properly characterize this street. For example, this table indicates that MUNI route 57 travels on 20th Avenue. It does, but only as far north as Eucalyptus Drive. The EIR needs to make a distinction between the 20th Avenue on the project site and the 20th Avenue north of Eucalyptus Drive. This designation as a "Neighborhood Residential" street is important when considering the impacts of the proposed project.

I-Full-18 Page 3.B-5, Table 3.B-2. What is the point of this table? Why were only some intersections included in this table? Without additional information, such as the level of service (LOS) at these intersections, this information is useless.

Page 3.B-18, paragraph 2. While it is true that the CEQA Guidelines were amended to remove automobile delay as a measure to determine a project's significance, it does prohibit the EIR from disclosing that information. In fact, this information was requested as part of the scoping process and repeated during attendance at a public meeting prior to the release of the Draft EIR. At that public meeting, this commenter was assured that such an analysis would be included in the EIR. Alas, that is not true. No such analysis has been provided. It is puzzling why information regarding traffic counts are provided (see Appendix D.1) but there is nothing in that appendix that provides any context for what these changes in traffic volumes mean. Why was such information provided in such an incomplete state? My biggest concern has been the effects of the project on 20th Avenue between Eucalyptus Drive and Sloat Boulevard. In personal meetings with a Brookfield Properties representative and at public meetings, I had been assured that these concerns would be addressed. Unfortunately, these concerns have not been addressed at all.

I-Full-19 Page 3.B-30, paragraph 4. The text indicates that a Sunday peak period was chosen based on "the size and type of land uses proposed by the project, as well as travel characteristics of the study area". As a resident in the vicinity of Stonestown, Saturday traffic volumes in the neighborhood appear to be greater than that on Sunday. Unfortunately, the EIR does not provide any specific rationale for choosing Sunday over Saturday. A comparison of traffic volumes on those days should be provided.

Page 3.B-36, Table 3.B-11. The text on the preceding page does not provide any details as to how the percent reduction in vehicle trips due to internal trip capture was calculated. There is no information to verify the assumptions that were made for this internal trip capture. This information needs to be provided in the EIR.

I-Full-20 Page 3.B-55. Mitigation Measure M-TR-1. This mitigation measure needs to be expanded to require the construction coordination plan to designate routes to be used by construction vehicles accessing the project site. This plan needs to guarantee that construction truck traffic would not use residential streets in the vicinity of the project site.

I-Full-21 Page 3.B-57, Impact TR-2. As stated in the comments on page 2-34, there is no analysis of the impacts associated with bicyclists needing to weave through intersections and the impact on the

I-Full-21 (cont.) safety of bicyclists as a result of the location of the bike lanes. This analysis needs to be included in the EIR.

I-Full-22 Page 3.B-59, paragraph 2. The EIR indicates that traffic queues on Eucalyptus Drive approaching 19th Avenue could extend back to 20th Avenue. However, there is no indication that any analysis was done to address vehicles that would choose NOT to turn right (eastbound) on Eucalyptus Drive from northbound 20th Avenue. Appendix D.1 indicates that the number of vehicles turning right would be 471 during the p.m. peak hour (or about 8 vehicles per minute). Given the traffic signal timing at the intersection of 19th Avenue and Eucalyptus Drive and the capacity of the roadway, this queue would occur for every traffic signal cycle. Thus, there is the potential for drivers to choose to travel northbound on 20th Avenue toward Ocean Avenue and Sloat Boulevard. No analysis of the ability for eastbound vehicles to queue at either 19th Avenue and Ocean Avenue or at 19th Avenue and Sloat Boulevard has been presented. Given the 20 percent in traffic volumes on 20th Avenue north of Eucalyptus Drive, this analysis should be presented in the EIR. In addition, this increase of 20 percent is on a neighborhood residential street. In accordance with the Better Streets Plan, a "*Neighborhood Residential streets are quieter residential streets with relatively low traffic volumes and speeds. Though they have low levels of activity relative to other street types, they plan a key role to support the social life of a neighborhood.*" An analysis of the impacts to this residential street need to be included in the EIR and mitigation measures to preserve the character of a neighborhood residential street need to be identified and provided.

I-Full-23 Page 3.B-65, MUNI Transit Service, paragraph 2. The 28R MUNI route has been suspended and should not be included in the transit analysis. In addition, Table 3-B-15 on page 3.B-66 and Table 3.B-19 on page 3.B-80 need to be revised to not include the 28R route to determine impacts associated with transit delay. The EIR preparers should search for "28R" and modify the analysis throughout the EIR.

I-Full-24 Page 3.B-70, Induced Automobile Travel, paragraph 2. The statement that the "features fit within the general types of project that would not substantially induce automobile travel" is not supported by any evidence. This project includes all sorts of development that WOULD induce automobile travel. Much more evidence is needed to back up this statement because the traffic volumes presented in Appendix D.1 show that there would be an increase in traffic as a result of the proposed project. That is the very definition of "induced automobile travel". As a result, there is no way to conclude that the project would NOT significantly increase traffic on local streets. This is a major flaw in the EIR.

I-Full-25 Page 3.C-14, Construction Noise, paragraph 2. The text in this paragraph is not consistent with the information on Page 2-40, Section 2.E.1, paragraph 2, which states that construction could occur at any time. The EIR should identify when construction is to occur and to limit construction only to daytime hours.

Page 3.C-21, Daytime Construction Noise, paragraph 2 and Table 3.C-11 on page 3.C-22. The significance standard for construction noise impacts is 80 dBA at 100 feet. Stating that the use of the concrete saw is of "limited duration" is misleading by trying to downplay the fact that it is significant. The "limited duration" statement is irrelevant to the analysis. The concrete saw exceeds the 80 dBA at 100 feet and is, therefore, significant. Stating anything else or qualifying it should not be included in the EIR.

Page 3.C-25, Table 3.C-22. The heading of the sixth column in this table states "Exceed 90 dBA Daytime Standard?" Where did this 90 dBA standard come from? The text on page 3.C-18 indicates

I-Full-25 (cont.) that the threshold is 80 dBA. Which is correct? If it is 80 dBA, then many of the "no" on this table need to be changed to "yes".

I-Full-26 Page 3.C-31, Mitigation Measure M-NO-1, paragraph 1. This is similar to the previous comment. Where did the 90 dBA standard come from? Why does the mitigation measure not require meeting the 80 dBA standard identified on page 3.C-18? This 90 dBA reference also is presented on page 3.C-32.

Page 3.C-31, Mitigation Measure M-NO-1, paragraph 2. Prohibiting nighttime noise should be considered as a way to reduce sleep disturbance for residents in the vicinity of the project site. In addition, can the mitigation measure have financial penalties for exceeding noise levels? There needs to be a real consequence associated with disruptive noise events.

I-Full-27 Page 3.C-33, Nighttime Construction, paragraph 4. The last sentence of this paragraph is meaningless. This states that some City employee can decide to grant permission to do nighttime construction at any time. This does not provide residents who may be affected by construction noise with any real remedy and actually creates greater uncertainty regarding the noise that will occur during construction. Given that construction is scheduled to occur over a seven-year period, it is not unreasonable to provide some better assurances as to when nighttime construction will occur. As written, there is no real mitigation associated with construction noise at nighttime hours. The EIR needs to address this issue.

Page 3.C-35, Impact NO-2. This analysis is inconsistent with other statements made in the EIR. The impact statement is related to an "increase in ambient noise levels along access streets in the project vicinity". Table 3.C-19 on the same page provides roadway noise levels associated with construction truck and worker traffic. The issue is that throughout the rest of the EIR, the intersection of 20th Avenue and Eucalyptus Drive is identified as a "secondary access" to the project site. Yet, no analysis is provided for that access point. Unless there is a guarantee that this intersection will NOT be used for construction truck traffic or worker traffic, this analysis should be included. Or, a statement that this intersection will not be used needs to be included in the EIR. This is a major flaw of the EIR.

I-Full-28 Page 3.D-13, paragraph 2. This paragraph identifies the "sensitive receptors" near the project site. Why were the residential land uses west of the project site (i.e., the multi-story buildings along Buckingham Way and Winston Drive) not included? These are directly adjacent to the project site and should be considered "sensitive receptors". The analysis should be revised to include these land uses as "sensitive receptors".

Page 3.D-13, paragraph 3. The last sentence of this paragraph indicates that "a small portion of the project site that borders 19th Avenue does meet the APEZ criteria" but does not actually indicate where this small portion is actually located. Figure 3D.-1 on page 3.D-14 does not provide any information in this regard.

Page 3.D-14, Figure 3.D-1. Why is this land use map so different from the one presented in Figure 2-2 on page 2-5? There are literally dozens of differences between these two land use maps and leads the reader to wonder which is correct. This lack of consistency in the EIR is most troubling because it is not possible to clearly understand the analysis when basic information is not reliable.

Page 3.D-14, Figure 3.D-1. Although this land use map actually acknowledges commercial uses along Ocean Avenue (compare with Figure 2-2 on page 2-5), there are still a variety of land uses that are not correct on this figure. For example, what is the "commercial" land use on 21st Avenue? What is meant by the "residential-mixed use" designation? This is not explained in the EIR. I, for one, can

I-Full-28 (cont.) assure you that my residence on 20th Avenue, which is designated as "residential-mixed use" on Figure 3.D-1 is a single-family home with no other land uses associated with it. Given the number of such parcels identified on this figure as "residential-mixed use" within residential neighborhoods, it undermines any confidence that the preparers of the EIR did their due diligence in preparing the document.

I-Full-29 Page 4-5, Section 4.D. It is difficult to understand why the EIR preparers chose to identify so many "potential areas of controversy and unresolved issues". Is it not the intent of the EIR to actually analyze the impacts of the project? For example, the third bullet identifies "project and cumulative impacts on traffic congestion and parking". This should not be an "unresolved issue". This very topic was included in scoping comments as being requested to be analyzed and included in the EIR. However, no such analysis was conducted. The only reason this is an "unresolved issue" is because the EIR preparers chose not to conduct the analysis. In reviewing Appendix D, all of the information is available regarding the number of vehicle trips through 28 intersections in the vicinity of the project site. Providing information regarding the level of service (LOS) at these intersections could have been provided, but was not. Many of the other topics on this list were either focused out of the EIR in the Notice of Preparation or have been analyzed in the EIR. Why are these on this list?

I-Full-30 Page 5-26, Section 5.C.3. Why does this alternative include two very different aspects of the proposed project? The partial preservation of the theater mitigates very different impacts than the relocation of parking. Putting them in one alternative does not make sense and undermines the intent behind the alternatives process.

I-Full-31 Page 5-28, paragraph 1. The second reason for this alternative is to "redistribute project-generated vehicle trips away from intersections where substantial vehicle delay occurs (on 19th Avenue and 20th Avenue)". This is curious because nowhere in the EIR does it acknowledge that there would be "substantial vehicle delay" on either roadway. Where is this analysis? What is the "substantial delay"? How can an alternative be based on information that has not been provided in the EIR?

Page 5-30, Table 5-3. There is a major mathematical error in this table. The net change in vehicle trips is 27, not 275 as stated in the table. In addition, without information regarding the level of service (LOS) of intersections on 19th Avenue and 20th Avenue, how is the reduction of 2.2% in vehicle trips meaningful? Without the background information on existing and future LOS, it is not possible to understand what this alternative would accomplish.

Page 5-31, Emergency Access Impacts. Paragraph 2 and Table 5-4 focuses on the intersection of Buckingham Way and Winston Drive. In the traffic analysis, the queue lengths on Eucalyptus Drive between 20th Avenue and 19th Avenue was considered to be an impact. Why was this intersection not included?

I-Full-32 Page 5-65, Table 5-12. The CEQA significance determination notes on the table identify "LSM" as less than significant with mitigation. The table actually uses the acronym LTSM. Is the reader to conclude that these are the same?

Thank you.

Dave Full
Merced Manor Resident

From: Karen Lam <kylam88@yahoo.com>
Sent: Friday, February 10, 2023 7:57 PM
To: CPC.Stonestown
Subject: Merced Manor and Lakeshore neighbors

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Florentina Craciun:

I-Gardner-1 I would like to voice my opinion regarding the Stonestown developers plan to build a 90 foot tall residential tower near Stonestone mall directly next to Rolph Nicol Park. This was not communicated to the Lakeshore community and I do not agree with this development. This was originally a 4 story building and that was what we were told and approved. You have my vote "NO" on this 90 foot tall residential tower.

Thank you for listening,
Karen Gardner
Lakeshore resident

Aaron Goodman
25 Lisbon St. SF, CA 94112
E: amgodman@yahoo.com

January 11, 2023

RE: Stonestown EIR (Written Comments)

Florentina Cracium (Senior Environmental Planner - SF Environmental Planning Division)
CPC.Stonestown@sfgov.org (emailed copy of comments)

I have been involved as an architect and urban planner, in the westside redevelopment issues for some time, providing comments and attending meetings on the 19th Ave SFMTA Transit Long Range Proposal for the M-Line undergrounding and options, the Parkmerced Masterplan, SFSU-CSU Masterplan, and Balboa Reservoir Projects.

I-Goodman-1

I attended the initial Stonestown proposal meetings and submitted comments in person on the need to look carefully at the transit options and alternatives to properly link and loop transit lines into and around the 3 major projects on the west side.

I also suggested and submitted some simple pencil sketches on an alternative for the M-Line and L-Taraval to be linked via SLOAT Blvd and the 20th Street being the connection point vs. the undergrounding of the M-Line through the Ocean Ave neighborhood and residential areas.

The suggestion was to help quicken the transit changes which have so far been negligent on all redevelopment projects since their inception.

The L-Taraval if linked back up Sloat deals with the loss of the ocean highway area and the need to bring the train line up to sunset blvd or loop the L-Taraval up sloat and to a "T" intersection where the undergrounding could begin off of 19th Ave and on the broader sloat blvd area. The existing pumpkin patch site and Stern Grove music festival and outsidelands music festival could all benefit from the entry to stern grove and a mixed use redevelopment for access to the underground station at the pumpkin patch and run the train on 20th south into Stonestowns redevelopment area.

We had suggested the need to look at the YMCA (existing main facility) and the YMCA Annex and pet-co site as where the train would turn up along the existing ramp for cars exists, and bring it up level and alongside 19th Ave on the west side of the street across from Mercy HS. This could also become a new urban plaza with additional density and office space on both sides of the existing parking lot for the fitness sports center, and possible reworking of the church buildings as noted as possible future redevelopment sites.

There is a need to look comprehensively at ALL 3 projects and the lacking movement on the M-Line undergrounding or at or above grade. Using topography there is significant changes out to the Daly City BART station, and providing the direct linkage to Daly City BART is a key component of ANY mall

I-Goodman-1 (cont.)

redevelopment. The fact that Parkmerced and SFSU both ignored this entirely only making it a gesture with the SFMTA calling it Tier-5 future connections ignores the upfront need to get people out of there cars and onto the main transit linkages.

When this project and the other projects are in construction or moving forward, trucks, deliveries, and work crews will be at ALL sites, and it would be preferable to have access via public transportation already implemented vs lagging severely in changes and implementation.

We had discussed this also prior with Peter Albert who worked with the SFMTA on transit issues on the other initial projects.

The stonestown proposal cannot be expected to fix all the transit issues, but Parkmerced and SFSU also ignored the lacking MOU's an push and need to get a transit plan in place and moving forward. Due to the SFMTA being overly invested downtown they have missed a great opportunity to increase the linkages and equitable investment in transit on the westside of San Francisco.

The delays getting downtown and to other districts or future lines like the Geary system or future subway, and the presidio via sunset blvd indicates a lacking equitable policy on transit solutions across the board as a network system.

I-Goodman-2

I would like to see increased height of many of the proposed buildings along 19th Ave. possibly forming a better plaza across from mercy high school with the change in topography and inclusion of a plaza and transit entry point vs. just a big parking lot.

I-Goodman-3

The lack of traffic and transit coordination is highlighted by the turn at the Target, and Trader Joe's from Winston and the problems with timing and dangerous turning at this location, and the impacts of traffic flows from the sunset and 19th ave into and around the stonestown mall during school and work hours.

The other issue is the lack of forthright communication on the 1952 Interchange at Brotherhood Way, the Alemany "fly-over" that connects to Daly City and south I-280 and the need to look at the Junniperro Serra intersection interchange out to daly city BART as a new entrance into SF and redevelopment project that addresses lacking transit connectivity, air-rights and redevelopment of Caltrans and BART property, and looks at including Daly City and there mall and office block tower area towards parkmerced and possibly plinthing over the freeway to improved pedestrian and housing options nearby. The Tier-5 level connection issues that are needed for federal funding and linkages and address of the older overpass clover-leaf and over-pass flyway is important as an egress route from the city, and infrastructure that is much older and needed to be changed and improved due to the pressures of redevelopment.

The cambon supermarket site also may cause a need for a station stop for muni at or above if it is redeveloped as a senior center and housing towers per John Jweinat's proposal, so the need to discuss the transit issues becomes a priority when you see the domino effect of redevelopment and lacking progress on the M-line or future extension to Daly City BART not even in initial planning for the M-Line or linkages to other bi-county transit hubs.

I-Goodman-4 The stonestown theater is I believe a great façade and front that should be re-utilized in any future plaza or housing concept. The back theater portion may be torn down and a new building attached on the back side, of the theater. The need for a central community space, digital zone for school kids from Lowell who often hang at the mall, and the new housing could be a wonderful pop-concept for the front of the theater with some space for seating and protected shelter areas for youth and entertainment for them after school including a green-scaped area, and food services that promote better after hours public spaces and lighting alongside treescapes and a revitalized theater entry zone. This could also serve after hours community organizations and meetings if designed as a community hub. I strongly support the preservation of the front portion of the stonestown theater into a more positive public/private area that is available and useable by youth and seniors in the community.

I-Goodman-5 I will attached any prior documents I have sent under separate email to be included in the comments for the EIR deadline for written comments.

Thank you for your time and consideration in the review of the SFMTA plans and the need to push all three developers to the table for a more robust and serious conversation on the transit changes that can help people get to the mall without a car, and connect other districts to the mall area.

Regards

Aaron Goodman

From: Donald Hardeman <dhardeman@hannabrophy.com>
Sent: Tuesday, February 7, 2023 3:30 PM
To: CPC.Stonestown
Cc: Donald Hardeman
Subject: COMMENT ON THE ADEQUACY OF THE DRAFT EIR FOR THE STONESTOWN DEVELOPMENT PROJECT AND OPPOSITION TO THE PROPOSED 90 FOOT RESIDENTIAL TOWER NEXT TO ROLPH NICOL PARK
Attachments: Rolph Nicol Park.jpg; Looking southwest from Rolph Nicol Park to the spot of the proposed 90 foot tower.jpg; Photograph of the open space to the west of the Fenceline, not addressed by the EIR.jpg; Looking south from 25th Ave. and Eucalyptus Street toward the spot of the proposed project, with the fate of the trees to the right uknown.jpg

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Hardeman-1

1) OPPOSITION TO THE CONSTRUCTION OF A 90 FOOT RESIDENTIAL TOWER ADJACENT TO ROLPH NICOL PARK

* For years, Brookfield Properties represented to the neighborhood that the building in the northwest corner of the existing parking lot, directly adjacent to Rolph Nicol park, would be 4 floors. Yet the draft EIR now indicate plans to build a 90 foot tower.

I-Hardeman-2

* A small neighborhood park, Rolph Nicol is used daily by people in the neighborhood to walk their dogs, congregate, chat, and to enjoy a respite from the 3,500 students and their vehicles that inundate the neighborhood daily to attend school (see below). A tower situated immediately adjacent to the park, rising above the tree line, would permanently alter this sanctuary forever. The EIR acknowledges that the building would create shadows on the park

I-Hardeman-3

- The park and the adjoining open space includes an ecosystem for many species of birds, including songbirds, hawks, owls, and crows, as well as a pack of coyotes. The EIR does NOT address the impact of the project on this ecosystem.

I-Hardeman-4

- The neighborhoods immediately impacted by the project, Merced Manor and Lakeshore, consists of single story single homes. A 90 foot tower 300 feet from Eucalyptus Avenue would scar the skyline, rise above the trees in park and dominate the view for blocks. This is NOT the 19th avenue corridor--

I-Hardeman-4 (cont.)

-this is next to a small neighborhood park! The proximity of the proposed 90 foot high residential building will dramatically and irreversibly adversely affect our small park, creating a monolith looming over what has always been a haven of nature and quiet.

I-Hardeman-5

- Reduction of the proposed building height to 40 feet, which the developer represented for years to the neighborhood, is a much better fit for the area, and would have much less of a negative impact on the park.

- Paragraph 4 of the EIR claims that the goal of the plan is to prioritize residential uses in northwest corner of the project site near Rolph Nicol Jr. open space " to provide complementary uses paired with more greenery and community serving uses, and to strengthen connections to nature and to the existing surrounding residential neighborhood of Merced Manor." In reality, the proposed 90 foot building will have the opposite effect; it will harm the open space and create a disconnect from Merced Manor. The originally proposed 40 foot building conforms with the neighborhood and will significantly reduce the impact on the park.

- Revision to the originally proposed 40 foot height for this particular building would have an insignificant impact on the total housing that will be built with this massive project, while the benefit to the park and the people who use it daily would be incredibly significant.

I-Hardeman-6

2) THE EIR DOES NOT ADDRESS THE INTENTIONS OF THE DEVELOPER WITH RESPECT TO THE OPEN SPACE TO THE WEST OF THE FENCE LINE

This open space, which extends from Winston Drive to Rolph Nicol park, serves as a continuation of the biodiversity and animal habitat of the park. How many trees will be cut down by the private developer? What is the impact of the development on this space? The EIR Is silent, and therefore inadequate.

I-Hardeman-7

3) THE TRAFFIC STUDY IS INADEQUATE

Lowell high school has the largest enrollment of any school in the SFUSD, and is directly adjacent to the proposed tower. As indicated, each school day our neighborhood is inundated with over 3,500 students, primarily using Eucalyptus Ave (2,786 students at Lowell High School, 466 students at Lakeshore Elementary, and 306 students at St. Stephens). The vehicle traffic creates gridlock on Eucalyptus Ave from 22nd avenue to Middlefield Ave, and the streets running perpendicular to Eucalyptus, particularly 24th, 25th 26th, Inverness and

I-Hardeman-7 (cont.)

Forest View Avenues. Yet, the traffic study not only downplayed the vehicle traffic, it also stopped at 25th Avenue. While the project itself ends parallel to 25th Ave, the effect of the project extends well to the west. The EIR does not adequately address the increased traffic in the area which as noted, is already at gridlock twice a day.

I-Hardeman-8

To summarize, a 90-foot building built by a PRIVATE developer to MAXIMIZE PROFITS AT THE EXPENSE OF THE ENJOYMENT OF OUR PUBLIC PARK SHOULD NOT BE ALLOWED. It will forever alter the use and enjoyment of our park.

Respectfully submitted,

Don Hardeman

Don Hardeman
3065 26th Ave
San Francisco, CA 94132

Project Title: Stonestown Project
Case No: 2021-012028ENV
Date: January 14, 2023
Attn: Florentina Craciun, EIR Coordinator
Email: CPC.Stonestown@sfgov.org

Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

From: James P. Herlihy
160 Broadmoor Drive, San Francisco, CA 94132
Member, Lakeside Property Owners Association

I-Herlihy1-1 1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

I-Herlihy1-2 2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.

I-Herlihy1-3 3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6

I-Herlihy1-4 4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3

I-Herlihy1-5 5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5

I-Herlihy1-6 6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1

I-Herlihy1-7 7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13

I-Herlihy1-8 8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of

I-Herlihy1-8 (cont.)

unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

I-Herlihy1-9

9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17

I-Herlihy1-10

10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.

I-Herlihy1-11

11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4

I-Herlihy1-12

12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2

I-Herlihy1-13

13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore.

Project Title: Stonestown Project
Case No: 2021-01202BENV
Date: February 8, 2023
Attn: Florentina Craciun, EIR Coordinator
Email: CPC.Stonestown@sfgov.org

Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

From: James P. Herlihy
160 Broadmoor Drive, San Francisco, CA 94132
Member Lakeside PropertyOwners Association

I-Herlihy2-1 CEQA Guidelines section 15126.6(a) states that an EIR must describe and evaluate a reasonable range of alternatives to a project that would feasibly attain most of the project's basic objectives or substantially lessen any identified significant adverse environmental effects on the project. This draft EIR fails to meet that standard and should be rejected by the San Francisco Planning Commission.

Table 5-1 outlines alternatives B, C, D. E which range from 2890 dwelling units to 1758 dwelling units. Assuming 2 person occupancy per unit that would result in 5600 residents on the high side to 3500 residents on the low side on the Stonestown property where there are no residents today. Unavoidable negative impacts are noted in the draft on transit, traffic, emergency services and infrastructure (Sewer, water etc).

No consideration is given to an Alternative of several hundred dwelling units with a lower population density and less burdensome on traffic, transit, emergency services and infrastructure.Such an Alternative would be more compatible with the existing adjacent neighborhoods of Lakeside, Merced Manor, Lakeshore and Ingleside Terraces to provide additional housing to San Franciscans.

I-Herlihy2-2 The proposed 18 story, 200 room hotel is inconsistent with the proposed mixed use residential and commercial nature of the project and should be eliminated from the project. San Francisco has an oversupply of hotel rooms as it is.

I-Herlihy2-3 Table 5-1 Alternatives B,C,D,E show site maps of a towering wall of apartments on 19th Avenue stretching 0.25 miles on the West side of 19th Avenue from Eucalyptus Drive to Buckingham Way. The DEIR is silent on the environmental impact of this significant "Western Wall" on 19th Avenue.

I-Herlihy2-4 I urge the San Francisco Planning Commision to reject the DEIR.

From: Debbie Herzfeld <debsellssf@yahoo.com>
Sent: Thursday, February 9, 2023 8:36 AM
To: CPC.Stonestown
Subject: Opposed to plan

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Herzfeld-1 This plan is absurd. The impact on our neighborhood for noise construction parking cars and so many new redid we Mrs will not only negatively impact our quiet enjoyment of our homes but traffic and ability to transport from one part if the city to another. This is the suburban side if SF. Do not turn it j to another

I-Herzfeld-2 downtown. Stop this ridiculous project if at least scale it way back. Do your residence building on the back side of Stonestown not along 19 th Ave.

Debbie Herzfeld

Sent from my iPhone

Project title: Stonestown Redevelopment
Case #: 2021-012028ENV
ATTN: FLORENTINA CRACIUN, EIR Coordinator

Subject: Environmental Impact on Sonestown Development Project

From: Hyesoon Ho
Owner of 1400 Holloway Ave. San Francisco, CA 94132

I-Ho-1 I just wanted to notify my concern on the Sonestown Redevelopment Project. The size of the project is too large for the existing infrastructure. There is always heavy traffic from

I-Ho-2 Holloway Ave. to Sloat Blvd on 19th Ave. Without any added underground public transportations, the traffic would get much worse and the Air quality would go down dramatically by increased traffics.

I oppose the Project.

From: Dennis Hong
To: Craciun, Florentina (CPC); Hillis, Rich (CPC); CPC-Commissions Secretary; Race, Patrick (CPC)
Cc: MelgarStaff (BOS); Breed, Mayor London (MYR); Reuel Cooke; CPC.Stonestown
Subject: DEIR Case 2021-012028ENV - ADEQUACY - Stonestown Mall
Date: Monday, February 6, 2023 1:18:48 PM

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear SF Planning Commission and everyone,

Per the request of the SFPC for February 2/9, 2023 meeting/s. I have been reviewing the current DEIR of December 14, 2022 and feel at this time it meets and fills the definition/requirement under **adequacy**. I'm sorry I will not be able to be at your meeting but will do my best with your remote system. Please use my email here along with the projects DEIR - with my full support, that my email here has been received and will be part of the RTC when ready..

#10. 2021-012028ENV (F. CRACIUN: (628) 652-7510) 3251 20TH AVENUE – Public Comment on the adequacy of the Environmental Impact Report for the Stonestown Development project. The proposed project would redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multiphase, mixed-use residential and retail community. Under the proposed project,

I-Hong-1 Thank you for the opportunity to comment and support this Wonderful Project - the Stonestown Development project. I have been commenting on this Project's DEIR etc since February 4, 2021 both with the sponsors/workshops and the SF Planning Department. I'm a San Francisco native with 78+ years. I currently live in District 7 as a resident and home owner. I have been shopping here since the early 60's when it was an open mall. Currently, it is still a very unique mall, professionally maintained with many special and unique shops Which in my opinion shows the credibility of the sponsors ability to maintain such a project. Because I use public transportation since I ditched my car it still meets and exceeds my shopping requirements. With the exception for the fog (Karl), the plan professionally address everything a mall should be including the additional 2,930 residential units on the west side of the city. Which will add to the "SF Housing Element Plan".

At this time I would like your support and approval for this phase. And to include my comments to the RTC phase.

OK, on to the next phase, my comments to the DEIR for the RTC due by February 13, 2023.

If anyone has any comments to my opinion/Email here please feel free to let me know.

A lot of the success to this project todate is due to the continued onsite work shops and the community out reach done to date.

The following is a cut/paste for this agenda item for 2/9/2023:

10. 2021-012028ENV (F. CRACIUN: (628) 652-7510) 3251 20TH AVENUE – Public Comment on the adequacy of the Environmental Impact Report for the Stonestown Development project. The proposed project would redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multiphase, mixed-use residential and retail community.

I-Hong-2 After reviewing the document and as a shopper since the mid 1960's and ditching my car, I would like to entertain and see if Muni/MTA could make the "M" some how make the stop at 19th and Winston a bit safer, i.e. run under ground in to the mall. Currently I believe there are plans to upgrade the 19th route. Currently there are several muni stops in the mall itself but are from the West Portal station and not from downtown via the tunnel. But lets save this for the RTC phase.

I-Hong-3 I also believe that this projects number of housing units will certainly help the SF Housing Element pan out nicely. I would also like to encourage that that project be expedited both in the process and the permit process as allowed.

In closing if anyone haves and comments or questions to my rambling email here please reach out to my email with your thoughts.

All the best,
Dennis

Ihave bith been comeemnthing on this Project, DEIR etc sine June ____ and I fully support it bith with the current Adecary and the deir. Per cut and paste below:

Thank you all for letting me comment here. I'm a Native San Francisco. A property owner and currently live in District 7. I have been shopping since the mid 1960's when it was an open mall and still shop here.

Hello SFPCTeam, Dennis here, Not sure how and when to make my support here.

1,

From: Donna Howe
To: CPC.Stonestown
Subject: Support for Stonestown Plan
Date: Saturday, January 14, 2023 3:33:17 PM

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Howe-1 As a lifelong resident of San Francisco (age 69) and a near neighbor (Ingleside Terraces), I whole-heartedly support the plans submitted for changes to Stonestown. I believe it will be a positive change. The addition of housing, lodging, open space, improved traffic patterns and the temporary jobs that construction will bring are all things needed in this western part of the city. Yes, there will be some disruptions, but the positives outweigh the negatives. This is progress.

Donna Keuper Howe
donna.howe@comcast.net
85 Entrada Court, SF, CA 94127

Sent from my iPhone

From: jerry iwata <jerry.iwata@sbcglobal.net>
Sent: Tuesday, February 7, 2023 4:23 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Iwata-1 I am a Lakeside resident and am opposed to the planned redevelopment.

Jerry Iwata
1 Banbury drive
SF, Ca 94132

From: kevinkashi <kevinkashi@gmail.com>
Sent: Wednesday, February 8, 2023 8:10 AM
To: CPC.Stonestown
Cc: craigsargent55@gmail.com; Joel Engardio; MelgarStaff (BOS)
Subject: FW: ACTION REQUESTED BY 2/9 - Stonestown Redevelopment Project
Attachments: Stonestown EIR Comments.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Please see below for my concerns.

Thank you.

Sent from my Galaxy

-------- Original message --------
From: kevinkashi <kevinkashi@gmail.com>
Date: 2/7/23 7:20 PM (GMT-08:00)
To: sflakesidepoa@gmail.com, craigsargent55@gmail.com
Cc: Joel Engardio <jengardio@gmail.com>
Subject: FW: ACTION REQUESTED BY 2/9 - Stonestown Redevelopment Project

Good afternoon everyone. Sorry I couldn't attend this meeting.

I-Kashi-1

I reviewed the attached comments and like to add that the Stonestown project must include pre-construction survey, vibration monitoring devices, and noise monitoring stations in the Lakeside neighborhood. This responsibility must be shared by the designer, the owner, and the contractor.

The recent development by SFSU shook the ground severely and continuously for about three months. This happened during the demolition and caused damage to my house and the neighborhood. We have cracks throughout the house inside and outside and more than half of our windows do not open. I went through these damages with the SFSU staff, contractor, and their insurance companies. I asked SFSU staff to install vibration monitoring devices in the neighborhood for the entire duration but that was ignored.

I have a claim for $250k to repair the walls and cracks and replace a few windows. Like most claims SFSU, the general contractor, subcontractor, and their insurance companies are dragging their feet. Last I heard was that they were trying to decide if they were actually responsible.

The homes in Lakeside neighborhood were built in the early 30's. Walls were made with lath and plaster with canvas cover and a coat of paint over it. This system of construction is vulnerable to continuous vibrations. Vibrations delaminate the canvas and the plaster from the lath.

I-Kashi-1 (cont)

Do not make the same mistake. Take proactive action and hire structural engineers and architects and install monitoring devices. Broaden your perspective and consider the history in the neighborhood. This entire neighborhood was built on densely compacted dry sand that was imported from West Portal tunnel.

There is a muni wall at 19th Avenue and Wyton Lane. This wall has been cracked for many decades. The vibrations from SFSU demolition made this wall fail. Although this is not entirely the fault of SFSU team but keep in mind that deferred maintenance and lack of attention by the City has made public infrastructures vulnerable. This burdens Stonestown Development with additional responsibilities.

I-Kashi-2

If you review the record drawings for 19th Avenue, you would notice that the side slope from the back of the sidewalk towards the property lines on Lakeside is cut to a 1:1 slope over imported sand. This is why the sidewalk on 19th Avenue is useless and constantly covered with soil and vegetation. Public sidewalk should have been protected with retaining walls decades ago. Once again, deferred maintenence has made the sidewalk vulnerable which burdens the Stonestown Development.

If you have questions you may contact me at your convenience.

All the best.

Kevin.

Sent from my Galaxy

-------- Original message --------
From: Craig Sargent <sflakesidepoa@gmail.com>
Date: 2/7/23 2:08 PM (GMT-08:00)
To: Craig Sargent <craigsargent55@gmail.com>
Subject: ACTION REQUESTED BY 2/9 - Stonestown Redevelopment Project

Dear Neighbors:

Thanks to those of you who attended last night's meeting. During that meeting we discussed one time sensitive item that needs our attention and action by **2/9** - the Stonestown Redevelopment Project.

The redevelopment project calls for building 2.900 new housing units, an 18-story hotel on 19th Avenue, several 6-story parking structures among other features.

The majority of homeowners who attended last night's meeting are opposed to this project, as it would negatively impact our neighborhood in a number of ways (traffic, over-densification, 8-years of construction, strain on infrastructure, etc). You can learn more about the impacts by obtaining a copy of the EIR (environmental impact report) by contacting:

Florentina Craciun,
CPC.Stonestown@sfgov.org,
628-652-7510 (EIR Co-ordinator at SF Planning).

If you're opposed to this project, **we need your help.** We're hoping to get ~100 Lakeside residents to submit their concerns by Thursday 2/9. To do this, email the coordinator directly and express your concerns as a resident of Lakeside, and site the reasons for your concerns.
CPC.Stonestown@sfgov.org

The EIR is organized into 6 chapters.
Key sections are:

Scoping Comments from the Public - Chapter 1, Section 1.D.2, page 1.3

Project Description- Chapter 2, Page 2.1

Alternatives - Chapter 5, Section 5 - 1

Written comments must reference the EIR, and should be emailed to Florentina by February 9, 2023.

Here is an example from our neighbor Jim attached!

All the best,
Craig Sargent

Attachment:

Project Title: Stonestown ProjectCase No:
2021-012028ENV

Date: January 14, 2023

Attn: Florentina Craciun, EIR CoordinatorEmail:
CPC.Stonestown@sfgov.org

Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

From: James P. Herlihy
160 Broadmoor Drive, San Francisco, CA 94132Member,
Lakeside Property Owners Association

1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.
3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St. Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6
4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3
5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5
6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1
7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13
8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17
10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.
11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4
12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2
13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore.

From: Liang, Xinyu (CPC)
To: MM K
Cc: Craciun, Florentina (CPC)
Subject: RE: Stonestown Development project
Date: Monday, January 30, 2023 9:56:10 AM

Hi Mee Mee,

Thanks for reaching out. Florentina, the environmental planner on this project cc'd in this email, can provide you more information on the traffic study and mitigation method.

Thanks,

Xinyu Liang, AICP, Senior Planner
District 6, Current Planning Division
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400, San Francisco, CA 94103
Direct: (628)652-7316 | www.sfplanning.org
San Francisco Property Information Map

From: MM K <mmkiong@gmail.com>
Sent: Friday, January 27, 2023 10:13 AM
To: Liang, Xinyu (CPC) <xinyu.liang@sfgov.org>
Subject: Stonestown Development project

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Ms Liang,

I-Kiong-1 I am concerned about the negative impact to the traffic situation with this new development which will add even more cars to the road from 19th to South 280 which is already experiencing "bottleneck" condition during peaking hours given there is no public transportation from that neighborhood to the south bay.

May I know what the developer is doing to mitigate this?

Thank you
Mee Mee Kiong
415.418.0889

Project Title: Stonestown Project Case No: 2021-012028ENV

Date: February 5, 2023

Attn: Florentina Craciun, EIR Coordinator Email: CPC.Stonestown@sfgov.org

Subject: **Draft Environmental Impact Report Stonestown Development Project Comments**

From:

Laura Birsinger
223 Stonecrest Drive
San Francisco, CA 94132
Lakeside Homeowner/Resident (29 years), St Stephen Church Parishioner, YMCA Member and Stonestown Patron

Hello Florentina-

See my comments/concerns below related to the above mentioned Stonestown project.

	Area of Concern/Comment:	Section Reference in EIR Draft
I-LBirsinger-1	**Noise** • Address how nearby residents can be assured that very early morning loud demolition/construction practices will not occur during the many phases of this project? • Recent construction at Stonestown (tear down of Olive Garden and conversion to restaurant and bank) included frequent instances of very loud work between 2:00 and 6:00 am • A point of contact is required should there be any such occurrences. This contact must be able to take action real time. (Relying on the police to control is not a viable solution.).	3.c
I-LBirsinger-2	**Vibration** • Address how nearby residents (plus churches and schools) can be assured that vibrations resulting from extensive construction don't damage the integrity of their structures? (Of particular concern is the potential damage resulting from the anchoring taller buildings may require, such as the possible hotel.) • A point of contact must be provided to deal promptly with any structural issues which occur. • Note that residents on Denslowe Drive reported cracks in their walls and other structural damage most likely caused by the recent SFSU major building project, so this concern is valid.	3.c
I-LBirsinger-3	**Traffic** • Address how increased traffic patterns in/out of Stonestown will be managed.	3.2

I-LBirsinger-4	• Of particular concern is for pedestrians crossing at the intersections of 19th and 20th Avenues at Winston and Eucalyptus. These pedestrians are students, shoppers, and residents walking to and from public transportation.	
I-LBirsinger-5	**Safety/Crime** • Address how the draft EIR indication that there will be no additional need for public services (<u>including</u> Police) was measured. • Stonestown is currently a mecca for shoplifting and car break ins. Each day's police blotter includes at least four instances within the Stonestown boundaries (mall, roads and parking areas). Those only reflect crimes actually reported. The security at the complex is already less than adequate. • Due to the well-known lack of police presence city-wide in San Francisco, the developers must consider an alternative to keep shoppers, merchants and residents safe. What are the plans to ensure safety? Perhaps an <u>enhanced private</u> security team should be considered as a means of reducing the crime.	5.c (no increase in demand for public services-including Police)

Thank you for addressing our concerns,

Laura Birsinger

From: Marie <marie415@gmail.com>
Sent: Thursday, February 9, 2023 9:40 AM
To: CPC.Stonestown
Subject: Stonestown Revelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Ms. Craciun,

I-Lee-1 I'm a long-time resident of Lakeside and I'm against the enormous project coming to Stonestown. I live a block away and my cross street is Winston. I'm very concerned about the traffic and air quality this huge project will bring to my neighborhood.

I-Lee-2 Please conduct the necessary research on traffic. At times (holidays or after school hours), it's very difficult to get across Winston with traffic backed up to Junipero Sierra Blvd. I can't imagine what will happen once 2800 additional units are added at Stonestown. 19th avenue (highway 1) is already congested as it is. Please don't add to the madness.

I-Lee-3 I truly hope the city conducts surveys and research to make sure the neighbors will not be adversely affected by this project because that's the reason we moved to this neighborhood.

--
Marie Lee

From: Michele Ho Lewis <htwelei@yahoo.com>
Sent: Saturday, February 11, 2023 2:49 PM
To: CPC.Stonestown
Subject: Objection to Development of 90 Foot Tall Tower

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Florentino Craciun,

I-Lewis-1 As a resident of Lakeshore Neighborhood, I strongly object the housing development plan, due to negatively impact
1- the enjoyment of the park
2- Current serene, quiet and beautiful skyline and landscape and
3- Blocking the easy access to the shopping mall.

Thank you for your considerations,
Best wishes,
Mrs Lewis
129 Inverness Dr
SF, CA 94132
415-323-0082

From: LG <lsgguard2004-mail@yahoo.com>
Sent: Monday, February 13, 2023 1:06 PM
To: CPC.Stonestown
Subject: Stonestown Draft EIR-public comments

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

San Francisco Planning Department
Attention: Florentina Craciun, Environmental Coordinator
Project Title: Stonestown Project
Case No: 2021-012028ENV
Date: February 13, 2023

We are 32 year residents and homeowners in the Lakeside neighborhood, across 19th Avenue from the proposed project. We are writing to express our concerns about the Draft EIR report:

I-LG-1
- Cumulative effect of multiple construction projects on traffic and mass transit (Chapter 3). The report only considers projects within a .5 mile radius, however, new residents of the large Balboa Reservoir project (1000+ units) can also be expected to patronize Stonestown and increase traffic congestion on Ocean Avenue and Holloway Avenue from City College to 19th Avenue.

I-LG-2
- Increased demand on outdated infrastructure (electric, water, sewer) (Section 3.7) Although the developer proposes to build new infrastructure on the project site, it will be connected to existing resources. Considering frequent drought conditions, flooding and sewage spills, is it safe to add thousands of new residents without clear plans and funding to upgrade infrastructure?

I-LG-3
- The increased demand for public services from fire protection, police and Emergency medical services is not adequately addressed (Appendix B Section E.13) The Initial Study (page 65) acknowledges that the Police Department is understaffed, yet concludes that the additional demands of 7,000 new residents (plus those from the additional near-by projects) would not have a significant impact. The statistics used to support this conclusion came from 2018-2021 (including 2 years of Covid restrictions)

I-LG-4
- Transportation Demand Management intended to reduce use of cars does not address the needs of seniors, the disabled and families with young children. Some of us are not able to walk long distances, ride bikes, etc. Does Demand Management mean charging for parking at the mall?

I-LG-5
- Impact of project (cumulative) on cleanliness, public health and quality of life. The images of the proposed project are pristine, but the reality is that 19th Avenue is covered with graffiti and trash is dumped everywhere. What will prevent this project from attracting more of the same?

I-LG-6
- More detail about the risks of exposure to dust and toxic materials is needed. The Draft EIR seems to say that the anticipated risks of additional cancer cases and other morbidities are acceptable. However, considering the number of schools (pre-school through university) in the area, even a small increase would be tragic. (Appendix B. Section E. 17).

I-LG-7
- The Draft EIR is limited to a few selected topics, but for those of us who live in the surrounding neighborhoods there are additional issues deemed insignificant that will have a

I-LG-7
(cont.)

huge impact on our homes and families. These issues are deserving of further study and efforts to mitigate. In addition, building these huge projects without definite plans and funding in place to improve infrastructure, public transit and public services in the area will affect both current and future residents.

Thank you for this opportunity to express our concerns.

From: J L <jefflifur@gmail.com>
Sent: Sunday, February 12, 2023 3:16 PM
To: CPC.Stonestown
Subject: Comments to Draft Stonestown Development Project EIR

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear: Florentina Craciun, EIR Coordinator

I-Lifur-1 As a daily user of the Rolph Nicol Jr. park, I strongly object to the misleading and false conclusion stated in the draft Stonestown Development Project EIR that the increased shading of Rolph Nicol Jr. park would be "less than significant" and "would not be expected to substantially affect people's enjoyment of the park". As a daily user of the park, the additional shading which will cast significant additional shading throughout most of the day including before 11 am and after 3 pm when I and many others in the Merced Manor neighborhood use the park will significantly adversely impact enjoyment of the park. Furthermore, the nature of shading of ninety feet tall buildings (NW1, NW2, NW3 and W1) is significantly different from the filtered light through the existing eucalyptus trees. No light passes through a building. The language in the EIR needs to reflect the actual impact on residents who use the park and not dismiss the impact as "not substantial" which is simply not true. The sunlight in the colder morning and late afternoon hours, especially during the winter months is even more critical to the enjoyment of the park and this is completely disregarded by the draft report. The fact that the proposed buildings will block the southern exposure to light (up to 74% of the light at its peak in the early morning according to the report) will absolutely have a detrimental impact on the park and those of us who use it. The proposed development, instead of ruining the park should add green space directly along the entire border of the park back for a distance of at least 2.5 times the height of the nearest building (i.e. at least 225 feet from the edge of the park in the case of 90-foot high buildings) to ensure natural light is not blocked at any time of the year.

I-Lifur-2 Ensuring there is additional green space on both sides of the current border of the park will also ensure the ongoing presence of birds in the Rolph Nicol park which is home to hawks, owls, crows and numerous song birds. The small, peaceful park will naturally become much more congested with the influx of so many people living right next to it. This is bound to drive away the birds and will also increase the level of trash left in the park along with noise levels. Instead of leaving the small park to fend for itself, the developer should be required to expand the park on its side of the border allowing greater space to absorb the increased usage that will come with the greater population density. The City already has trouble maintaining Rolph Nicol park at its current level of usage. It was left for long periods without watering which largely eliminated the beautiful thick meadow used for play, and users of the park frequently have to spend time clearing litter from the park before and while using it. The increased usage will further strain the park. Expanding the green space along the park will help mitigate the worst impacts on the existing park and help ensure the quality of life for all residents that only sufficient park and green space areas can make possible.

Finally, the up to 2-year construction period for the project so close to the Rolph Nicol park with the unavoidable pollution, dust, and noise that accompany such massive projects, will also disrupt its animal life, quiet enjoyment of the park and the beautiful, quiet open space sanctuary that it currently is. Further set back from the park would help mitigate such disruption during the long construction period.

Thank you,
-Jeff Lifur

'cc: provided separately to Supervisor Engardio

From: Cynthia Lo <cynthia.m.lo@gmail.com>
Sent: Saturday, February 11, 2023 9:42 PM
To: CPC.Stonestown
Cc: dlhsf1@aol.com
Subject: Development Behind Rolph Nicol Park

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear EIR Coordinator, Florentina Craciun,

I-Lo-1 As a native San Franciscan, residents of Merced Manor for almost ten years now, my family, dog and I take pride in being able to take long walks around our spacious neighborhood. Our residential homes as well as nearby schools, church and YMCA are all set back from the street/sidewalk, creating a sense of comfort and relaxation. These low-rise buildings are not looking over our shoulders as we stroll.

Here at Merced Manor and Lakeshore, we are a close knit community. Beyond the hustle and bustle of school hours, Rolph Nicol Park is our neighborhood hangout; we gather here throughout the day. The park has no adjacent buildings on two sides and is filled with tall trees, shrubs, a large grass area and a small play structure, creating a zen-like environment. During the day, the sun will peak through the trees painting a perfect back-drop. During the night, the distant lights of Stonestown can be seen, like illuminating a dark room with reassuring night lights. The new plan of constructing 90-foot buildings behind the park will destroy the scenery, bring gloominess and impact the entire neighborhood.

I-Lo-2 Moreover, Eucalyptus Dr houses an elementary school, a high school, a church with a K-8 school, a family YMCA and specifically, an entrance on 20th Ave directly to Stonestown. On any given school day, this street is traffic jammed three to four times for drop-offs/pick-ups. With the new plans, creating double to triple more residents, this mall entrance will ultimately create chaos.

I-Lo-3 In conclusion, erecting multiple 90-foot towers will significantly affect nearby residents and alter lifestyles in more ways imaginable. Please reconsider to previous plans of 4-story buildings.

Thank you for taking our concerns.

Cynthia Lo and Family
3070 26th Ave
San Francisco, CA. 94132

My name is Andrew Moore and I am a 20 year resident of the Lakeside community which is a neighborhood of approximately 500 homes across 19th Avenue from the Stonestown Shopping Mall. Lakeside was developed by the same family that built the shopping mall.

I-Moore-1 I am writing to state my objections to the the draft environmental impact report for the Stonestown Development Project. While it is a heavy lift for a lay person to synthesize the intricacies of the EIR, the gist of what is proposed is problematic for the following reasons.

The report itself is clear from the outset that "the proposed project or variant would result in **significant and unavoidable impacts** in the following areas, **even with implementation of feasible mitigation measures.**" (Summary, p. S-2, emphasis added) These areas are Historic Architectural Resources, Transportation and Circulation, Noise, Air Quality and Wind. In essence, the quality of life—both for those currently living in the area and those who might move to the area—would decline as a result of this project.

I-Moore-2 Setting aside the considerable direct impact that the project will have for some eight years on the lives of the residents of Lakeside (particularly noise, pollution, and congestion—for which there is no direct compensation), the size of the project is incompatible with the scale and the mass of buildings in the surrounding area. The plan calls for changing the zoning to raise the height limits to 90 feet (and 150 feet for a hotel). In particular there would be a string of buildings of 90 feet in height (and one of 150 feet) along 19th Avenue which would be a visually jarring Manhattanization of this thoroughfare. Other than a few buildings at San Francisco State (which are a mile away and not controlled by the City) there are no buildings along 19th Avenue (or its continuation as Park Presidio) which are close to 90 feet in height. People the world over visit San Francisco because much of it is beautiful—esthetics matter greatly.

I-Moore-3 Apart from the esthetics, these buildings would create permanent shadows during certain times of the day over dozens of homes on the first two streets in Lakeside to the east of 19th Avenue. (see map, Appendix H, page 14) While the report analyzes the impact of the shadows on the Junipero Serra Playground (which is enclosed by Lakeside), the permanent impact on the homes affected by the shadows created by the proposed buildings along 19th Avenue is not discussed.

I-Moore-4 Another concern is parking. While the project calls for a total of 4,250 spaces overall, if we subtract the permanent parking for residents, it is not clear how many parking spaces are available for visitors to mall. From my causal observation, the majority of the current spaces available at the mall are used daily, let alone the congestion during the holidays. No mention or analysis is made of where people will park when they wish to visit the mall, or the impact upon the tenants at the mall when people decide not to visit due to inadequate parking.

I-Moore-5 Finally, no where is there a discussion of the economic feasibility of the project. That is, what analysis and projections have been made showing that people are willing to pay for the kinds of residential properties proposed at the price points necessary for the developer to go ahead with the project. While this may not technically be a consideration for the EIR, it really is an environmental issue. If the builder can not show that the project is highly viable as currently envisioned, it is too easy to claim that something different (and likely less desirable than what currently exists) should be put in its place down the road. Ultimately, the environment in which people currently live would be the loser.

Thank you for your consideration of the points presented.

From: Nasrin Naraghi <nnaraghi1@gmail.com>
Sent: Thursday, February 9, 2023 1:24 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Program Coordinator,

I-Naraghi-1 My family has been living in the Lakeside neighborhood since 2010 and like the close proximity to Stonestown and the other retail outlets in the area. As it is, the traffic congestion has become much more dense. We feel the Stonestown redevelopment will adversely affect the standard of living in our neighborhood due to the following factors:

1. Congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

I-Naraghi-2 2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.

I-Naraghi-3 3) Causing potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6

I-Naraghi-4 4) The construction and operational noise in the surrounding neighborhoods. Section 3.3

I-Naraghi-5 5) The adverse effect of Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5

I-Naraghi-6 6) The architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1

I-Naraghi-7 7) The increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13

I-Naraghi-8 8) The geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of an unstable landfill. In the early 1950s the site was a canyon which was filled in with construction

I-Naraghi-8 (cont.) debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15

I-Naraghi-9 9) The risks posed by demolition of existing buildings for hazardous materials. The Petco site was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17

I-Naraghi-10 10) The cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.

I-Naraghi-11 11) The new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4

I-Naraghi-12 12) The impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2

I-Naraghi-13 13) The impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore

Thank you for your kind attention,

Fred & Nasrin Naraghi
165 Broadmoor Dr
San Francisco, CA 94132

From: Hemai <hemionus@gmail.com>
Sent: Thursday, February 9, 2023 12:46 PM
To: CPC.Stonestown
Subject: concerns from a Lakeside resident re Stonestown Project EIR

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Parthasarathy-1 Hello, I am a homeowner in Lakeside and am writing to express my concern about the environmental impact of the proposed Stonestown project. I am particularly concerned about the traffic on Winston Drive and 19th Avenue, the resulting decrease in air quality (which is already noticeable the closer you get to 19th avenue) and hazards to pedestrians. The traffic situation at the corner of Winston & 19th is already quite bad: I have witnessed multiple accidents and was personally almost run over by a car. I am particularly concerned for the many schoolchildren in the area.

Below, please find these concerns expressed in more detail as comments to the EIR
Yours sincerely,

Hemai Parthasarathy
175 Stonecrest Drive
San Francisco, CA 94132

Project Title: Stonestown Project
Case No: 2021-012028ENV
Date: January 14, 2023
Attn: Florentina Craciun, EIR Coordinator
Email: CPC.Stonestown@sfgov.org
Subject: Draft Environmental Impact Report
Stonestown Development Project
Comments

I-Parthasarathy-2 1) Address and analyze the impact of increased traffic in the study area, a) congestion, diversion of Stonestown related traffic into the adjacent neighborhoods of Lakeside and Merced Manor, b) restrict traffic in these neighborhoods and adjacent neighborhoods, c) analyze cumulative traffic impacts on Winston Drive, 19th Avenue 20th Ave inter alia, dangerous pedestrian crossing at 19th Avenue and Winston Drive, d) increased parking demand in Lakeside and Merced Manor and adjacent neighborhoods. EIR Section 3-2 Transportation and Circulation does not adequately address these issues.

I-Parthasarathy-3 2) Address the impact on vistas and views of the project on 19th Avenue from Eucalyptus Drive to Winston Drive and Buckingham Way. Section D-4.

I-Parthasarathy-4 3) Address potential shadows on adjacent pre-schools and schools (Lakeside Presbyterian, St. Stephen's School, Chinese American International School, SFSU, Lowell High School, Lakeshore), churches (Lakeside Presbyterian, Authentic Church, and St.Stephen's), neighborhoods (Lakeside, Merced Manor, Ingleside Terraces, Lakeshore Acres).Section 3.6

I-Parthasarathy-5 4) Analyze construction and operational noise on surrounding neighborhoods. Section 3.3

I-Parthasarathy-6	5) Analyze Air quality, wind, glare especially on surrounding neighborhoods of Lakeside and 19th Avenue traffic from the proposed apartment and hotel construction which will be massed along the West side of 19th Avenue from Lakeside Presbyterian Church to Winston Drive and Buckingham Way. Sections 3.4 and 3.5
I-Parthasarathy-7	6) Evaluate the architectural style, bulk, height and context of 2900 new housing units and an 18 story hotel on the architectural and historic character of adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces and Lakeshore Acres. Section 3.1
I-Parthasarathy-8	7) Address the increased demand for public services from fire protection, police and emergency services imposed by 2900 new dwellings and the 18 story hotel. Appendix B Section E.13
I-Parthasarathy-9	8) Analyze the geology, soil composition, to support new buildings, risk of potential liquefaction and how to reduce these hazards. Large swathes of the proposed building site behind the theater, and St. Stephen's Church have never been built on or developed during the 70 year plus history of Stonestown. The site behind the theater consists of unstable landfill. In the early 1950s the site was a canyon which was filled in with construction debris and trash, and tarred over by the Stonestown Corp without the benefit of modern landfill compaction engineering. Appendix B Section E. 15
I-Parthasarathy-10	9) Evaluate the risks posed by demolition of existing buildings for hazardous materials. The Petco site, was a Cadillac dealership and service garage for decades. Hydrocarbon waste residue still drains from the site down Buckingham Way adjacent to St. Stephen's School. Appendix B. Section E. 17
I-Parthasarathy-11	10) Address the cumulative impact of 2900 units and their residents (3000 to 5000 people) plus an 18 story hotel on the SFSU campus population of approximately 30,000 and competition for public services.
I-Parthasarathy-12	11) Analyze how the Stonestown project of 2900 new housing units and 18 story hotel will exacerbate San Francisco's designation as a Heat Island. Section 3.4
I-Parthasarathy-13	12) Address the impact of increased ridership demand from residents of 2900 housing units on the SFMTA Streetcar platform at 19th Avenue and Winston Drive. The platform is already at capacity during morning and afternoon rush hours. Section 3.2
I-Parthasarathy-14	13) Address the impact of increased demand for sewage and water infrastructure on the adjacent neighborhoods of Lakeside, Merced Manor, Ingleside Terraces, Lakeshore.

David Pilpel
2151 27th Ave
San Francisco CA 94116-1730

Florentina Craciun, Senior Environmental Planner
Planning Department
49 S Van Ness Ave Ste 1400
San Francisco CA 94103-3799

February 13, 2023

Re: Case No. 2021-012028ENV, Stonestown Development Project Draft EIR Public Comments

Dear Ms. Craciun,

I write to comment on the Draft Environmental Impact Report (EIR) for this project.

I-Pilpel-1 1. I urge that a new alternative be developed that would create fewer housing units, retail space, and other uses, and reduce density and height further than the Code Compliant or Reduced Density Alternatives. I believe that adding another alternative as described would increase the choice of alternatives and allow a better range of alternatives for analysis and decisionmaking on this important project on the west side of San Francisco.

I-Pilpel-2 2. I believe that this Project is not appropriate for an LEED proposal. The economy, locally and globally, is highly uncertain at this time. Downtown, educational institutions, housing, shopping, and transportation are incredibly speculative right now. Thoughtful and prudent consideration of long-term impacts is needed, with no rush to a decision on entitlements and growth.

I-Pilpel-3 3. The Draft EIR admits that the Project would cause "significant and unavoidable impacts related to transportation and circulation, air quality, noise, historic architectural resources, and wind after implementation of mitigation measures." The Draft EIR fails to fully address transportation and circulation impacts and air quality impacts. After admitting that the Project would "substantially delay public transit," the Draft EIR claims that impact is unavoidable. The Draft EIR does not adequately address or mitigate impacts on either automobiles or public transit.

I-Pilpel-4 4. The environmental impacts must be addressed and not relegated to a Statement of Overriding Conseiderations (SOC). The impacts will have regional impacts, not just local impacts. 19th Avenue, part of State Route 1, connects the Golden Gate Bridge to Interstate 280 in Daly City.

I-Pilpel-5 5. The Draft EIR cites to unsupported conclusions in the Initial Study (IS). The IS is not a substitute or exemption for the analysis and mitigation requirements covering those conclusions, including conclusions of no impacts to "land use and land use planning, population and housing, cultural resources …, greenhouse gas emissions, recreation, public services, biological resources, geology and soils, hydrology and water quality, hazards and hazardous material, energy resources …, and wildfire." The Project will clearly have impacts on land use, population,

I-Pilpel-5 (cont.) housing, greenhouse gas emissions, energy resources, and wildfire, and those impacts must be analyzed in the EIR and mitigated.

I-Pilpel-6 6. Greenhouse gas (GHG) emissions must be analyzed in the DEIR. (see, e.g., IBC Business Owners for Sensible Development v. City of Irvine (2023) 2023 Cal.App.LEXIS at p. *28-35 [EIR must analyze project's incremental contribution to GHG, which may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions; must also consider source of such emissions and total GHG emissions])

I-Pilpel-7 7. The Draft EIR dismisses the Project's impacts from changing the entire character of the area from two-story structures to include some 20-story structures.

I-Pilpel-8 The Air Quality impacts are narrowed to include only construction impacts, which does not comply with CEQA.

I-Pilpel-9 8. The Project would eliminate parking and traffic lanes both in the Project area (Stonestown itself) and surrounding streets. The surrounding area is already significantly impacted by traffic related to 19th Avenue (State Route 1), San Francisco State University, and Parkmerced.

I-Pilpel-10 9. I found no coherent discussion in the Draft EIR of Vehicles Miled Traveled (VMT), energy consumption from being stuck in traffic, or emergency evacuation methods and routes.

10. The Draft EIR implausibly claims that the Project would have no impacts on VMT. New high-rises with thousands of residential units will of course impact VMT, which must be analyzed and mitigated.

I-Pilpel-11 11. I also found no coherent discussion or mitigation of how added traffic will affect long-term air quality. I found the air quality discussion to be mostly about construction air quality impacts.

Thanks for considering my comments; please keep me informed by mail on this project.

Sincerely,

/s/
David Pilpel

From: Jan Ressl <janressl@gmail.com>
Sent: Monday, February 13, 2023 8:08 PM
To: CPC.Stonestown
Cc: dlhsfl@aol.com
Subject: Re: Stonestown Residential Tower

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Hi Florentina,

I-Ressl-1 I'm writing to you to express my disappointment regarding the proposed residential tower to be built behind Stonestown Mall. My understanding was that the building was originally going to be 4 stories tall, but has now suddenly changed to 90 feet (almost 8 stories) without any consultation with the neighborhood. Given that the developer has made several assurances about the proposed work, on the basis of which we decided not to oppose the construction, my husband and I are very worried that the developer feels free to discard any promises they've made if it is to their convenience.

We think it is essential that the city deny their permit until such time as a transparent public hearing has been made on their proposed amendment to increase the height to 90 feet.

If they build it at the promised 4 stories, we would have no objection. But from our perspective, they are trying to pull a fast one. It would be unacceptable if the city allowed them to get away with it.

Thanks for your time,

Jan Ressl & Ajith Ramanathan

From: Christine Riley <christineriley71@yahoo.com>
Sent: Wednesday, February 8, 2023 1:36 PM
To: Craciun, Florentina (CPC)
Subject: Stonestown Development

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Hello Florentina,

I-Riley-1 This is Christine Riley, a San Francisco native and a homeowner in Lakeside Village.
I have been keeping informed on the plans for the Stonestown Development Project for several years. The purpose of this message is to share my concerns with you.

I am not opposed to expanding the property to include housing and additional commercial and open space. I also applaud Brookfield Properties for keeping their neighbors informed as the project has evolved.

I-Riley-2 However, after reviewing the Environmental Impact Report, and as a resident that lives directly across the street from the mall, I am deeply concerned with three specific areas that the development will have on our neighborhood. The addition of 2,930 residences and a hotel will surely impact traffic, public transportation and emergency services.

As a neighbor I have first hand experience in observing the congestion that currently exists, the air quality issues that additional vehicles will add, and the need for additional transportation options and staffing for emergency responders. I recommend scaling the project down in size to be less invasive.

Thank you for the opportunity to voice my opinion. I hope that you and the Planning Commission take into consideration the views of those of us that will be impacted the most.

Best regards,
Christine Riley

Sent from my iPa

From: William Schneider <schneiderwg@netscape.net>
Sent: Wednesday, February 8, 2023 10:56 AM
To: CPC.Stonestown; jimherlihy@gmail.com; craigsargent55@gmail.com
Subject: Stonestown Development

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Schneider-1 St Stevens church attempted to develop the land behind the Cinemas- 40 Years ago it was determined to be toxic and landfill that would not support tall buildings. Please research and respond. Thank You, William Schneider

From: Howard Strassner <ruthow1@gmail.com>
Sent: Thursday, January 26, 2023 7:43 PM
To: CPC.Stonestown
Subject: Stonestown DEIR Comments
Attachments: senior housing ideal.docx; EIR stonestown.doc

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

attached

On an Ideal Senior Housing Facility –HS Jan/2023

This concept of an ideal facility was developed as I searched for my near future new home but I did discovered some close facsimiles in Oakland. The 18 story building proposed Stonestown would be my ideal is construction started five years ago. But, it could be available for some ones future.

The facility should be large, probably more than 200 units. This will allow for good management and many people meeting opportunities for residents. Residence in the facility should be limited to people who have started to collect social security to self-select for common interests because senior housing is more than just housing. Because seniors are trending downward in abilities and upward in needs for service the units should be proportionally allocated to a few people who only want to downsize and desire only limited services with the majority of units for people who need more services but are mostly independent. This means that all new residents must be able to walk in without assistance and that most people will age in place in the same unit or at least in the same building. I don't believe that those with an extreme loss of memory and/or very great needs for personal care should live in this facility. The latter should not mean that those who can and/do walk, wheel or motor themselves to facility functions should be required to move. The growing number of the latter group, over time, to enjoy the facility is another reason for a larger facility.

Seniors also come with a range of available finances and needs for space. Many can use a large studio, about 500 square feet. Many will only be able to afford a small studio. A few, perhaps couples, may feel a need for larger, separate one bedroom units. "Murphy" beds, back to the 1920s, can make entertaining more feasible in small units. Kitchens should all be minimal: two burners, no oven, small microwave, small refrigerator and a little counter space and storage. Hopefully SF and developers can see that these small units make it easier for people to downsize and release their larger houses for families who need more space. This will allow most seniors to age in place and not have to move until near the end. In addition, many people who are ready to downsize from two or three bedrooms have a lower floor that can be improved to provide an additional housing unit.

The residence should include food service. A few residents will want 21 meals per week. Most will want the flexibility of 14 meals per week. Saving a few meal tickets to treat family to meal will be nice. Some residents will want very few senior meals per week and will pay a little more per meal. Residents should be able to change their food needs as they age. Maybe the dining room should

I-Strassner-1 (cont.)

have two sittings. All of the residents should contribute proportionally to the various kinds of common space. This might constitute a small subsidy for those with reduced means. Services should be available but elective. Weekly cleaning is nice but cleaning a small space can be better than doing a tai chi exercise on you tube. Again, choice is good but maybe except for recovery after illness a choice should be long term, to allow management to plan. Shuttle vans are also a good service.

An ideal location would have: good transit service nearby; accessible pleasant nearby walks in parks and neighborhoods and close by food shopping for those who elect to do some of their own cooking. These virtues are part of the 18 story building proposed for the Stonestown parking lot and the building can be designed to include all of the above virtues too. The problem is facility management. Senior facilities used to be owned and operated as non-profits. I suggest that the future residents pay the rent for their unit to Brookfield; in the typical supply and demand method. However, their payment for their share of the essential senior common spaces should be paid to a new carefully organized cooperative management organization. This organization will also provide the services and meals that the residents will choose. While the latter is difficult, it will have more benefits to the resident seniors and society in general than the growing corporatization of senior facilities that used to be managed by nonprofit religious or other groups. The alternative to a cooperative would be close government supervision similar to a monopoly because seniors after they move in and age can't really move. Thus they become utility consumers.

Attachment:

SIE
CI

SAN FRANCISCO GROUP

January 27, 2023

Florentina Cracium, Coordinator
CPC.Stonestown@#sfgov.org
Planning Department, 1660 Mission Street
San Francisco CA 94103-2414

Re: Stonestown DEIR Comments, Case No. 2021-012028ENV

Dear Ms. Cracium,

Thank you for the opportunity to comment on the subject SEIR. The Sierra Club appreciates your electronic publishing of the DEIR to save paper, printing and mailing cost.

The subject document has over 600 pages that attempt to deal with prospective environmental failures. Thankfully, the Stonestown project, of dense housing near good transit is inherently a benefit to the environment by providing residents with thermally efficient housing and a more economic life of less driving. The Sierra Club has reviewed the subject Draft EIR and we have a few suggestions to improve the final EIR and make the ultimate project more even beneficial to the environment:

1) Because of San Francisco's great need of additional affordable housing the Study should have included a statement about how many additional affordable units, of what kind, would be provided if an outside source of funding, of how much, was available.

2) Because of SF's increasing numbers of elderly residents and our great need for market rate housing the study should have included as a partial alternative the impacts of using the eighteen story building as a senior "independent living" residence. This alternative should note that many of the residents of this senior facility would be people who are ready to downsize from a two or three bedroom home or apartment but now see little advantage to moving. If they can move into a nearby senior residence they will release their larger, nearly empty, houses for families who need more space. In addition some of these homes have a lower floor that can be improved to provide a second housing unit, but, that is too big a project for an elderly person. An attachment is provided to show how this building might work as an Ideal senior residence.

3) Because of SF's great need of housing of all sorts the Study should have included an alternative of greater density and height (without shading an existing park) with up to the maximum number of units, with existing zoning, or more. This alternative would provide the developer with greater profits from the currently wasted parking lot land and more shoppers for the remaining shopping center. The studies discussion of the problems and benefits of increased density on this site might give the public and their elected representatives a chance to select a larger project or a better understanding of why the proposed size is just right.

Another Sierra Club member may be commenting on other aspects of this project

Thank you for your consideration,

Howard Strassner, Member SF Group Executive Committee of the Sierra Club
419 Vicente, San Francisco CA 94116, 661-8786, (h,w)
email: ruthow1@gmail.com

From: stroxel@pacbell.net
Sent: Saturday, February 11, 2023 11:10 PM
To: CPC.Stonestown
Subject: Comments and Opposition to the Increase in Height of the Proposed Residential Towers adjacent to Rolph Nicol Park and Playground

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

My name is Suzanne Troxel. I am a native San Franciscan who has lived in Merced Manor for almost 37 years.

I-Troxel-1 I am writing to express my concerns regarding recent changes that have been made to the Stonestown Development Plan (the Plan) as outlined in the EIR dated December 14, 2022. According to the Plan, and as confirmed by Reuel Cooke, Manager of Community Development for Brookfield Properties, there will now be three eight (8) story buildings adjacent to Rolph Nicol Park and Playground (the Park) . The previous Plan indicated that the adjacent buildings would be four (4) stories in height. The proposed buildings are now twice their original proposed height.

I-Troxel-2 The Park is not only used by the adjacent neighborhoods of Merced Manor and Lakeshore Acres, but also by students and family of students attending Lowell High School, Lakeshore Elementary School, St. Stephens School and other neighborhood schools, families that visit or live near Stonestown and many others. Eight story buildings looming over the Park to its south will impact the light and sun that the Park receives and generally change its atmosphere. The weather in this neighborhood is often foggy and colder than other parts of San Francisco, so restricting the current light and sun that the Park receives will have an even more adverse impact on the Park.

Respectively submitted,

Suzanne Troxel
2980 24th Avenue
San Francisco, CA 94132
stroxel@pacbell.net
415 999-7329

From: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Sent: Tuesday, January 3, 2023 11:49 AM
To: Susan Yogi
Subject: FW: Comments on Stonestown EIR

Florentina Craciun, AICP
Senior Environmental Planner
Environmental Planning Division
San Francisco Planning
49 South Van Ness Avenue, Suite 1400,
San Francisco, CA 94103
Direct: 628.652.7510 www.sfplanning.org

San Francisco Property Information Map

From: Kath Tsakalakis <kath@trefo.com>
Sent: Friday, December 23, 2022 5:28 PM
To: CPC.Stonestown <CPC.Stonestown@sfgov.org>
Subject: Comments on Stonestown EIR

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Florentina,

Hope you're well. I'd like to submit these written comments for the Stonestown EIR. By way of background, my family lives in Lakeside near Stonestown. I'm relatively involved with the community as the co-founder of the Friends of Lakeside Village nonprofit and Business Council, a member of the San Francisco Council of District Merchants Associations since 2021 (website: lakeside.mainfare.com). These comments represent my personal perspective – they are not a consensus from our neighborhood committee or Business Council.

I-Tsakalakis-1

Firstly, I would like to say that I wholeheartedly support the Stonestown project. It will be a massive improvement to our neighborhood. In particular, the project will:

1. **Continue bringing Stonestown retail into this century**, building on the progress already made with the new anchor tenants (Whole Foods, Cinema, Sports Basement, and Target).
2. **Add a much-needed hotel to the west side** of San Francisco within easy reach of the airport and freeways. Currently people are forced to stay downtown or on the Peninsula.
3. **Add much-needed homes.** While there may be 61,000 empty homes in San Francisco today (due to an apparent supply-demand-price mismatch, source: kron4.com article), the only solution long-term to revive our small landlocked city is building up with higher density. I would like to see the maximum number of homes.
4. **Add more green space while adding parking spaces**. Today, the acres of above ground parking are an eyesore and throwback to a bygone era.

I-Tsakalakis-2

It may be that I missed this in the 628-page EIR, but I would like to see **more green walls on the residential, commercial, and retail buildings**. Singapore is a shining example of how greenery makes a high rise, dense city more beautiful and livable. This link shows many examples that could easily be incorporated into the

I-Tsakalakis-2 (cont.)

Stonestown design: http://www.greenroofs.com/2019/05/01/green-walls-becoming-more-popular-in-singapore-buildings/ As a member of the Board of Trustees, I worked with the Cathedral School for Boys (by Grace Cathedral) on a recent renovation, and a feature greatly appreciated by the neighbors as well as kids and teachers was green walls.

I-Tsakalakis-3

While there was discussion of public transportation in the EIR, there doesn't seem to be acknowledgement that the M-line is woefully inadequate today. **What will the Stonestown developers contribute financially to improving the M-line?** The Stonestown station has a small platform that barely accommodates passengers today. It also makes no sense for stations to be located above ground in the middle of the busy 6-lane 19th Avenue. The M-line should go underground from West Portal station so that trains can be longer and not muddle along with cars/ bicycles/ buses. Locating stations on the West side of 19th would remove the need for most passengers to cross 19th Avenue from the Mall. By comparison, there is relatively little demand for public transport from the low-density Lakeside district on the East side of 19th Avenue. The K should also go underground until at least after St. Francis Circle.

I look forward to hearing from you with any questions.
Yours sincerely,
Kath Tsakalakis
Mobile 415-636-2421

From: Y & D tsang <tsangmission@gmail.com>
Sent: Wednesday, February 8, 2023 11:48 PM
To: CPC.Stonestown
Subject: Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Florentina:

I-Tsang-1 I and my family strongly object to the redevelopment project particularly in light of the traffic flow. It is already a mess right now with traffic jams
daily along 19th Ave. The added business and residential traffic will be unbearable.
Our house is in Lakeside at the corner of Wyton and Denslowe east of 19ty Ave. Wyton is a narrow walkway which does not and cannot support
heavy traffic which the developer portrays to be a main conduit crossing 19th Ave. This will destroy my neighborhood and the value of our house.
We spent three years applying for remodeling of our home including planting trees along Wyton and 19th Ave. which application is pending approval
after completing the recording process with the county recorder. This redevelopment project and intended diverging of traffic kills our entire effort to
improve our house and value.

As of now, we constantly repaint over graffiti on our fence facing the sidewalk east of 19th Ave. We can't imagine how much worse it will become with

I-Tsang-2 increased traffic. The infrastructure required to support the increased population density and activities is huge and will adversely impact the neighborhood.

I-Tsang-1 (cont.) It directly kills our effort to improve our neighborhood. Come and drive along 19th Ave. and see firsthand the already congested traffic.

With respect,

Ower of Denslowe
D.W Tsang
dwtsang@gmail.com

From: T W
To: CPC.Stonestown; T W
Subject: Stonestown Development Project
Date: Friday, February 3, 2023 1:51:44 PM

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

I-Will-1 Please provide safe access during all phases of construction between the student-accessed pathway in Rolph Nichol park and the stop-sign controlled crosswalk on Buckingham Way in front of the existing movie theater for Lowell High School students to access the Stonestown Mall during the 10-years planned development. Lowell High School is a neighbor of the Stonestown mall, and is the biggest high school in San Francisco with 2,800 students. Lowell students are frequent mall customers both during lunch and after school.

I-Will-2 Please provide sufficient underground and above ground parking for mall customers and proposed residents of the Stonestown housing development. There are many retailers at Stonestown that selling goods that require car transport, such as family groceries at Whole Foods and Trader Joe's, ski and snowboard (skis/boots/poles) rentals and returns at Sports Basement, and multi-bag purchases made during Target runs. As a mall, Stonestown has pivoted incredibly well bringing in highly desirable retailers and restaurants. Please continue to provide convenient automobile access for shoppers so that Stonestown continues to thrive.

Thank you,

Tina Will

Project Title: Stonetown Project
Case No: 2021-012028ENV
Date: 2-9-2023
ATTN: Florentina Craciun, EIR Coordinator
From: Grace Wong

I-Wong-1

I don't believe 19th Ave can handle additional 2900 unit traffic in this area. rightnow the traffic already packed in rush hour. plus M-car on 19th Ave will show down more incoming traffic from freeway. Hotel business will bring more traffic on 19th Ave. 19th Ave is main street connected sunset and Richmond residential District. SFSU has a lot students walks on 19th Ave We need a safe street not a heavy traffic street.

From: Pei Zhu <peizz8@icloud.com>
Sent: Wednesday, February 8, 2023 6:56 PM
To: CPC.Stonestown
Subject: Opposed to Stonestown Redevelopment Project

Follow Up Flag: Follow up
Flag Status: Flagged

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Hi there,

I-Zhou-1 I opposed to the above project as this project will bring negative impact to our neighborhood such as , overloaded parking, traffic, increasing noisy, more people will share public facilities while limited accessibility and pollution over long time construction period.

Regards,
Peiling Zhou
Owner of 243 Stratford Dr

ATTACHMENT C

Revised Variant Initial Study Topics Analysis

ATTACHMENT C
REVISED VARIANT ANALYSIS FOR THE INITIAL STUDY TOPICS

C.A Land Use and Planning

The land use and planning impacts of the variant have been described and analyzed in initial study Section E.1, Land Use and Planning, pp. 8 through 10, included as draft EIR Appendix B. The analysis concluded that the draft EIR variant would not physically divide an existing community and would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Furthermore, the analysis determined that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to land use and planning. As described below, land use and planning impacts of the revised variant would be similar to those of the draft EIR variant, and the impact conclusions would be the same.

C.A.1 Physical Division of an Established Community

The revised variant would include additional residential units, fewer non-retail sales and service uses, and no hotel uses. However, the revised variant would have the same site layout and block and street network configuration as the draft EIR variant. Like the draft EIR variant, the revised variant would not include major roadways, bridges, or freeways that could serve as a barrier to site access, nor would the revised variant remove any features that currently provide access. Therefore, the revised variant would have the same impact as the variant and would result in a less-than-significant impact related to physical division of a community. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the physical division of an established community.

C.A.2 Conflict with Applicable Land Use Plans

The revised variant would have the same overall characteristics and components as the draft EIR variant, including creating a new SUD that would rezone the project site and establish development controls for construction of a multi-phase, mixed-use project, creation of a new Special Sign District establishing signage controls, and would include amendments to the general plan and planning code to create the SUD and Special Sign District. Like the draft EIR variant, the revised variant would result in an impact related to land use and planning under CEQA if it would substantially conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect, such that a substantial adverse physical change in the environment would result. To the extent that physical environmental impacts may result from such plan/policy conflicts with the revised variant, this section discloses and analyzes these physical impacts under the relevant environmental topic sections below.

To the extent that the revised variant would conflict with current zoning and the general plan, as with the draft EIR variant, the project sponsor would seek amendments to these plans to bring the plans and the revised variant into conformity. Therefore, the revised variant would not result in conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project as reflected in the planning code or general plan. Potential conflicts with applicable general plan objectives and policies would continue to be analyzed and considered as part of the review of entitlement applications required for

the revised variant, independent of environmental review under CEQA. They also would be considered by the decision makers during their deliberations on the merits of the revised variant and as part of their actions to approve, modify, or disapprove the revised variant. Through this process, the revised variant, like the draft EIR variant, would be consistent with all land use provisions in the general plan and zoning. Therefore, like the draft EIR variant, the revised variant would result in a less-than-significant impact related to conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to land use.

C.A.3 Cumulative Impacts

The initial study concluded that the draft EIR variant, in combination with the cumulative projects, would not result in cumulative land use impacts, including cumulative impacts related to physical division of a community or a conflict with a land use plan or policy that was adopted for the purpose of avoiding or mitigating an environmental effect. A cumulative land use impact would occur if the revised variant, in combination with the cumulative projects, would result in the physical division of an established community or result in a significant physical environmental impact due to conflicts with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. As with the variant, the revised variant would not physically divide an existing community, and therefore would not combine with cumulative projects to result in a significant physical environmental impact related to dividing an established community.

The cumulative projects would result in an intensification of land uses in the project vicinity. However, they would be infill projects and would be consistent with the City's objectives for increasing the supply of housing and development in the vicinity of major transit stops and therefore would not result in conflicts with land use plans or policies adopted for the purpose of avoiding or mitigating environmental impacts. In addition, the cumulative projects would not combine with the proposed project or variant to alter the land use pattern of the immediate area or physically divide an established community. Therefore, as with the draft EIR variant, the revised variant, in combination with the cumulative projects, would not result in cumulative land use impacts, and the impact would be less than significant. The revised variant would not result in any new or more severe cumulative land use impacts than those identified in the draft EIR.

C.B Population and Housing

The population and housing impacts of the variant have been described and analyzed in initial study Section E.2, Population and Housing, pp. 10 through 17, included as draft EIR Appendix B. The analysis in the initial study concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to inducement of substantial unplanned population growth. Like the draft EIR variant, the revised variant would not displace any residents or housing units because no residential uses or housing units currently exist on the project site. Therefore, housing and population displacement is not applicable and is not addressed further in this section. As described below, population and housing impacts of the revised variant would be similar to those of the draft EIR variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the population and housing.

C.B.1 Population Growth Due to Construction

The magnitude, duration of construction, and construction phasing for the revised variant would be similar to those for the variant analyzed in the draft EIR. Phases 1 through 5 would be the same, and Phase 6 would be extended by three months because of the additional vertical construction required for the tower on Block S3. As with the draft EIR variant, the maximum number of construction workers for the revised variant would range from 349 to 610 workers per day. For the same reasons as discussed for the draft EIR variant in initial study Section E.2, construction workers for the revised variant would likely be drawn from the local and regional construction workforce, such that the revised variant would not induce population growth by attracting a substantial number of construction workers from outside of the region. Therefore, like the draft EIR variant, the revised variant would result in less-than-significant construction-related impacts related to population growth. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to construction-related population growth.

C.B.2 Population Growth Due to Operation

As presented in **RTC Table C-1**, the revised variant would develop 3,491 residential units (411 more units than the 3,080 units proposed under the variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than the draft EIR variant's 7,269 residents). The revised variant would include a 104,000-square-foot decrease in non-retail sales and service uses and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant, which would result in approximately 775 total employees at the project site (483 fewer employees than the 1,258 employees under the draft EIR variant).

RTC Table C-1 Proposed Variant and Revised Variant Residents and Employees

	Generation Rate	Draft EIR Variant	Revised Variant
RESIDENTS			
Units		3,080 units	3,491 units
Residential	2.36 persons/household[a]	**7,269 residents**	**8,239 residents**
EMPLOYEES			
Retail Sales and Service Use	550 gsf/employee	291 employees	291 employees
Non-Retail Sales and Service Use	250 gsf/employee	800 employees	384 employees
Hotel	1,500 gsf/employee	67 employees	0
Institutional	630 gsf/employee	100 employees	100 employees
Total Employees		***1,258 employees***	***775 employees***

SOURCES: U.S. Census Bureau (2021); LEED (2019)

ABBREVIATION: gsf = gross square feet

NOTES:

[a] The 2.36 persons per household rate is based on the U.S. Census Bureau 2016–2020 data.

[b] The employee generation rates are based on Leadership in Energy and Environmental Design (LEED) Reference for Building Design and Construction, Version 4.1, Appendix 2, Table 1, "Default Occupancy Numbers." For retail sales and service use, the general retail rate was used. For non-retail sales and service use, the general office rate was used. For institutional use, the educational (daycare) rate was used.

Although the revised variant's addition of 8,239 new residents on the project site would be substantial for the vicinity, it would not be substantial for the city as a whole, as it would represent approximately 1.4 percent of the projected increase in citywide population growth of 591,359 residents (an increase of 0.2 percent compared to the draft EIR variant's 1.2 percent). Additionally, as with the draft EIR variant, the number of new residents would not be considered a substantial adverse impact in and of itself for the following reasons: the site is located near a major transit corridor and highway (I-280 and 19th Avenue) and is served by existing transportation infrastructure such as streets, buses, and light rail (Muni), and regional transit (SamTrans). Like the draft EIR variant, the revised variant would conform to densities allowed in the general plan and project site's zoning district under the planning code through the general plan amendment and SUD process.

As discussed in initial study Section E.2, p. 15, the project site is located within the 19th Avenue Priority Development Area as specified in Plan Bay Area 2050, prepared by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). ABAG's housing unit projection for the 19th Avenue Priority Development Area is 11,170 in 2040, compared to a 2010 housing unit number of 5,220. The revised variant represents the maximum increase of 3,491 new housing units at the project site and would represent 67 percent of the housing unit growth within the 19th Avenue Priority Development Area during that period (compared to 59 percent for the draft EIR variant). The growth projections in the 19th Avenue Priority Development Area represent planned growth in the city, as Priority Development Areas are locally designated areas within existing communities that have been identified and approved by local cities or counties for future growth.

The revised variant would include a 104,000-square-foot decrease in non-retail sales and service uses and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant, which would result in approximately 775 total employees at the project site, or 483 fewer employees than the 1,258 employees analyzed for the draft EIR variant. Therefore, the number of permanent employees for the revised variant would be smaller than the number analyzed for the draft EIR variant, which concluded that the variant would not result in substantial unplanned employment growth.

Like the draft EIR variant, the revised variant would not include expansion of water or wastewater treatment facilities, but would include the construction of new electric, telecommunication, and sewer lines to serve the project site. However, this infrastructure would not indirectly induce substantial population growth in the project area because proposed infrastructure modifications would be sized to meet project needs and would not enable additional development. Therefore, like the draft EIR variant, the revised variant would not result in any indirect impacts related to population growth as a result of expansion of infrastructure.

For these reasons, the increase in population, housing, and employment attributable to the revised variant would not constitute substantial unplanned growth not planned for in citywide projections, and this impact would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the population growth.

C.B.3 Cumulative Impacts

As discussed in initial study Section E.2, pp. 16 and 17, combined population and housing growth from cumulative projects in the project vicinity would include approximately 18,402 residents and 15,649 residential units by 2050. At full buildout, the revised variant would add 3,491 housing units and a residential population of 8,239 persons to the project site. Therefore, the maximum residential scenario under the

revised variant, in combination with the cumulative projects, would provide approximately 12.8 percent (3,491 + 15,649 = 19,140 units) of the total number of units projected by 2050[1] (compared to 12.5 percent for the draft EIR variant) and would generate approximately 5 percent (8,239 + 18,402 = 26,641) of the projected increase in citywide population growth of 532,595[2] (compared to 4.8 percent for the draft EIR variant).

As discussed above, the revised variant would generate an estimated 775 employees (483 fewer employees than the variant). The revised variant, in combination with the cumulative projects, would generate approximately 2,750 jobs (775 + 1,975), which represents approximately 1.9 percent of the 147,000 new jobs expected for the city by 2050[3] (compared to 2.2 percent for the draft EIR variant).

Conservatively assuming that all employment-related growth attributable to the revised variant and cumulative projects would require housing in the city, the employment growth would account for about 1.3 percent of the projected increase of 213,000 households in the city by 2050[4] (compared to 1.5 percent for the draft EIR variant). As with the draft EIR variant, the increase in population and housing growth attributable to the revised variant, in combination with the cumulative projects, would not result in an increase in employment growth not planned for in citywide projections.

Therefore, as with the draft EIR variant, the increase in population, housing, and employment growth attributable to the revised variant, in combination with the cumulative projects, would not constitute substantial unplanned growth not planned for in citywide projections, and the cumulative impact would be less than significant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to cumulative population and housing.

C.C Archeological Resources, Human Remains, and Tribal Cultural Resources

The impacts of the variant on cultural resources have been described and analyzed in draft EIR initial study Section E.3, Cultural Resources (archeological resources and human remains), pp. 17 through 29, and initial study Section E.4, Tribal Cultural Resources, pp. 30 through 40, included as draft EIR Appendix B. As described below, cultural resources impacts of the revised variant would be the same as or similar to those of the draft EIR variant.

Initial study Section E.3, Cultural Resources, concluded that although no known archeological resources, human remains, or tribal cultural resources are present on the project site, the possibility that these resources are present and could be subject to inadvertent disturbance during construction of the variant cannot be entirely discounted. Implementation of Mitigation Measure M-CR-2, Archeological Monitoring, during construction would address impacts on any previously unrecorded and buried (or otherwise obscured) archeological deposits by requiring the project sponsor and its contractors to adhere to the

[1] The planning department estimates an increase of approximately 150,000 housing units by 2050. San Francisco Planning Department, *San Francisco Housing Element 2022 Update Draft EIR* (2022), p. 4.1-72.
[2] The planning department's projected increase in citywide population growth in 2050 would be 532,595 persons. San Francisco Planning Department, *San Francisco Housing Element 2022 Update Draft EIR* (2022), Table 4.1-5, p. 4.1-63 (873,965 persons in 2020), and Table 4.1-9, p. 4.1-68 (1,406,560 persons in 2050).
[3] The planning department estimates that in 2050, there will be an increase of approximately 147,000 jobs. San Francisco Planning Department, *San Francisco Housing Element 2022 Update Draft EIR* (2022), Table 4.1-8, p. 4.1-67 (771,000 jobs in 2020), and Table 4.1-9, p. 4.1-68 (918,000 jobs in 2050).
[4] Association of Bay Area Governments, *Growth Pattern,* updated January 21, 2021, https://www.planbayarea.org/sites/default/files/FinalBlueprintRelease_December2020_GrowthPattern_Jan2021Update.pdf, accessed June 11, 2022.

appropriate procedures and protocols identified in an archeological monitoring program as outlined below to identify and appropriately treat archeological resources discovered during construction activities.

The revised variant would involve the same construction activities and construction footprint as the draft EIR variant. As with the draft EIR variant, implementation of Mitigation Measure M-CR-2 would be required to address impacts on any previously unknown archeological resources, human remains, or tribal cultural resources discovered during construction activities. Therefore, as with the draft EIR variant, potential construction-related impacts of the revised variant on previously unrecorded archeological resources, human remains, or tribal cultural resources would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to archeological resources.

C.C.1 Cumulative Impacts

The initial study concluded that no cumulative projects would overlap with or be directly adjacent to construction activities at the project site, and thus, the cumulative projects would not have the potential to affect the same unknown archeological resources, human remains, or tribal cultural resources as the variant, should any such resource be identified during construction. The analyses in the initial study concluded that the draft EIR variant would not combine with the cumulative projects to result in a significant cumulative impact on archeological resources, human remains, or tribal cultural resources, and no mitigation measures are required. This same conclusion applies to the revised variant because it would involve the same construction footprint as analyzed in the draft EIR and initial study for the variant. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the cumulative archeological resources impacts.

C.D Greenhouse Gas Emissions

The impacts of the variant related to greenhouse gas (GHG) emissions have been described and analyzed in initial study Section E.8, Greenhouse Gas Emissions, pp. 43 through 57, included as draft EIR Appendix B. As described below, GHG impacts of the revised variant would be the same as or similar to those of the draft EIR variant. Accordingly, the following mitigation measures identified for the draft EIR variant in the initial study would also apply to the revised variant:

- Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure
- Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips

Like the draft EIR variant, the revised variant would increase the intensity of the use of the 43-acre site by redeveloping the approximately 27 acres of surface parking and existing structures surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phase, mixed-use community. Therefore, like the draft EIR variant, the revised variant would contribute to annual long-term increases in GHG emissions as a result of increased vehicle trips (mobile-source emissions) and residential and non-residential operations that would result in an increase in energy use, water use, wastewater treatment, and solid waste disposal. As with the draft EIR variant, construction activities for the revised variant would also result in temporary increases in GHG emissions.

As described in the initial study, CEQA Guidelines section 15064.4 allows lead agencies to rely on a qualitative analysis to describe GHG emissions resulting from a project. In accordance with section 15064.4, the significance of GHG impacts should consider the extent to which the proposed action would increase or reduce GHG emissions, exceed a locally applicable threshold of significance, or comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The CEQA Guidelines also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to reduce GHG emissions (section 15064(h)(3)). In compliance with CEQA Guidelines sections 15064.4 and 15064(h)(3), the GHG analysis provides a qualitative discussion of the degree to which the draft EIR variant would comply with regulations to reduce GHG emissions through the city's 2017 GHG Reduction Strategy. The analysis also evaluates the draft EIR variant against the air district's adopted GHG significance threshold that allows projects which are consistent with a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b) to conclude that the draft EIR variant's GHG impact is less than significant.

The draft EIR variant would be subject to regulations adopted to reduce GHG emissions as identified in the 2017 GHG reduction strategy. Compliance with the applicable regulations would reduce the draft EIR variant's GHG emissions related to transportation, energy efficiency (including all-electric buildings), renewable energy, waste reduction, wood burning, and use of refrigerants. The draft EIR variant would comply with green-building requirements for energy efficiency, such as the City's Green Building Code and CALGreen code requirements. The draft EIR variant's waste-related emissions would be reduced through compliance with the City's Resource Conservation Ordinance. The draft EIR variant would meet planning code section 169 (TDM program) through implementation of Mitigation Measure M-TR-4a that would develop a TDM plan.

The project sponsor is required to comply with these regulations, which have proven effective as the city's GHG emissions have decreased 41 percent in 2019 when compared to 1990 emissions levels, which far exceeds the statewide 2020 GHG reduction target (1990 levels) and achieves the city's local 2025 target (40 percent below 1990 levels) six years in advance of the target year. Furthermore, the city's GHG emission reductions in 2019 also met the statewide 2030 target (40 percent below 1990 levels) more than 10 years in advance of the target year. Therefore, because the draft EIR variant would be subject to regulations adopted to reduce GHG emissions, the draft EIR variant would be consistent with San Francisco's 2017 GHG reduction strategy and would not generate significant GHG emissions nor conflict with state, regional, and local GHG reduction plans and regulations including executive orders S-3-05, B-30-15, B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the clean air plan.

The draft EIR variant also meets the air district's performance based GHG threshold. As demonstrated in the GHG checklist for the draft EIR variant, the draft EIR variant does not include natural gas infrastructure. With implementation of Mitigation Measure M-AQ-1h, Electric Vehicle Charging Infrastructure, the draft EIR variant would include 2019 CALGreen Tier 2 electric vehicle infrastructure standards. Furthermore, as discussed in EIR Section 3.B, Transportation, the draft EIR variant would be located in a vehicle miles traveled (VMT) - efficient area where VMT per capita is more than 15 percent below the regional average. Lastly, as discussed in topic E.19, Energy, the draft EIR variant would not result in a wasteful, inefficient, or unnecessary use of energy.

For these reasons, the initial study concluded that the draft EIR variant's impact related to GHG emissions would be less than significant with mitigation.

The revised variant would have the same overall characteristics and components as the draft EIR variant. As presented in RTC Table 2-1, p. 2-15, the residential square footage and unit count, non-retail sales and service uses, number of vehicle parking spaces, number of bicycle parking spaces, and number of towers are the components of the revised variant that differ from the variant analyzed in the draft EIR. Overall, the revised variant would represent an increase of 411 residential units (334,000 square feet), a 104,000-square-foot decrease in non-retail sales and service uses, and a 100,000-square-foot decrease in hotel uses compared to the variant. As shown in RTC Table 2-2, p. 2-18, construction phasing for the revised variant would also be similar to that for the draft EIR variant. Phases 1 through 5 would be the same, and Phase 6 would be extended by three months because of the additional vertical construction required for the tower on Block S3. The magnitude and duration of construction for the revised variant would be similar to those for the variant analyzed in the draft EIR. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a slightly larger building envelope for Block NW2 and a tower on Block S3, which would change from a midrise building to a tower building. This would require one additional diesel emergency backup generator for operations. The diesel emergency generators would only be used for periodic testing (50 hours per year of non-emergency testing operation consistent with Airborne Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR section 93115), and in emergency situations. San Francisco is not in the PG&E power shut off area during the 2021 and 2022 wildfire season.[5]As for the draft EIR variant, the GHG impacts of the revised variant are evaluated qualitatively pursuant to CEQA Guidelines sections 15064.4 and 15183.5(b) and by evaluating the draft EIR variant against the air district's adopted GHG significance threshold that allows projects which are consistent with a local GHG reduction strategy that meets the criteria of CEQA Guidelines section 15183.5(b) by complying with regulations to reduce GHG emissions through the city's 2017 GHG Reduction Strategy. Additionally, the GHG impacts of the revised variant are evaluated using the air district's performance based GHG threshold.

Although the revised variant could increase construction-related GHG emissions and decrease operational GHG emissions as compared to the draft EIR variant, the GHG impacts of the revised variant are evaluated qualitatively in the same manner as the draft EIR variant. As described in Section 2.E.2, Transportation and Circulation, p. 2.E.2, the revised variant would result in VMT similar to those of the draft EIR variant. As with the draft EIR variant, with implementation of Mitigation Measure M-TR-4a, the revised variant would meet planning code section 169 (TDM program) through implementation of Mitigation Measure M-TR-4a that would develop a TDM plan and would therefore be consistent with the City's 2017 GHG reduction strategy. The revised variant would also be consistent with the GHG reduction goals of Executive Orders S-3-05, B-30-15, and B-55-18, California Global Warming Solutions Act of 2016, AB 1279, the 2022 Scoping Plan, and the 2017 Clean Air Plan, and would not conflict with these plans. Additionally, with implementation of Mitigation Measure M-AQ-1h, the revised variant would meet the air district's performance criteria related to GHGs. For these reasons, similar to the impact for the draft EIR variant, the revised variant's impact related to GHG emissions would be less than significant with mitigation. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to GHG impacts.

C.E Recreation

The impacts of the variant related to recreation have been described and analyzed in initial study Section E.11, Recreation, pp. 58 through 62, included as draft EIR Appendix B. The analysis concluded that

[5] Community Wildfire Safety Program, Public Safety Power Shutoff Progress Map, https://www.pge.com/en_US/residential/outages/public-safety-power-shuttoff/cwsp-progress-map.page/

the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to recreation. As described below, recreation impacts of the revised variant would be similar to those of the draft EIR variant.

The revised variant would have the same overall characteristics and components as the draft EIR variant and would not alter the 6 acres of publicly accessible open space on the project site. The revised variant would also include two ADA pathway improvements through Rolph Nichol Jr. Playground. Similar to the draft EIR variant, the revised variant would increase the intensity of use of the 43-acre site by redeveloping the approximately 27 acres of surface parking and existing structures surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phase, mixed-use community. As presented in the discussion in Section 3.D.2, Population and Housing, p. 2, the revised variant would develop 3,491 residential units (411 more units than under the draft EIR variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than the variant's 7,269 new residents). Although the revised variant's addition of 8,239 new residents on the project site would be substantial for the vicinity, it would not be substantial for the city as a whole, as it would represent approximately 1.4 percent of the projected increase in citywide population growth of 591,359 residents (an increase of 0.2 percent compared to the draft EIR variant's 1.2 percent). The revised variant would include the same amount of new open spaces—parks, plazas, parkways, and landscaped alleys—throughout the project site as the draft EIR variant to offset the increased demand by project residents. Given the proposed network of new publicly accessible open spaces at the project site, Rolph Nicol Jr. Playground ADA pathway improvements, and the new private residential open space as guided by planning code requirements, implementation of the revised variant would increase the availability of a variety of publicly and privately accessible recreational facilities and open spaces on the project site.

As also presented in Section 3.D.2, Population and Housing, p. 2, the revised variant would reduce non-retail sales and service uses by 104,000 square feet and hotel uses by 100,000 square feet compared to the draft EIR variant. Thus, the revised variant would result in approximately 775 total employees at the project site, or 483 fewer employees than under the variant. Fewer employees would likely use existing parks and recreational facilities in the project area with implementation of the revised variant than with the draft EIR variant. In addition, the revised variant would remove the use of existing parks and recreational facilities in the project area by hotel guests that would occur with implementation of the variant. The draft EIR assumed that both variant employees and hotel guests would use the existing parks and recreational facilities and identified a less-than-significant recreation impact for the variant.

As also presented in the preceding discussion of Population and Housing, the magnitude and duration of construction for the revised variant would be similar to those of the variant analyzed in the draft EIR. For the same reasons described in initial study Section E.2, Population and Housing, construction workers for the revised variant would also likely be drawn from the local and regional construction workforce, such that the revised variant would not induce population growth by attracting a substantial number of construction workers from outside of the region. As with the draft EIR variant, the maximum number of construction workers for the revised variant would range from 349 to 610 workers per day. Construction workers for the revised variant may use existing parks and recreational facilities in the project area during breaks or after work shifts, but this use would be limited and would not substantially increase or accelerate the physical deterioration or degradation of existing recreational resources. For these reasons, the revised variant would result in less-than-significant recreation impacts and no mitigation measures are required. The revised

variant would not result in any new or more severe impacts than those identified in the draft EIR related to recreational resources.

C.E.1 Cumulative Impacts

The draft EIR concluded that cumulative recreation impacts for the variant would be less than significant because existing and proposed recreational facilities would be able to accommodate the increased demand for recreational resources generated by the variant and cumulative projects. The draft EIR determined that the City accounted for such growth in January 2019 in its update of the general plan's 2014 Recreation and Open Space Element.

As discussed in the draft EIR, there are 11 parks, open spaces, or other recreational facilities within less than 1 mile of the project site, and the variant would create approximately 6 acres of publicly accessible open space on the project site. The draft EIR also identified that the SFSU Future State 2035 Vision Plan also includes approximately 3.6 acres of public open space to support proposed new student housing units, apartments, and campus employees. With its 970 additional permanent residents, 483 fewer employees, and removal of hotel guest stays, the revised variant would be of similar magnitude to the variant analyzed in the draft EIR. Like the draft EIR variant, the revised variant would create approximately 6 acres of publicly accessible open space on the project site—parks, plazas, parkways, and landscaped alleys that would offset the increased demand by project residents. Similar to the draft EIR variant, the revised variant, in combination with cumulative projects, would not result in a significant cumulative impact on recreational resources. This impact would be less than significant and no mitigation measures are required. The revised variant would not result in any new or more severe impacts than those identified in the draft EIR related to the cumulative recreation impacts.

C.F Public Services

The impacts of the variant on public services are described and analyzed in initial study Section E.13, Public Services, pp. 63 through 68, included as draft EIR Appendix B. The analysis concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts on fire protection and emergency medical services, police protection services, schools, and libraries and no mitigation measures are required. Despite the smaller number of employees on the project site, the revised variant would generate more demand for fire and police protection, schools, and libraries than the variant analyzed in the draft EIR, because of the larger number of permanent residents. However, as described below, impacts of the revised variant on public services would be similar to those of the draft EIR variant.

C.F.1 Fire Protection and Emergency Medical Services

As described in the initial study (p. 63), the San Francisco Fire Department provides fire suppression services and unified emergency medical services and transport, including basic life support and advanced life support services, in the city. The closest fire station is Fire Station 19 at 390 Buckingham Way, immediately west of the project site across Winston Drive. Fire Station 15 is located approximately 1.4 miles east of the project site. The fire department does not have a goal for its personnel-to-residents ratio.

The revised variant would result in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the draft EIR variant) and 775 total employees (483 fewer employees than

under the draft EIR variant), which could increase the demand for fire protection and emergency medical services. However, as with the draft EIR variant, the increase would be incremental, would be funded largely through project-related increases to the city's tax base, and would not be substantial given the overall citywide demand for such services. As discussed in the initial study, fire protection and medical emergency resources are reassessed regularly based on need, to maintain acceptable service performance standards. Like the draft EIR variant, the revised variant would be required to comply with all applicable building and fire codes and would not result in a substantial demand for service and oversight. Therefore, as with the variant, implementation of the revised variant would not require the construction of new fire protection facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.2 Police Protection Services

As described in the initial study (p. 64), the San Francisco Police Department provides police protection in the city. Police department services include responding to calls for police assistance, monitoring and managing traffic, and performing general surveillance duties. The project site is within the police department's Taraval District, and the closest police station is the Taraval Police Station at 2345 24th Avenue, approximately 1 mile north of the project site.

The revised variant would result in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant) and 775 total employees (483 fewer employees than under the draft EIR variant), which could increase the demand for police protection services. However, as with the draft EIR variant, the increased demand for police services related to the revised variant's onsite population of residents, workers, and visitors would be incremental and funded largely through project-related increases to the city's tax base. The increased demand would not be considered substantial, given the relatively low demand for such services at the district level and the ongoing staffing analysis and dynamic resource deployment that occurs citywide. Police department resources are redeployed regularly based on need, to maintain city charter–mandated staffing and acceptable service ratios. Therefore, as with the draft EIR variant, implementation of the revised variant would not require the construction of new police protection facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.3 Schools

As described in the initial study (p. 66), the project site is within the attendance area for Lakeshore Elementary School, located at 220 Middlefield Drive. Other nearby public schools are Feinstein Elementary School (2550 25th Avenue), Sloat Elementary School (50 Darien Way), Aptos Middle School (105 Aptos Avenue), and Lowell High School (1101 Eucalyptus Drive). The San Francisco Unified School District has both attendance-area and citywide schools. As discussed in the initial study, current total enrollment in San Francisco Unified School District schools in October 2021 was 50,566 students, a 6.6 percent decrease in enrollment since before the COVID-19 pandemic (fall 2019). In the broader context, based on demographic trends in San Francisco, the school district does not anticipate large, near-term increases in the number of students. Thus, school district facilities throughout the city are underutilized and the district has more classrooms district-wide than needed.

Implementation of the revised variant would develop 3,491 residential units (411 more units than the variant), resulting in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant). As with the draft EIR variant, some of the new residents associated with the revised variant would be families with school-age children who might attend public (San Francisco Unified School District) schools, while others might attend private schools. The residential uses under both the variant and the revised variant are subject either to the San Francisco Inclusionary Affordable Housing Program (planning code section 415), or to the requirements otherwise specified in the development agreement. The project sponsor would comply with the program by either providing onsite or offsite units or paying an in-lieu fee, as required by the planning code, or as otherwise specified in the development agreement. Using the same conservative approach applied for the draft EIR variant for student generation rates and effects on schools, this analysis assumes that both market-rate and affordable units would generate 0.25 student per unit. Based on this rate, implementing the revised variant would generate approximately 873 students (compared to 770 students under the variant).

Like the draft EIR variant, the revised variant would generate a direct incremental increase in the demand for school services. As discussed in the initial study, the school district is currently not a growth district and, as discussed above, most of its facilities throughout the city are generally underutilized. Therefore, the school district has adequate capacity for the new students generated by the revised variant. Furthermore, with the revised variant as with the variant, the project sponsor would be required to pay a school impact fee based on the construction of net new residential square footage to fund school district facilities and operations. For these reasons, implementation of the revised variant would not result in a substantial unmet demand for school facilities and would not require the construction of new school facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.4 Libraries

As described in the initial study (p. 67), library services are provided by the San Francisco Public Library, which operates a main branch at 100 Larkin Street and 27 other neighborhood branches throughout San Francisco. The library branches nearest to the project site are the Merced Library at 155 Winston Drive (across 19th Avenue from the project site; less than 0.1 mile east) and the Ingleside Library at 1298 Ocean Avenue (1 mile east).

The revised variant would result in approximately 8,239 permanent residents at the project site (970 more permanent residents than under the variant). This population growth generated by the revised variant would result in an increase in library demand; however, this project-generated demand would not be substantial, given the overall citywide demand for library services. The existing library branches near the project site either have been renovated recently or were newly constructed following passage of the Branch Library Improvement Bond in 2000. The bond funds were used for renovations at the Merced Library in 2011 and construction of a new Ingleside Library building in 2009. These resources would satisfy the demand for library services generated by the 8,239 new residents under the revised variant. Demand would also be absorbed by other neighborhood libraries including the Ingleside and Ocean View branches. For these reasons, implementation of the revised variant would not require the construction of new library facilities or the alteration of existing facilities. This impact would be less than significant and no mitigation measures are required.

C.F.5 Cumulative Impacts

As discussed in the initial study (p. 68), the fire and police departments, the school district, the libraries, and other City agencies respond to growth and other changing service needs through ongoing analysis of applicable metrics, such as staffing, capacity, response times, and call volumes. As a result, projected future development would not result in any service gap in citywide police, fire, and emergency medical services. Because there is no shortfall with respect to school or library services, and because reasonably foreseeable projects would be subject to the same school impact fees, there would not be any service gaps in citywide school and library services. For these reasons, the revised variant, like the draft EIR variant, would not combine with cumulative projects in the project vicinity to create a significant cumulative impact on public services. This impact would be less than significant and no mitigation measures are required.

C.G Biological Resources

The impacts of the variant related to biological resources have been described and analyzed in initial study Section E.14, Biological Resources, pp. 68 through 72, included as draft EIR Appendix B. The analysis in the initial study concluded that with compliance with applicable federal, state, and local regulations, the variant would result in less-than-significant project-specific and cumulative impacts on biological resources and no mitigation measures are required.

The revised variant would not involve changes to the project location or the building footprint previously analyzed for the variant. The increase in residential units and decrease in the amount of non-retail sales and service uses and hotel uses under the revised variant would not involve substantial physical changes to the variant analyzed in the initial study, or to the initial study's analysis or conclusions related to biological resources. The revised variant would involve the same area of ground disturbance and a similar amount of construction activity as the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of Block NW2 and a tower on Block S3, which would result in a slightly larger building envelope and change from a midrise building to a tower building, respectively. As discussed in the initial study (p. 71), Blocks NW1, NW2, NW3, S3, and S1 on the project site are within 300 feet of an urban bird refuge (Lake Merced Park) and thus are subject to compliance with the design standards for location-related hazards specified in planning code section 139, which establishes building design standards to reduce avian mortality rates associated with bird strikes. The proposed façades of the buildings on these blocks, including the tower on Block S3 that would be developed under the revised variant, would include no more than 10 percent untreated glazing and minimal lighting, and any lighting would be shielded to prevent uplighting. As with the variant, compliance with planning code section 139 would ensure that the revised variant would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors. During implementation of the revised variant, the project sponsor would be required to comply with the same federal, state, and local regulations identified for the variant in the initial study to ensure that impacts on biological resources would be less than significant. Therefore, the revised variant would result in the same or similar biological resource impacts as analyzed in the initial study for the variant, which would be less than significant.

C.H Geology and Soils

The impacts of the draft EIR variant related to geology and soils have been described and analyzed in initial study Section E.15, Geology and Soils, pp. 73 through 86, included as draft EIR Appendix B. The analysis in the initial study concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to soils, seismicity, or other geological hazards and paleontological resources. Construction of the variant could disturb potentially significant paleontological resources. Mitigation Measure M-GE-6, Inadvertent Discovery of Paleontological Resources during Construction, would ensure that the variant would not result in the destruction of unique paleontological resources. This impact would be less than significant with mitigation.

The increase in residential units and decrease in the amount of non-retail sales and service uses and hotel uses under the revised variant would not involve substantial physical changes to the variant analyzed in the initial study. The revised variant would involve a similar amount of construction activity as the variant because it would not involve changes to the building footprint previously analyzed for the variant. Approximately 26,890 cubic yards of additional excavation would be required to accommodate the Block S3 tower under the revised variant. However, during implementation of the revised variant, as with the variant analyzed in the initial study, the project sponsor would comply with the required seismic safety standards and design review procedures of the California and local building codes, and with the construction site runoff regulations of section 146 of the public works code, to ensure that impacts related to seismic safety, geologic hazards, and erosion would be less than significant. As with the variant, the project sponsor would implement Mitigation Measure M-GE-6 to ensure that the revised variant would not result in impacts related to potential inadvertent discovery of paleontological resources during construction. For these reasons, the revised variant would result in the same project-specific and cumulative impacts related to geology and soils and paleontological resources as the variant, which would be less than significant.

C.I Hydrology and Water Quality

The impacts of the draft EIR variant related to hydrology and water quality have been described and analyzed in initial study Section E.16, Hydrology and Water Quality, pp. 86 through 93, included as draft EIR Appendix B. The analysis in the initial study concluded that the variant would result in less-than-significant project-specific and cumulative impacts related to hydrology and water quality.

The impacts of the revised variant related to hydrology and water quality would be the same as or similar to those of the draft EIR variant. The increase in residential units and decrease in the amount of non-retail sales and service uses and hotel uses under the revised variant would not involve substantial physical changes to the variant analyzed in the initial study. The revised variant would involve the same or a similar amount of construction activity compared to the variant because it would not involve changes to the building footprint previously analyzed for the variant. Approximately 26,890 cubic yards of additional excavation would be required for Block S3 under the revised variant. However, the revised variant, as well as the cumulative projects, would be subject to the same water conservation, stormwater management, and wastewater discharge ordinances and regulations that would be applicable to the variant. As with the draft EIR variant, compliance with these ordinances and regulations would reduce impacts related to hydrology and water quality to less-than-significant levels. For these reasons, the revised variant would result in the same less-than-significant project-specific and cumulative impacts related to hydrology and water quality as the draft EIR variant and no mitigation measures are required.

C.J Hazards and Hazardous Materials

The impacts of the draft EIR variant related to hazards and hazardous materials have been described and analyzed in initial study Section E.17, Hazards and Hazardous Materials, pp. 94 through 103, included as draft EIR Appendix B. The analysis in the initial study concluded that the draft EIR variant would result in less-than-significant project-specific and cumulative impacts related to hazards and hazardous materials through compliance with applicable regulations and provisions of the building and fire codes. For both construction-related and operational impacts, hazardous materials exposure, handling, and usage would be of the same nature and magnitude under the revised variant as under the variant, and the same regulatory requirements for hazardous materials management would apply. Therefore, for the same reasons as discussed for the variant, the impact conclusions for the revised variant would all be less than significant.

C.K Energy

The energy impacts of the draft EIR variant have been described and analyzed in initial study Section E.19, Energy, pp. 104 through 109, included as draft EIR Appendix B. The analysis in the initial study concluded that the variant would result in less-than-significant project-specific and cumulative impacts related to energy. As described below, the energy impacts of the revised variant would be similar to those of the variant.

As presented in RTC Table 2-1, p. 2-15, the residential square footage and unit count, non-retail sales and services uses, number of vehicle parking spaces, and number of bicycle parking spaces are the components of the revised variant that differ from the variant analyzed in the draft EIR. Overall, the revised variant would represent an increase of 411 residential units (334,000 square feet), a 104,000-square-foot decrease in non-retail sales and service uses, and a 100,000-square-foot decrease in hotel uses compared to the draft EIR variant. The building envelopes proposed for the variant would remain the same for the revised variant, with the exception of a slightly larger building envelope for Block NW2 and tower on Block S3. Construction phasing for the revised variant would be similar to that for the variant analyzed in the draft EIR. Phases 1 through 5 would be the same, and Phase 6 would be extended by three months because of the vertical construction required for the tower on Block S3. The following analysis includes updated energy calculations prepared for the revised variant.[6]

C.K.1 Construction

As with the draft EIR variant, consumption of non-renewable energy would occur during the revised variant's construction and operational phases. During construction, energy would be consumed primarily in the form of indirect energy inherent in the production of materials used for construction and the fuel used by construction equipment. Electricity use associated with water used for dust control during the revised variant's approximately eight-year construction period would total approximately 6,338 kilowatt-hours (kWh), less than the 7,209 kWh for the variant, because less grading would be required.[7]

Project construction activities would require the use of fuel-powered equipment and vehicles. Heavy trucks used during construction of the revised variant would consume approximately 439,749 gallons of diesel

[6] Environmental Science Associates, 2023, Stonestown Mall Redevelopment Project Energy Use Calculations Worksheets, May 2023.
[7] This estimate is conservative for several reasons, among them that the estimate may not account for the use of reclaimed water.

(both onsite and offsite), a slight increase over the 437,312 gallons of diesel for the draft EIR variant because of the additional three months of construction. During construction of the revised variant, worker vehicles would consume approximately 843,818 gallons of gasoline, an increase from the 817,197 gallons of gasoline for the variant. As with the variant, construction of the revised variant would be temporary. Compared to other states and the United States as whole, construction projects in California—particularly in the San Francisco Bay Area—use the most-energy-efficient equipment available so that the projects can meet state and local goals for criteria air pollutant and GHG emissions reductions.

Because it would be temporary, the use of these resources during construction of the revised variant would not be wasteful or inefficient. As with the draft EIR variant, impacts related to the use of energy resources during construction of the revised variant would be less than significant and no mitigation measures are required.

C.K.2 Operation

Operational energy consumption would include onsite usage at buildings; electricity for offsite water treatment and distribution; and fuel used by mobile sources. The revised variant's total estimated net electricity consumption for onsite building use and electric vehicle charging—not including onsite energy production, and not accounting for onsite energy conservation measures—would be approximately 36,690,885 kWh/year. This would be a reduction from the 41,410,464 kWh/year used under the variant because there would be less non-retail sales and service and hotel uses. The revised variant would have the same roof area dedicated to photovoltaic (PV) and/or solar thermal hot water systems as the draft EIR variant; therefore, the estimated renewable-energy output for the revised variant's solar PV system would be 1,612,278 kWh/year, the same as with the variant.

Accounting for baseline conditions, estimated net annual electricity use for water supply, treatment, distribution, and wastewater treatment during operation of the revised variant would total approximately 603,781 kWh/year, less than the 700,951 kWh/year for the draft EIR variant. During operation of the revised variant, mobile sources would use approximately 1,452,613 gallons of gasoline and 239,330 gallons of diesel, compared to the 1,375,469 gallons of gasoline and 226,620 gallons of diesel per year for the draft EIR variant.

Like the draft EIR variant, the revised variant would involve no natural gas use, and when considering baseline conditions, the reduction in natural gas usage associated with the revised variant would be the same at 2,239,356 thousand British thermal units per year. In addition, the revised variant would include the same additional operational energy-reducing features as the draft EIR variant:

- Residential buildings that would meet or exceed 75 GreenPoints or Leadership in Energy and Environmental Design (LEED) Silver.
- Non-residential buildings that would be LEED Gold.
- Compliance with the state building code's title 24 energy conservation standards.
- Water-efficient plumbing fixtures.
- Electric vehicle spaces/charging stations.
- Rainwater reuse building systems and green roofs, where feasible.

- A transportation demand management program that would implement measures to reduce vehicle trips and encourage alternative modes of transportation such as walking, biking, and transit. Key strategies in the transportation demand management program could include providing a bikesharing station, bicycle parking to encourage bicycle use, unbundled parking, carshare parking spaces, and other approaches to discourage the use of single-occupant private vehicles.

Like the draft EIR variant, the revised variant would be required to comply with the standards of title 24 of the California Code of Regulations and the requirements of the 2019 San Francisco Green Building Ordinance. As a mixed-use development, the revised variant, like the variant, would be required to be built to achieve LEED for Neighborhood Development certification at a minimum Gold standard, thus minimizing the amount of fuel, water, or energy used. With implementation of the proposed energy conservation measures described above, the revised variant would reduce its total estimated energy consumption and would meet and improve upon the title 24 energy conservation standards.

Like the draft EIR variant, cumulative projects would be required to comply with the City's Green Building Ordinance and the state's title 24 energy efficiency requirements.

For these reasons, the revised variant would result in the same less-than-significant project-specific and cumulative impacts related to energy as the draft EIR variant and no mitigation measures are required.

C.L Mineral Resources, Agriculture and Forestry Resources, and Wildfire

As discussed in Section E.18, Mineral Resources (p. 104); Section E.20, Agriculture and Forestry Resources (pp. 109 to 110); and Section E.21, Wildfire, respectively, in the initial study included as draft EIR Appendix B, the project site does not contain any known mineral resources delineated in the general plan or any other land use plans and does not include mineral resources that are of value to the region and the residents of the state; the project site does not contain agricultural uses or forest land and is not zoned for such uses; the City and County of San Francisco does not contain any state responsibility area land or lands classified as very high fire severity zones; and there are no landslide-prone areas in the immediate vicinity of the project site. Therefore, none of the significance criteria for mineral resources, agriculture and forestry resources, and wildfire are applicable to the draft EIR variant, and these topics were not discussed further in the initial study.

The same conclusions described above for these resource topics apply to the revised variant. The revised variant would not involve changes to the project location or the building footprints previously analyzed for the variant. Therefore, as with the draft EIR variant, none of the significance criteria for mineral resources, agriculture and forestry resources, and wildfire are applicable to the revised variant, and these topics are not discussed further in this chapter.

INTENTIONALLY BLANK

ATTACHMENT D

Revised Variant Transportation Analysis Memorandum

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

January 8, 2024

Project# 22126.013

To: Florentina Craciun, AICP, Senior Environmental Planner
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

From: Kittelson & Associates, Inc.

CC: Kei Zushi, Wade Wietgrefe, San Francisco Planning Department

RE: Stonestown Galleria Revised Variant Impact Analysis Memorandum

INTRODUCTION

Kittelson & Associates, Inc. (Kittelson) prepared this memorandum to evaluate whether updates to the project variant ("revised variant") of the Stonestown Development Project ("proposed project," Case No. 2021-012028ENV) would result in any new or exacerbated transportation-related impacts than were previously identified in Draft Environmental Impact Report (DEIR) (dated December 14, 2022).

Background

The proposed project is located on an approximately 27-acre site in the Lakeshore area in southwest San Francisco. The project sponsor proposes to redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use community.

Overall, the proposed project would include up to 2,930 residential units, up to 160,000 square feet of new retail sales and service use space; up to 200,000 square feet of non-retail sales and service use; up to 100,000 square feet of hotel use; approximately 53,000 square feet of institutional uses; approximately 4,250 parking spaces; approximately 6 acres of open space; and infrastructure changes including street realignment, new sidewalks, and new bike lanes and paths. The project includes one variant ("draft EIR variant"), which would redevelop the 0.8-acre Authentic Church parcel adjacent to the project site and would include approximately 150 additional residential units; 10,000 additional square feet of institutional use; and 200 additional vehicle parking spaces.

REVISED VARIANT DESCRIPTION

The land use program of the revised variant is presented in **Table 1.** The revised variant would be a modification of the draft EIR variant and would:

- Convert the 111 residential units on Parcel E5 to senior units and add 90 senior units to total 201 senior units. The senior units were assumed to provide 1 bedroom per unit (compared to an average of 1.5 bedrooms per unit for the prior unit mix).

- Convert a total of 104,000 square feet of office land use on Parcel E1, S1, and S2 to 100 residential units.
- Convert the hotel on Parcel E3 to 96 residential units.
- Relocate 76 residential units (12,732 sf) from Parcel W3, W4, E1, and E5 to Parcel NW2 and 84 parking spaces from Parcel W3, W4, E1, and E5 to Parcel NW1. Similar to the draft EIR variant, Parcel NW1 and NW2, including the relocated units and parking spaces would be constructed during construction phase 1.The revised variant would include an additional 130,000 square feet of residential space that adds 125 residential units by converting a residential mid-rise building to a tower.
- The revised variant would also add 411 parking spaces and the additional spaces would follow the same by-parcel distribution as the draft EIR variant (presented on p. 2-20 in the DEIR).

The dwelling units, except senior units, would assume the same bedroom-per-unit distribution as the proposed project or draft EIR variant (20% studios, 40% one-bedrooms, 30% two-bedrooms, and 10% three-bedrooms).[1] Project elements not presented, including change in travel lanes, intersection signalization, and bicycle facilities, are unchanged from the draft EIR variant.

Table 1 Land Use Comparison

Project Characteristics	Existing	Represented in DEIR		Proposed Change Revised Variant
		Project	Draft EIR Variant	
Proposed Land Use Program	**Area (Approximate Square Feet)**			
Residential Use	0	Up to 3,100,000	Up to 3,200,000	Up to 3,534,000
Retail Sales and Services Use[1]	760,000 sf mall 13,300 sf vacant theater 15,000 sf commercial building	Up to 160,000 710,000 sf of the existing mall retained 13,300 sf vacant theater, 50,000 CitySports building, and 15,000 sf commercial building to be demolished 81,700 sf net new		
Non-Retail Sales and Service Use[2] (Office)	0	Up to 200,000 net new		Up to 96,000 net new
Hotel	0	Up to 100,000 (up to 200 rooms)		0
Institutional Use[3]	30,000 sf, 30-foot-tall church	Up to 53,000 net new	Up to 63,000 30,000 sf church demolished 33,000 sf net new	Up to 63,000
Proposed Dwelling Units		**Number**	**Number**	**Number**
Studio	0	586	616	658
1-bedroom	0	1,172	1,232	1,517 (including 201 senior units)
2-bedroom	0	879	924	987
3-bedroom	0	293	308	329
Total Dwelling Units	**0**	**2,930**	**3,080**	**3,491**
Total Bedrooms	**0**	**4,395**	**4,620**	**5,136**
Parking	3,400	4,250	4,450	4,861

Source: Brookfield Properties Development, 2023

[1] For example, the number of studio units (658 units) is 20 percent of the number of total non-senior dwelling units [(3,491 total dwelling units – 201 senior units) x 0.2 = 658 studio units].

Note: SF –Square Feet; DU- Dwelling Unit;
1 "Retail Sales and Service Use" is a use category that includes, but not limited to: the sale or provision of personal items such as tobacco and magazines; self-service laundromats and dry cleaning; household goods and service; florists and plant stores; apparel and accessories; antiques, art galleries, art supplies, and framing service; home furnishings, furniture, and appliances; books, stationery, greeting cards, office supplies, copying service, music, and sporting goods; and toys, gifts, and photographic goods and services (planning code section 102).
2 "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102).
3 "Institutional Use" includes childcare facility, community facility, private community facility, hospital, job training, medical cannabis dispensary, religious institution, residential care facility, social service or philanthropic facility, post-secondary educational institution, public facility, school, and trade school (planning code section 102).

Roadway Network Clarifications and Changes

Section 2.B of the Responses to Comments provides refinements and clarifications for roadway features—including street configurations— to the proposed project and revised variant. The changes or clarifications include the following (*italicized* items represent clarification from the draft EIR variant, and <u>underlined</u> items represent changes to the project description):

- **20th** Avenue**:** *The privately owned portion of 20th Avenue between Eucalyptus and Winston Drives would be straightened as presented in the DEIR but would have two to four lanes (predominantly one lane in each direction), rather than the two lanes listed in the DEIR.* <u>The street would range between 25 and 44 feet in width</u>. *Between Eucalyptus Drive and Buckingham Way at the north end of the project site, 20th Avenue would have four travel lanes (two lanes in each direction). Between Buckingham Way and Street A, 20th Avenue would have three travel lanes (one southbound lane and two northbound lanes). The remainder of 20th Avenue between Street A and Buckingham Way at the south end of the site would have two travel lanes (one lane in each direction). The southbound lane south of Winston Drive would be restricted to transit only.*
- **Street A:** *The existing one-way curved Buckingham Way on-ramp to 19th Avenue at the east side of the project site would be abandoned and a new two-way connection (one lane in each direction) to 19th Avenue would be created between Blocks E1 and E3. The westbound approach at 20th Street along Street A would be a right-turn only lane.* <u>Street A would be approximately 22 feet wide instead of 20 feet as presented in the DEIR.</u>
- **Street B:** *A new street with two lanes (one lane in each direction) would extend east from 20th Avenue between Blocks E3 and E4, but would not connect to 19th Avenue. Street B would provide vehicular and pedestrian access to Blocks E3 and E4 and would be approximately 22 feet wide, instead of 26 feet as described in the DEIR.*
- **Buckingham Way:** *Buckingham Way would remain encircling the north, west, and south portions of the site, but would be reduced from four travel lanes (two lanes each direction) to three lanes along the frontage of Block E5 near the intersection with 20th Avenue, instead of two lanes as described in the DEIR. West of Block E5, Buckingham Way would remain three travel lanes Along Block E5. Buckingham Way would include two eastbound lanes approaching the 20th Avenue intersection (one dedicated left turn lane and one dedicated right turn lane) and one westbound lane departing the intersection. Just west of that, the roadway would switch, with two westbound lanes approaching the intersection at the W2 driveway entrance (one through/right lane and one dedicated left turn lane) and one eastbound lane. The west leg of the intersection at the W2 driveway would include one westbound lane departing the intersection and two eastbound lanes approaching the intersection (one through/left lane and one dedicated right turn lane). West of the W2 block, the roadway would transition to two lanes (one in each direction). The roadway width would range between 24 and 35 feet.*
- **Winston Drive:** *Winston Drive between Block S3 and 20th Avenue would have the same changes described in the DEIR and the same lane configuration,* <u>except that the separated westbound right-turn lane would be retained to separate right-turning vehicles from buses stopping westbound along Winston Drive.</u>

These changes apply to the project, draft EIR variant, revised variant, and alternatives contemplated in the DEIR. The design changes would not change the approach, analysis, and findings described in the draft EIR for the variant (or for the project or alternatives).

Trip Generation

Kittelson estimated daily and weekday p.m. peak hour travel demand with person trip rates from the 2019 Transportation Impact Analysis Guidelines ("TIA Guidelines") and the accompanying computational workbook ("SF Workbook"). Senior units were assumed to have the same trip generation rate as one-bedroom units (4.5 trips per bedroom).

Trips were split into travel modes (auto, taxi/TNC, walking, bicycling, and transit) based on mode shares presented in the TIA Guidelines and SF Workbook. **Table 2** and **Table 3** provide revised variant trip generation in comparison with proposed project and with the draft EIR variant, respectively. As shown, the travel demand for the revised variant would result in fewer daily person-trips than for the draft EIR variant and more daily person-trips than for the proposed project. During weekday PM peak hour, the revised variant would generate fewer external vehicles trips than both the proposed project and draft EIR variant.

Table 2 Trip Characteristics by Land Use, Revised Variant Compared to Proposed Project

Land Use Program	Square Footage			Daily Person-Trips			Weekday PM Peak Hour External Vehicle Trips		
	Proposed Project	Revised Variant	*Change (% Change)*	Proposed Project	Revised Variant	*Change (% Change)*	Proposed Project	Revised Variant	*Change (% Change)*
Residential	3,100,000; 4,395 bedrooms	3,534,000; 5,136 bedrooms	*434,000 (14%); 516 bedrooms (12%)*	19,778	23,112	*3,334 (17%)*	383	442	*59 (15%)*
Office	200,000	96,000	*-104,000 (-52%)*	3,140	1,508	*-1,632 (-52%)*	169	83	*-86 (-51%)*
Retail	160,000	160,000	*0 (0%)*	24,000	24,000	*0 (0%)*	480	481	*-1 (-<1%)*
Hotel	100,000; 200 rooms	0	*-100,000 (-100%); -200 rooms (-100%)*	1,680	0	*-1,680 (-100%)*	25	0	*-25 (-100%)*
Institutional [1]	38,000	38,000	*0 (0%)*	5,700	5,700	*0 (0%)*	114	114	*0 (0%)*
Childcare	15,000	15,000	*0 (0%)*	714	714	*0 (0%)*	27	30	*3 (11%)*
Religious Institution	0	10,000	*10,000 (N/A)*	0	76	*76 (N/A)*	0	2	*2 (N/A)*
Total	**3,613,000**	**3,853,000**	***240,000 (7%)***	**55,012**	**55,110**	***98 (+<1%)***	**1,198**	**1,152**	***-46 (-4%)***

Note: N/A = Not Applicable
1 "Institutional Use" includes childcare facility, community facility, private community facility, hospital, job training, medical cannabis dispensary, religious institution, residential care facility, social service or philanthropic facility, post-secondary educational institution, public facility, school, and trade school (planning code section 102).

Table 3 Trip Characteristics by Land Use, Revised Variant Compared to Draft EIR Variant

Land Use Program	Square Footage			Daily Person-Trips			Weekday PM Peak Hour External Vehicle Trips		
	Draft EIR Variant	Revised Variant	*Change (% Change)*	Draft EIR Variant	Revised Variant	*Change (% Change)*	Draft EIR Variant	Revised Variant	*Change (% Change)*
Residential	3,200,000; 4,620 bedrooms	3,534,000; 5,136 bedrooms	*334,000 (10%); 516 bedrooms (11%)*	20,790	23,112	*2,322 (11%)*	405	442	*37 (9%)*
Office	200,000	96,000	*-104,000 (-52%)*	3,140	1,508	*-1,632 (-52%)*	170	83	*-87 (-51%)*
Retail	160,000	160,000	*0 (0%)*	24,000	24,000	*0 (0%)*	482	481	*-1 (-<1%)*
Hotel	100,000; 200 rooms	0	*-100,000 (-100%); -200 rooms (-100%)*	1,680	0	*-1,680 (-100%)*	25	0	*-25 (-100%)*
Institutional [1]	38,000	38,000	*0 (0%)*	5,700	5,700	*0 (0%)*	114	114	*0 (N/A)*
Childcare	15,000	15,000	*0 (0%)*	714	714	*0 (0%)*	28	30	*2 (7%)*
Religious Institution	10,000	10,000	*0 (0%)*	76	76	*0 (0%)*	2	2	*0 (0%)*
Total	**3,723,000**	**3,853,000**	***130,000 (3%)***	**56,100**	**55,110**	***-990 (-2%)***	**1,221**	**1,152**	***-69 (-6%)***

Note: N/A = Not Applicable
1 "Institutional Use" includes childcare facility, community facility, private community facility, hospital, job training, medical cannabis dispensary, religious institution, residential care facility, social service or philanthropic facility, post-secondary educational institution, public facility, school, and trade school (planning code section 102).

Table 4 and **Table 5** compare trip generation by mode of the revised variant with the proposed project and the draft EIR variant, respectively. The revised variant would generate fewer auto and taxi/TNC trips than the proposed project and the draft EIR variant both on a daily basis and during weekday PM peak hour.

Table 4 Trip Generation by Mode, Revised Variant Compared to Proposed Project

Mode	Daily			Weekday PM Peak Hour		
	Proposed Project	Revised Variant	Change (% Change)	Proposed Project	Revised Variant	Change (% Change)
Auto	27,404	26,611	-793 (-3%)	2,480	2,422	-58 (-2%)
Taxi/TNC	1,323	1,284	-39 (-3%)	119	117	-2 (-2%)
Transit	8,793	9,350	557 (6%)	805	855	50 (6%)
Bicycle	1,138	1,233	95 (8%)	106	115	9 (8%)
Walk	16,354	16,632	278 (2%)	1,488	1,526	38 (3%)
Total Trips	**55,012**	**55,110**	**98 (0%)**	**4,998**	**5,035**	**37 (1%)**
Total Vehicle Trips	**17,811**	**16,998**	**-813 (-5%)**	**1,524**	**1,462**	**-62 (-4%)**
Internal Vehicle Trip Reduction Percentage	17%	16%	N/A	21%	21%	N/A
External Vehicle Trips	**14,865**	**14,204**	**-661 (-4%)**	**1,198**	**1,152**	**-46 (-4%)**

Note: N/A = Not Applicable

Table 5 Trip Generation by Mode, Revised Variant Compared to Draft EIR Variant

Mode	Daily			Weekday PM Peak Hour		
	Draft EIR Variant	Revised Variant	Change (% Change)	Draft EIR Variant	Revised Variant	Change (% Change)
Auto	27,838	26,611	-1,227 (-4%)	2,518	2,422	-96 (-4%)
Taxi/TNC	1,360	1,284	-76 (-6%)	122	117	-5 (-4%)
Transit	8,997	9,350	353 (4%)	823	855	32 (4%)
Bicycle	1,183	1,233	50 (4%)	110	115	5 (5%)
Walk	16,722	16,632	-90 (-1%)	1,520	1,526	6 (0%)
Total Trips	**56,100**	**55,110**	**-990 (-2%)**	**5,093**	**5,035**	**-58 (-1%)**
Total Vehicle Trips	**18,110**	**16,998**	**-1,112 (-6%)**	**1,550**	**1,462**	**-88 (-6%)**
Internal Vehicle Trip Reduction Percentage	16%	16%	N/A	21%	21%	N/A
External Vehicle Trips	**15,147**	**14,204**	**-943 (-6%)**	**1,221**	**1,152**	**-69 (-6%)**

Note: N/A = Not Applicable

Internal Trip Capture and External Trips. Because the project would be a mixed-use development, a portion of the generated trips would both begin and end within the development without using the external transportation network. Kittelson used the same trip internalization assumptions to analyze the revised variant as it did with the project and draft EIR variant. See Appendix D.1 of the DEIR for the details of the internalization. The result showed that the revised variant would generate 1,152 external vehicle trips during the weekday p.m. peak period, which would be four percent lower than the proposed project and six percent lower than the draft EIR variant (see **Table 6**, which provides vehicle trip estimates for each scenario). The reduction is attributable to a few factors:

- On a per square footage basis, land uses generate different amounts of daily and p.m. peak period trips. For example, approximately 1,000 square feet of hotel, office, and residential uses generates 16.8, 15.7, and 6.8 person trips per day, respectively, according to the TIA Guidelines. Therefore, the

residential land uses proposed under the revised variant would generate fewer trips on a per square foot basis than the hotel and office land uses proposed under the draft EIR variant and replaced by residential land uses with the revised variant. **Table 3** shows that over three times the change in residential square footage compared to office (334,000 added compared to 104,000 removed) results in about just 40 percent more trip change (2,322 daily person trips added compared to 1,632 removed).

- Residential land use in the project site vicinity has a lower automobile mode split than office and hotel use. The mode split was obtained directly from the TIA Guidelines, which is calculated based on the project site's transportation analysis zone (TAZ, 918), neighborhood (Sunset district), and place type (3, urban low density).
    - In this geography, percentage of person trips traveling by automobile is as follows:
        - Residential: 39%
        - Office: 84%
        - Hotel: 54%

The revised variant would generate 55,110 daily person trips and 5,035 person trips during the weekday p.m. peak hour, which would be higher than the proposed project but lower than the draft EIR variant. The comparison is presented in **Table 6.** A step-by-step approach for trip generation, mode split, and internal trip capture are detailed in Appendix D.1, Travel Demand Memorandum.

In/Out Splits. This study assumed the same in/out split for the revised variant as for the draft EIR variant. Theoretically, the in/out split would change, given the change in the land use program, specifically, the conversion from office and hotel to residential land use. These changes would result in some minor differences. During the weekday p.m. peak period, 75 percent of residential trips would be inbound while 17 percent of office trips and 58 percent of hotel trips would be inbound. Applying these in/out percentages to the trip changes shown in **Table 3**, the net change in trips by direction would be four additional inbound trips and 72 fewer outbound trips—a negligible increase in the inbound direction and a 6 percent decrease in the outbound direction. Given a lack of any substantial increase in inbound or outbound trips, revising the inbound/outbound splits would not result in any new impact determinations compared to the conclusions reached in the DEIR.

Table 6 Vehicle Trip Estimates

Trip Total	Represented in DEIR				Proposed Change	
	Project		Draft EIR Variant		Revised Variant	
	Daily	P.M. Peak	Daily	P.M. Peak	Daily	P.M. Peak
Total Person Trips	55,012	4,998	56,100	5,093	55,110	5,035
Total Vehicle Trips[1]	17,811	1,524	18,110	1,550	16,998	1,462
Internal Vehicle Trip Reduction Percentage	17%	21%	16%	21%	16%	21%
External Vehicle Trips	14,865	1,198	15,147	1,221	14,204	1,152
Revised Variant Raw Change (Percent Change) from Project	N/A	N/A	N/A	N/A	-661 (-4%)	-46 (-4%)
Revised Variant Raw Change (Percent Change) from Variant	N/A	N/A	N/A	N/A	-943 (-6%)	-69 (-6%)

Source: Kittelson & Associates, Inc. 2022. SF Workbook, 2018. ITE, 11th edition 2021. NCHRP 8-51 Internal Trip Capture Estimation Tool
Notes:
1. Vehicle trips include auto and taxi/TNC.

Trip Distribution by Parcel and construction phase. External vehicle trips are assigned to each parcel according to the proportional share of parking spaces located on the parcel. As 84 parking spaces from Parcel W3, W4, E1, and E5 would be relocated to Parcel NW1 and would be constructed in phase 1 under the revised variant (instead of phases 2 and 3 in the draft EIR variant), construction phase 1 would have a higher distribution of PM peak hour external vehicle trips compared to the draft EIR variant.

The total external vehicle trips are provided on a per-parcel and per-construction phase basis in **Table 7** and **Table 8** and. In the last row of **Table 8**, the total is incremented by taxi/TNC trip estimate to account for a driver's extra trip (leaving the site after a drop-off event or arriving at the site before a pick-up event).

Table 7 Weekday P.M. Peak Hour External Vehicle Trip Distribution by Construction Phase (Auto)

Construction Phase	PM Peak Hour External Vehicle Trips		
	In	Out	Total
1	64	21	85
1B	105	130	235
2	98	55	153
3	99	84	183
4	125	92	217
5	103	76	179
6	53	47	100
Total	**647**	**505**	**1,152**

Note: Taxi/TNC extra trips are not included in this table.

Table 8 Weekday P.M. Peak Hour External Vehicle Trip Distribution by Parcel (Auto and Taxi/TNC)

Construction Phase	Parcel	Residential		Office		Retail		Hotel		Institutional		Childcare		Religious Institution		Total	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
3	**E1**	26	9	2	12	39	43	0	0	9	10	2	3	0	0	78	77
4	**E2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	**E3**	30	10	1	5	17	18	0	0	4	4	1	1	0	0	53	38
4	**E4**	38	12	2	7	24	27	0	0	6	6	2	2	0	0	72	54
3	**E5**	21	7	0	0	0	0	0	0	0	0	0	0	0	0	21	7
4	**E6**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	**E7**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	**W1**	16	5	0	0	0	0	0	0	0	0	0	0	0	0	16	5
1B	**W2**	0	0	5	23	76	82	0	0	18	19	5	5	1	1	105	130
2	**W3**	32	11	1	5	19	20	0	0	5	5	1	1	0	0	58	42
2	**W4**	24	8	0	0	0	0	0	0	0	0	0	0	0	0	24	8
5	**S1**	13	4	0	0	0	0	0	0	0	0	0	0	0	0	13	4
5	**S2**	45	15	2	10	33	36	0	0	8	9	2	2	0	0	90	72
6	**S3**	23	8	1	7	23	24	0	0	5	6	1	2	0	0	53	47
1	**NW1**	57	19	0	0	0	0	0	0	0	0	0	0	0	0	57	19
1	**NW2**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	**NW3**	7	2	0	0	0	0	0	0	0	0	0	0	0	0	7	2
	Total	**332**	**110**	**14**	**69**	**231**	**250**	**0**	**0**	**55**	**59**	**14**	**16**	**1**	**1**	**647**	**505**
	Taxi/TNC extra trip	26	9	0	1	7	7	0	0	1	2	1	1	0	0	35	20
	Total (for Assignment)	**358**	**119**	**14**	**70**	**238**	**257**	**0**	**0**	**56**	**61**	**15**	**17**	**1**	**1**	**682**	**525**

Note: Total may not sum due to rounding. Taxi/TNC drivers' "extra" trips (leaving the site after a drop-off event or arriving at the site before a pick-up event) will be used for trip assignment.

TRANSPORTATION-RELATED IMPACTS

Baseline

The DEIR analyzed the potential environmental effects of implementing the proposed project or draft EIR variant under a baseline scenario as discussed under section 3.B.1, p.3.B-49 of the DEIR.

Construction

Project and Draft EIR Variant

Project construction would require coordination and review with San Francisco Public Works and the San Francisco Municipal Transportation Agency in accordance with city regulations to avoid transportation-related construction impacts. However, some portions of proposed project or draft EIR variant are located on private right-of-way and would not be subject to city requirements. Thus, construction activities within the private right-of-way could potentially cause substantial interference with emergency access or conflicts with people walking, bicycling, or driving or public transit operations to result in a significant impact. Implementation of Mitigation Measure M-TR-1: Construction Coordination Plan would be required to reduce the impact to less than significant.

Revised Variant

The revised variant would have similar construction activities and phasing as the proposed project or draft EIR variant, but:

- 76 residential units (12,732 sf) and 84 parking spaces would be relocated to NW parcels and would be constructed in phase 1 (instead of phases 2 and 3 in the draft EIR variant). Therefore, the excavation duration of phase 1 would be 24% longer while excavation duration of phase 2 and phase 3 would be shorter. The overall construction duration of those phases would not change.
- The sixth and final construction phase would be three months longer than the proposed project or draft EIR variant (39 months instead of 36).

Even with the extended excavation in the first phase and the longer sixth phase, the construction duration, intensity, and number of worker and truck trips accessing the project site would not change significantly to affect the conclusion in the DEIR.

Therefore, the construction impact would remain less than significant with Mitigation Measure M-TR-1.

Transit Delay

Project

Transit delay is associated with the project-generated peak hour vehicle traffic, as traffic congestion associated with increases in traffic would slow transit vehicles. Additionally, transit vehicles at bus stops would need to wait longer to pull out and reenter the traffic flow. As discussed under Impact TR-4, p. 3B-65

of the DEIR, the proposed project would not result in a significant impact with respect to transit delay under existing plus project conditions.

Draft EIR Variant

The draft EIR variant, which would contribute more vehicle trips during the weekday PM peak hour than the proposed project, would significantly delay the 57 Parkmerced inbound route and result in significant and unavoidable impacts with implementation of Mitigation Measures M-TR-4a: Reduce Project Vehicle Trips and M-TR-4b: Transit Travel Time Reduction Measure.

Revised Variant

The revised variant would result in approximately four percent fewer p.m. peak vehicle trips than the proposed project (six percent fewer than the Draft EIR variant). That trip reduction would result in approximately four percent lower contribution to all vehicle movements through project study intersections compared to the proposed project (with the reduction evenly distributed).

In addition, the revised variant would also relocate 84 parking spaces from Parcel W3, W4, E1, and E5 to Parcel NW1. The parking relocation would reduce the significant and unavoidable transit delay impact to the 57 Parkmerced inbound line identified under the draft EIR variant. The location of vehicle parking governs the onsite origin and destination of vehicle trips and the associated routes drivers take to and from the project site. As presented under Section 3.B.4 and in Appendix D.2, Transit Delay Analysis Memorandum, project vehicle trips traveling northbound along 20th Avenue would increase the traffic demand at already-congested intersections. Relocating parking away and thus encouraging travel routes that could avoid these intersections and roadways could help reduce additional demand and redistribute vehicle trip routes away from locations where they would contribute most to the transit delay identified. As shown in **Table 9**, the revised variant would result in a reduced additional delay from 4.8 minutes to 2.8 minutes to the 57 Parkmerced inbound line compared to the draft EIR variant. The level of additional delay of all transit lines analyzed would be below than the significant delay threshold, which is 4.0 minutes for the Muni line.

Therefore, the revised variant would result in less-than-significant project-level transit delay impacts.

Table 9 Project-Level Transit Delay Analysis, Revised Variant Compared to Proposed Project and Draft EIR Variant

Route	Direction	Headway	Half Headway (minutes)	Delay Threshold (minutes)	Delay (minutes)		
					Existing plus Project	**Draft EIR Variant**	**Revised Variant**
28 19th Avenue	IB	10	5	4.0	0.5	0.6	0.5
	OB	10	5	4.0	2.1	2.1	1.3
28R 19th Avenue Rapid	IB	10	5	4.0	0.5	0.5	0.5
	OB	10	5	4.0	1.2	1.2	0.4
57 Parkmerced	IB	20	10	4.0	3.9	**4.8**	2.8
	OB	20	10	4.0	2.5	3.0	1.2
58 Lake Merced	IB	30	15	4.0	1.1	1.4	1.0
	OB	30	15	4.0	0.4	0.5	0.4
28 + 28R Combined	NB	5	2.5	2.5	0.5	0.6	0.5
	SB	5	2.5	2.5	2.1	2.1	1.3
122 SamTrans	NB	20	10	4	1.3	1.5	1.0
	SB	20	10	4	0.8	0.8	0.8

ABBREVIATIONS:

IB = inbound; OB = outbound; NB = northbound; SB = southbound; WB = westbound; EB = eastbound

Note: **Bold text** indicates additional delay above the identified significance threshold.

Loading Demand

Project and Draft EIR Variant

Due to the absence of localized loading supply information, estimated demand cannot be compared with proposed loading supply for each parcel. Unmet demand could result in secondary effects to public transit buses or to people walking, biking, or driving, such as blocking, creating queues, and/or conflicts at sidewalks, crosswalks, Muni routes, and bike facilities. Therefore, it was conservatively assumed the proposed project or draft EIR variant would have significant loading impacts. Mitigation Measure M-TR-6: Develop a Loading and Operations Plan (DLOP) would be required to reduce the associated secondary effects to less than significant.

Revised Variant

As with the proposed project or draft EIR variant, localized loading supply information is not available, a loading deficit could occur, and the revised variant would have significant loading impacts. Mitigation Measure M-TR-6 would be required to reduce the potential significant impacts of both freight and commercial loading and passenger loading.

The impact would be less than significant with mitigation.

Cumulative Impact

The DEIR assessed whether the proposed project or draft EIR variant, in conjunction with overall citywide growth and other cumulative projects, would significantly affect the transportation network.

Construction

Project and Draft EIR Variant

Some portions of the proposed project or draft EIR variant are within public right-of-way and would be subject to city regulations to avoid transportation-related construction impacts. However, the portions that are located in private right-of-way would not be subject to those regulations. Thus, construction activities within the private right-of-way could potentially cause interference with emergency access or substantial conflicts with people walking, bicycling, or driving or public transit operations to result in a significant impact. Therefore, implementation of Mitigation Measure M-TR-1 would be required to reduce the cumulative construction impact to less than significant with mitigation.

Revised Variant

The revised variant would have similar construction activities and phasing as the proposed project or draft EIR variant, but:

- 76 residential units (12,732 sf) and 84 parking spaces would be relocated to NW parcels and would be constructed in phase 1 (instead of phases 2 and 3 in the draft EIR variant). Therefore, the excavation duration of phase 1 would be 24% longer while excavation duration of phase 2 and phase 3 would be shorter. The overall construction duration of those phases would not change.
- The sixth and final construction phase would be three months longer than the proposed project or draft EIR variant (39 months instead of 36).

Even with the extended excavation in the first phase and the longer sixth phase, the construction duration, intensity, and number of worker and truck trips accessing the project site would not change significantly.

Therefore, the construction impact would remain less than significant with Mitigation Measure M-TR-1.

Transit Delay

Project and Draft EIR Variant

As discussed under Impact C-TR-4, p. 3B-78 of the DEIR, the project or draft EIR variant, in combination with cumulative projects, would result in a substantial cumulative delay of both Muni and regional transit service:

- Muni 57 Parkmerced (inbound and outbound)
- Muni 28 19th Avenue and 28R 19th Avenue Rapid combined (southbound)
- SamTrans Route 122 (northbound)

The project or draft EIR variant would both contribute considerably to the substantial delay. The impact would be significant and unavoidable with the implementation of Mitigation Measures- M-TR-4a, M-TR-4b, and M-C-TR-3: Signal Coordination and Transit Signal Priority along 19th Avenue.

Revised Variant

As discussed above, the revised variant would generate four percent fewer external peak hour vehicle trips than the proposed project and the relocation of parking spaces would redistribute vehicle trips away from the congested intersections along northbound 20th Avenue. However, this reduction would not reduce the substantial cumulative transit delay to the Muni and regional transit service identified in the DEIR. The revised variant would still contribute considerably to the substantial delay. The revised variant would also be subject to Mitigation Measures M-TR-4a, M-TR-4b, and M-C-TR-3, but those measures would not reduce the cumulative transit delay impacts to less-than-significant levels for the same reasons as described in the DEIR.

Loading Demand

Project and Draft EIR Variant

Due to the absence of localized loading supply information, a loading deficit may occur in cumulative conditions. Therefore, the analysis conservatively assumed the proposed project or draft EIR variant, in combination with cumulative projects, would have significant loading impacts, such as blocking bus routes and/or bicycle facilities. Implementation of Mitigation Measure M-TR-6 would be required to reduce the impact to less than significant with mitigation.

Revised Variant

As with the proposed project or draft EIR variant, localized loading supply information is not available, a loading deficit may occur in cumulative conditions, and a significant cumulative loading impact may occur. Mitigation Measure M-TR-6 would be required to reduce the impacts of potential loading deficit.

The cumulative impact would be less than significant with mitigation.

Other Impact Categories

The DEIR evaluated the proposed project and variant in baseline and in cumulative conditions with respect to the following other transportation-related impact categories and found less-than-significant impacts. For these categories, the revised variant would represent the same transportation- and circulation-related features and would have the same impact determination:

- **Potentially Hazardous Conditions for People Walking, Bicycling, Driving, or Public Transit Operations:**
  - The proposed site access and roadway features are the same for the revised variant as analyzed in the DEIR, except that at Winston Drive/20th Avenue intersection, the existing separated westbound right-turn lane would be retained. As a result, the geometric conditions will match the existing conditions on this east leg (westbound approach) to the intersection, and will allow for buses to load in the separated lane and the main (through) lane along the north side of Winston Drive. This lane configuration is not expected to create potentially hazardous conditions for people walking or bicycling for the following reasons:
    - The retained channelized right-turn lane would separate right-turning vehicles from buses stopping westbound along Winston Drive, which would minimize the westbound queue length at Winston Drive/20th Avenue. The DEIR identified the 95th percentile westbound queue length during the weekday p.m. peak hour would

be close to the queue storage capacity. With the channelized right turn and fewer peak hour external vehicle trips, the revised variant is not expected to cause additional spillover into the Winston Drive/19th Avenue intersection.
        - The proposed project or revised variant would not introduce design features that would block sightlines or increase vehicle speeds.
        - Drivers turning right at the intersection would need to wait until there is a sufficient gap in the flow of people walking to clear their vehicles.
    - The land use changes specific to the revised variant and other refinements and clarifications described in the Roadway Network Clarifications and Changes section do not affect the analysis described in the DEIR and therefore do not represent any distinctions that would affect this conclusion from the DEIR.
- **Accessibility of People Walking or Bicycling to and from the Project Site, and Adjoining Areas, and Emergency Access:**
    - As the revised variant would provide the same project access and roadway features as for the proposed project or draft EIR variant, the impact on walking and bicycling accessibility and emergency access would be the same as concluded in the DEIR.
- **Vehicle Miles Traveled and Induced Automobile Travel:**
    - The revised variant would provide more building area and parking spaces compared to the draft EIR variant, but would not have a significant impact on VMT and induced automobile travel because:
        - The project site is in TAZ 918 where existing VMT is more than 15 percent below regional average for residential, office, and retail land uses. As the revised variant does not add any new types of land uses, the revised variant would also screen out from further VMT analysis.
        - The revised variant would provide 130,000 more square feet of building area than the Draft EIR variant, which results in approximately 3,853,000 new square footage and 4,613,000 total square footage. The floor area ratio of 2.59, which is greater than the 0.75 threshold.
        - The revised variant would add 411 parking spaces on top of the 1,050 net new spaces provided in the draft EIR variant (1,461 net new parking spaces and 4,861 total). With 3,794,700 net new square footage[2] (4,613,000 total square footage), the marginal contribution rate would be 0.4 parking spaces per 1,000 square feet. In total, the revised variant would have 1.1 parking spaces per 1,000 square feet, which is 3.1 or 74% lower than the existing parking ratio of 4.2 parking spaces per 1,000 square feet, which would not substantially induce additional VMT.
    - Additionally, same with the draft EIR variant, the revised variant would also include roadway features that qualify as Active Transportation, Rightsizing, and Transit Projects and Other Minor Transportation Projects and would fit within the general types of projects that would not substantially induce automobile travel.
    - For the reasons described above, the impact on VMT and induced automobile travel would be the same as concluded in the DEIR and would be less than significant.

Conclusion

The revised variant would result in a change in the land use program. The revised variant land use program changes would generate fewer vehicle trips than the proposed project or draft EIR variant daily and during the weekday p.m. peak hour. The transportation network changes for the revised variant are similar to those under the proposed project or draft EIR variant, with no change on the impact analysis and findings.

[2] Net new square footage is calculated by subtracting demolished area from new building area.

As a result:

- Project-level transit delay impact would remain less than significant as with the proposed project.
- Cumulative transit delay impacts would remain significant and unavoidable with mitigation.
- Project-level and cumulative transportation-related construction impacts would remain less than significant with mitigation, as with the proposed project or draft EIR variant.
- Project-level and cumulative freight and commercial loading and passenger demand impacts would remain less than significant with mitigation as with the proposed project or draft EIR variant.

The remaining transportation-related impact categories would remain less than significant.

ATTACHMENT E

Revised Variant Air Quality and Health Risk Assessment Results

RAMBOLL

ENVIRONMENT
& HEALTH

MEMO

Project name	**Stonestown Redevelopment Project, San Francisco**
Project no.	**1690018084**
To	**San Francisco Planning Department** **San Francisco, California**
From	**Michael Keinath, PE** **Sarah Manzano**
Subject	**Stonestown Redevelopment Variant Update Air Quality and Health Risk Assessment Results**

March 22, 2024

Ramboll
250 Montgomery Street
Suite 1200
San Francisco, CA 94104
USA

T +1 415 796 1950
www.ramboll.com

1 Introduction and Variant Updates

Ramboll Americas Engineering Solutions, Inc. (Ramboll) updated our California Environmental Quality Act (CEQA) air quality analysis of criteria air pollutants and precursors and local air quality and health impacts associated with the construction and operation of the Stonestown Development Project in San Francisco (referred to hereafter as "Proposed Project" or "Project") to incorporate program updates to the Project Variant land use plan ("Revised Variant") as a response to comments received on the Project. No updates were proposed for the Project.

The updated analysis discussed in this memorandum follows the same methodology and assumptions as described in the "CEQA Air Quality and Health Risk Assessment Methodology" (Ramboll, May 2022, referred to hereafter as "Methodology Report") and the Air Quality Technical Memorandum (Ramboll, November 2022, referred to hereafter as "AQTM"), except where explicitly noted, and incorporates program updates for the Revised Variant. This technical memorandum presents a summary of the methodology, noting deviations from the Methodology Report or AQTM, and provides updated results for air quality and health impact analysis of the construction and operation of the proposed Project Variant presented in the Draft Environmental Impact Report (EIR). The tables and figures shown in the attachment of this memorandum have the same table numbers as those in the AQTM for ease of reference to the AQTM. However, only information for the Revised Variant is shown in the tables and the EIR Project is excluded as the EIR Project remains unchanged. Values that are different from the analysis in the AQTM are shown in bold in the attached tables. This analysis has been performed to support the CEQA documentation at the request of the San Francisco Planning Department.

Ramboll analyzed proposed land use changes for the Revised Variant. Compared to the Variant analyzed in the AQTM, the Revised Variant would change the following land use characteristics, by phase:

- Phase 1:
  - Increase of 76 residential units and 12,432 square feet of residential space;
  - Add 84 residential parking spaces; and

- Construction of two new Americans with Disabilities Act (ADA) pathway improvements through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive and landscaping.

- Shared Across Phases 2 and 3:
  - A net reduction of 76 residential units and 12,432 square feet of residential space, along with the removal of 84 residential parking spaces. [1]
- Phase 3:
  - A net increase of 124 residential units;[2] and
  - A reduction of 35,000 square feet of office land use.
- Phase 4:
  - Convert the hotel to 96 residential units.
- Phase 5:
  - Convert a total of 69,000 square feet of office land use to 66 residential units.
- Phase 6:
  - Add 130,000 square feet of residential space that adds 125 residential units by including five towers instead of four; and
  - Add an emergency generator to Building S3.
- Add additional parking to all phases to account for the additional residential units.

In summary, compared to the AQTM, the Revised Variant represents an increase of 411 residential units, decrease in 104,000 square feet of non-retail sales and service use, and the removal of 100,000 square feet of hotel, for a total increase of 130,000 square feet of new building area. The updated land use for the Revised Variant is shown in **Table A** below and **Table 1** attached.

[1] These reductions would occur across Phases 2 and 3, although the specific distribution between Phase 2 and Phase 3 will be determined as building plans evolve. For the purposes of this analysis, it is assumed that 6,841 square feet and 40 residential units were allocated from Phase 2, and 5,591 square feet and 36 residential units from Phase 3. However, operational emissions are anticipated to be similar, regardless of any different allocation between the two phases.

[2] The net increase involves converting 111 residential units to senior units and adding 90 senior units to a total of 201 senior units. The senior units were assumed to provide 1 bedroom per unit (compared to an average of 1.5 bedrooms per unit for the prior unit mix). This resulted in updated trip information provided by the transportation engineer, which does not affect the rest of the emissions analysis, as senior units are treated the same as regular residential units. This net increase of 124 units does not take into account the reduction in units associated with the reduction of units shared across Phases 2 and 3. Therefore, Phase 3 would have less of an increase in dwelling units than 124 units. For the purposes of this analysis, we assume an increase of 88 units (124 units – 36 units).

Table A: Land Use and Construction Phasing

Land Use Type	CalEEMod Land Use Category	Estimated Land Use Quantity							
		Units	Phase 1[B]	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Total
Residential	Apartments Mid Rise	DU	549	791	553	659	624	315	3,491
Retail Sales and Services	Regional Shopping Center	ksf	10	36	20	58	36	0	160
Non-Retail Sales and Service	General Office Building	ksf	0	0	24	47	25	0	96
Hotel	Hotel	rooms	0	0	0	0	0	0	0
Institutional	General Office Building	ksf	13	0	12	38	0	0	63
Parks, Plazas, and Open Space	City Park	acres	1.0	1.4	1.0	0.70	1.0	0.90	6.0
Structured Parking[A]	Enclosed Parking with Elevator	spaces	1,259	712	748	974	762	406	4,861

Source: Table 1 and Table 20 of this analysis and the AQTM
Note:
A. Parking spaces include those proposed for the Revised Variant and the 250 existing parking spaces, with specific allocations for each phase, as all parking spaces need to be included in this analysis.
B. Phase 1 would also include construction of two new ADA pathway improvements through Rolph Nichol Jr. Playground to connect Greenway Park West to Eucalyptus Drive and landscaping in the park.

The updated construction schedule and phasing for the Revised Variant are shown in **Figure 1b**. Construction activity analyzed in the AQTM for the Project Variant would change for Phase 6 to account for the conversion from a mid-rise building to a residential tower. The Project Sponsor confirmed the construction schedule for all other phases would remain the same as analyzed in the AQTM. The conversion of square footage from office to residential and conversion to senior units is not expected to change the construction schedule or equipment use. The increase in residential units in Phase 1 may slightly increase building construction, but this would be negligible because this equates to a 2.5% increase in square footage across the phase. However, according to the Project Sponsor, the increase in parking would increase excavation activity by 24%, which reflects the increase in number of underground residential parking spaces. As a result, construction activity in Phases 2 and 3 would be reduced by a commensurate amount of construction hours due to the reduction in parking in these phases. However, the construction duration would not change for these three phases. The landscaping and construction of the accessible concrete pathways through Rolph Nichol Jr. Playground would largely be completed by electric or natural gas equipment for landscaping and diesel equipment for the construction of the concrete paths. This diesel activity is included in the Phase 1 construction and schedule.

Construction during Phase 6 would be extended by approximately three months for the Revised Variant. The updated construction schedule for the Revised Variant is shown in **Table 2**. The table shows the numbers of work days per construction subphase for each construction phase. It also shows the amount of demolished area, which includes building demolition and parking area. Compared to the Project Variant analyzed in the AQTM, the Demolition and Grading, Shoring, Excavation subphases of

Phase 6 of the Revised Variant would be shorter, the Phase 6 Building Construction subphase would increase by 2 months, the Phase 6 Paving and Architectural Coating subphases would increase by a few days, and the sequencing would slightly change, overall resulting in extending the Phase 6 construction by three months.

Table 3 shows the updated construction equipment usage associated with the Revised Variant. The Revised Variant would increase the building height of S3 in Phase 6; therefore, an electric tower crane would be used instead of the diesel crane that was analyzed in Phase 6 for the Project Variant in the AQTM. The Revised Variant also proposes more excavation and less grading for Phase 6.[3] All other changes to construction equipment usage in Phase 6 are a result of changes in schedule duration discussed above. Excavation activity in Phase 1 is also expected to increase by 24% compared to the Draft EIR Variant due to the additional parking spaces and a commensurate amount of construction activity is expected to decrease in Phases 2 and 3. These changes are reflected in the updated utilization in Phases 1-3 in **Table 3**.

2 Methodology and Results

The results presented in this memorandum used the same methods described in the Methodology Report and AQTM. Deviations due to updated data for the Revised Variant are discussed below. Unless explicitly stated, assumptions and calculations are the same as the AQTM. Tables numbers correspond to the related table in the AQTM. If a table is not presented here, it is either not relevant to the Revised Variant or remains the same as the corresponding table in the AQTM.

2.1 Construction CAP Emissions

2.1.1 Updated Construction Information and Emissions

Construction emissions were calculated using the same methodologies as the AQTM with the updated construction information provided by the Project Sponsor.

The updated construction schedule for the Revised Variant is shown in **Table 2**, with table numbers corresponding to the related table in the AQTM. As discussed above, all the schedule updates would occur in Phase 6.

Table 3 shows the updated construction equipment activity for each phase of the Revised Variant, as provided by the Project Sponsor. As mentioned above, **Table 3** shows a 24% increase in excavation activities in Phase 1, due to the increase in underground parking. Meanwhile, the same volume of excavation activities, evenly distributed between Phases 2 and 3, would decrease. In addition, graders are removed, and cranes are electrified in Phase 6.

Table 4a shows the emissions from the on-site operation of the dump and concrete construction trucks for the uncontrolled scenario using fleet average emissions from EMFAC2021. **Table 4b** shows the onsite truck emissions for a controlled scenario where only trucks with a model year 2018 or newer visit the site. Compared to the AQTM, the onsite truck emissions increased in the Phase 1 Grading, Shoring, Excavating subphase due to the increased excavation to account for the increase in parking, while emissions for Phases 2 and 3 decreased for the corresponding subphase. Additionally, onsite truck emissions slightly changed in Phase 6 because the updates in the construction schedule would change the calculated truck run and idle hours, trips, and vehicle-miles traveled (VMT) for each year. Additional hauling trips are added to Phase 6 for the additional building area and **Table 5** shows the updated on-road emissions for the Revised Variant.

[3] Note that less grading is generally needed when digging a bigger hole because the larger size of the hole allows for a more gradual slope. This is consistent with the updated construction equipment that shows that graders were removed from grading, shoring, excavating subphase in Phase 6.

Tables 8a and **8b**[4] shows the calculation of emissions from entrained roadway dust for the Revised Variant to account for the additional hauling trips.

Updated fugitive dust emissions from grading equipment are presented in **Table 10,** fugitive dust from material loading activities is presented in **Table 11,** and fugitive dust emissions from bulldozing are presented in **Table 12.**

Updated ROG emissions from paving off-gassing due to the changes of parking spaces for the Revised Variant are shown in **Table 13**.

Updated architectural coating emissions for the Revised Variant are shown in **Table 14** for uncontrolled emissions and **Table 15** for controlled emissions.

2.1.2 Construction Emissions Summary

Uncontrolled construction emissions by source are shown in **Table 16**, and controlled construction emissions by source are shown in **Table 17**. A summary of annual average daily construction CAP emissions from the construction of the Revised Variant is shown in **Table 18** and controlled annual average daily construction CAP emissions are shown in **Table 19.** As discussed above, controlled construction emissions incorporate architectural coating controls, Tier 4 construction equipment with the exception of bore/drill rigs and cranes, and model year 2018 or newer trucks.

The maximum annual average construction emissions for any year are summarized in **Table B**, below, along with the maximum annual average construction emissions for any year as reported in the Draft EIR. The total construction emissions for each year were averaged over the number of days construction would occur in that year. The maximum annual averaged NOx emissions occurring in 2027 decreased slightly for both the uncontrolled and controlled scenarios due to the reduction of residential land uses in Phases 2 and 3. The changes are not attributed to Phase 6 updates because the year of maximum emissions for each pollutant was not a year that included Phase 6.

Table B. Summary of Maximum Annual Average Daily Construction CAP Emissions (lb/day)

		ROG	NO_X	PM_{10}	$PM_{2.5}$
Revised Variant	Uncontrolled	58	30	13	3.4
	Controlled	11	7.7	9.2	1.7
Draft EIR Variant	Uncontrolled	58	31	13	3.4
	Controlled	11	7.8	9.2	1.7

Source: Tables 36 and 37 of this analysis and the AQTM. For the Revised Variant uncontrolled scenario, the maximum NOx, PM_{10}, and $PM_{2.5}$ emissions occur in 2027, while the maximum ROG emissions occur in 2028. For the controlled scenario, the maximum ROG, PM10, and $PM_{2.5}$ emissions occur in 2028 except for maximum NOx emissions in 2027. The years of maximum emissions for the Draft EIR Variant are the same as the Revised Variant.

2.2 Operational CAP Emissions

2.2.1 Updated Operational Information and Emissions

Operational emissions were estimated for the Revised Variant, as described in the Methodology Report and the AQTM. The revised scaling factors for interim year emissions is shown in **Table 20**, which take into account the changes in land use for all phases and the buildout date of Phase 6.

[4] Note that all the table numbers in this memorandum correspond to the related table in the AQTM.

As shown in **Appendix D,** the Transportation Engineer for the Project provided updated daily average project-generated (i.e., net new) vehicle trip rates and daily trip lengths,[5,6] summarized in **Table 21b** for the Revised Variant. Criteria air pollutant mobile source emissions from Revised Variant operation are summarized in **Table 23b**. Controlled mobile source emissions are shown in **Table 24b**.[7]

The Revised Variant would involve the operation of one additional emergency generator compared to the Project Variant analyzed in the AQTM. Uncontrolled and controlled emissions from the maintenance and testing of the emergency generators are shown in **Table 26a** and **Table 26b**, respectively.[8]

Architectural coating emissions for the Revised Variant are shown in **Table 27** for uncontrolled emissions and **Table 28** for controlled emissions.[9]

Table 30 shows the emissions from the Existing Site and Revised Variant based on the consumer product use which accounts for the addition.

As discussed in the Methodology Report and AQTM, the buildings would be all-electric and there are no direct emissions of criteria air pollutants associated with on-site electricity use. Therefore, emissions from the Revised Variant energy use would be zero.

Landscaped area, and thus emissions from landscaping, have not changed from the AQTM.

2.2.2 Operational Emissions Summary

A summary of full buildout annual CAP emissions and annual average daily CAP emissions from operations of the Revised Variant is shown in **Table 34b**. **Table 34b** also shows operational emissions during intermediate years when a portion of the site would be operational. **Table 35b** shows the controlled operational emissions for the Revised Variant. The Net Full Buildout emissions are summarized in **Table C**, below, for the Revised Variant compared to the Variant analyzed in the Draft EIR.

Compared to Draft EIR, emissions increased due to the increase in building square footage, the addition of a generator, conversion of office to residential, and the increase in vehicle miles traveled. The increased use of consumer products and increased architectural coating due to the increase in square footage was the largest contributor to the increase in ROG emissions. As shown in **Table 21a**, the vehicle miles traveled increased with the Revised Variant due to the increase in residential units and the conversion from office to residential land use. This was the main contributor to the increase in NO_X and PM emissions. NO_X emissions also increased by 2.1% due to the additional generator.[10]

[5] Trip generation rates by land use were provided by the transportation engineer. The rates used are the total external vehicle trips as shown in Table 3 of the Revised Variant Impact Analysis Memorandum, which incorporate internal trip capture and expected driving mode share, broken out by land use.

[6] Kittelson & Associates, 2022. Revised Variant Impact Analysis Memorandum. June 8.

[7] Controlled emissions assume a 10% emissions reduction from a Travel Demand Management Plan, consistent with the AQTM assumptions.

[8] Controlled emissions assume all generators will have Tier 4 engines, consistent with the AQTM assumptions.

[9] Controlled emissions assume indoor and outdoor painting will use super-compliant coatings, which are paints that have been reformulated to exceed the SCAQMD's Rule 1113 (Architectural Coatings) requirements, consistent with the AQTM assumptions.

[10] In the Draft EIR, controlled emissions for the Variant incorrectly included uncontrolled emissions from the generators and therefore overestimated controlled emissions. The corrected full buildout annual average daily net operational NO_X emissions in the Draft EIR should be 27.6 lb/day for the controlled scenario. Emissions for all other pollutants remain unchanged from what was reported in the Draft EIR.

As discussed above, the controlled operational scenario assumed super compliant coatings, TDM, electrical landscaping equipment, and emergency generators that meet Tier 4 standards.

Table C. Summary of Full Buildout Annual Average Daily Net Operational CAP Emissions (lb/day)

		ROG	NO_X	PM_{10}	$PM_{2.5}$
Revised Variant	Uncontrolled	117	40	59	11
	Controlled	84	28	53	9.3
Draft EIR Variant	Uncontrolled	114	39	56	10
	Controlled	83	35	50	9.0
Source: Tables 36 and 37 of this analysis and the AQTM. Note the controlled NOx emissions went down compared to the Draft EIR because the Draft EIR incorrectly reported uncontrolled emergency generator emissions as the controlled scenario for the Variant.					

2.3 Combined Construction and Operational Emissions

The Revised Variant operation would overlap with construction during the interim years. **Table 36** shows the uncontrolled combined construction and operational emissions. **Table 37** shows combined construction and operational emissions for the controlled scenarios. As discussed above, the controlled scenario assumes:

- Super Compliant architectural coatings in construction and operations;
- Tier 4 diesel engines for construction off-road equipment with the exception of bore/drill rigs and cranes, which are assumed to have Tier 2 engines;
- Restricting on-road heavy duty trucks visiting the site to engine model year 2018 or newer;
- The Transportation Demand Management Plan (TDM);
- Requiring only electrical landscaping equipment; and
- Tier 4 engines for any emergency generators.

The maximum annual average net construction and operational emissions for any year are summarized in **Table D**, below, for the Revised Variant compared to the Variant analyzed in the Draft EIR. Overall, the CAP emission increases are due to the increased residential building area, the added emergency generator, and the increased number of parking spaces, as discussed above in the construction and operational emissions sections.

Table D. Summary of Maximum Annual Average Daily Net Construction and Operational CAP Emissions (lb/day)

		ROG	NO_X	PM_{10}	$PM_{2.5}$
Revised Variant	Uncontrolled	127	46	59	11
	Controlled	84	31	53	9.3
Draft EIR Variant	Uncontrolled	124	46	56	10
	Controlled	83	36	50	9.0

Source: Tables 36 and 37 of this analysis and the AQTM. For the Revised Variant, the uncontrolled maximum ROG and NOx emissions occur in 2031, and maximum PM_{10} and $PM_{2.5}$ emissions occur at the full buildout. For the controlled scenario, the maximum ROG, PM_{10}, and $PM_{2.5}$ emissions occur at the full buildout, except for the maximum NOx emissions, which occur in 2031. For the Draft EIR Variant, maximum emissions occur in 2032 with the exception of NOx emissions and uncontrolled ROG emissions, which both occur in 2031.

2.4 Project Health Risks for Receptors

The health risk assessment (HRA) was updated to reflect the updated construction information and additional generator associated with the Revised Variant. The methodology for this HRA is detailed in the Methodology Report and the AQTM. Construction areas did not change with the Revised Variant.[11]

2.4.1 Non-Worker Receptors

For non-worker receptors, a summary of the results of the HRA is presented below. The age sensitivity weighted intake factors for Scenario 12 (i.e., Exposure to operations beginning at the conclusion of all Project construction) was updated due to the change of the full buildout date, as shown in **Table 39m**. All other exposure scenarios remain the same.

Maximum Revised Variant Impacts

The updated maximum uncontrolled and controlled Proposed Variant health impacts by population type along with background health impacts (existing plus project health impacts) are summarized in **Tables 41a-b**. These results are the maximum health impacts regardless of if the receptor meets Air Pollution Exposure Zone (APEZ) criteria. Breakdowns of the health impacts by source are shown in the same table. The updated locations of the uncontrolled Maximally Exposed Individuals (MEIs) for cancer risk, chronic HI, and $PM_{2.5}$ concentration by receptor type are shown in **Figure 6a**. Only the location of maximally exposed individual worker (MEIW) for cancer risk changed from the southwest of the mall to the northwest and the locations of all other MEIs remained the same as AQTM.

Maximum health impacts over all the population types are summarized in **Table F** below. The Revised Variant impacts decrease for both cancer risk (about 4% for uncontrolled scenario) and $PM_{2.5}$ concentration (about 12-14% for both scenarios). The change is due to the elimination of the grader, the use of an electric crane (rather than diesel), and shortened duration of Demolition and Grading, Shoring, Excavating subphases in Phase 6, which affect both DPM and exhaust $PM_{2.5}$ emissions starting from 2029, the start of construction of Phase 6. Additionally, the MEI of the uncontrolled cancer risk is situated adjacent to and on the downwind side of Phase 3, where construction activities are reduced compared to the Draft EIR Variant to account for the reduction in built area that was transferred to Phase 1. Due to the proximity of the MEI to Phase 3 and the distance to Phase 1, the MEI experienced

[11] Construction activity of the two new ADA pathway improvements through Rolph Nichol Jr. Playground was included within the Phase 1 modeling area since any portion of diesel construction activity outside of this area would be minimal.

a decrease in health impacts as a result of this change. Operational impacts increased slightly due to the additional generator. However, in most locations, the reduction in risk from construction outweighs the increase from operations. Both the controlled and uncontrolled cancer risk decreases due to these three factors. For the controlled cancer risk, the decrease from construction was counteracted by the increase in cancer risk from the additional generator and increased construction in Phase 1 at the MEI location. $PM_{2.5}$ concentration reduced more than cancer risk for the following reasons: (1) the elimination of the grader further reduces fugitive $PM_{2.5}$ emissions in Phase 6, and (2) the MEI for $PM_{2.5}$ concentration for both uncontrolled and controlled scenarios occur in 2029 at an offsite resident receptor adjacent to Phase 6, while the MEIs for cancer risk are far away from Phase 6.

Table F. Maximum Uncontrolled and Controlled Revised Variant Health Impacts from Construction and Operation

	Scenario	Excess Lifetime Cancer Risk (in a million)[1]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[1]
Revised Variant	Uncontrolled	23.5	0.29
	Controlled	8.9	0.24
Draft EIR Variant	Uncontrolled	24.4	0.33
	Controlled	8.9	0.28

Source: Tables 41a and 41b of this analysis and the AQTM
Notes:
1. Maximum cancer risk and $PM_{2.5}$ concentration indicate the maximum Revised Variant (or Draft EIR Variant) impacts from the combined construction and operational sources across all the 12 exposure scenarios.

As discussed above, the controlled HRA scenario assumes:

- Tier 4 diesel engines for construction off-road equipment with the exception of bore/drill rigs and cranes or equivalent, which are assumed to be Tier 2;
- Restricting on-road heavy duty trucks visiting the site to engine model year 2018 or newer; and
- Tier 4 engines for any emergency generators.

Maximum Revised Variant Impacts that Meet APEZ Criteria

The updated maximum impact in and out of the APEZ are presented in **Tables 42a-b** for uncontrolled and controlled scenarios.

Table G below shows the project's greatest contribution to health impacts under uncontrolled and controlled scenarios for the Revised Variant that meets APEZ criteria. There are certain receptor points that exceed the APEZ criteria within the project site before the addition of the Project impacts. Those points are considered as part of the APEZ since they meet the APEZ criteria. The health impacts for the Revised Variant are at a similar level to the ones for the Draft EIR Variant except for the uncontrolled cancer risk, which is lower for the Revised Variant. The reason for the decrease of in cancer risk is discussed above and is consistent for these receptors. The MEIs for $PM_{2.5}$ in the APEZ occur in 2026 in the AQTM and continue to be in 2026 for the Revised Variant. The reduction in excavation in Phases 2 and 3 occurs in 2026. However, these impacts are very minimal, and are not significant enough to be reflected in the report tables. Phase 6 is not under construction by 2026, so the $PM_{2.5}$ concentration in 2026 is unaffected by the changes in Phase 6.

Table G. Maximum Uncontrolled and Controlled Revised Variant Health Impacts from Construction and Operation that Meet APEZ Criteria

		Excess Lifetime Cancer Risk (in a million)[1]	$PM_{2.5}$ Concentration ($\mu g/m^3$)[1]
Revised Variant	Uncontrolled	23.5	0.23
	Controlled	6.5	0.19
Draft EIR Variant	Uncontrolled	24.4	0.23
	Controlled	6.5	0.19

Source: Tables 42a and 42b of this analysis and the AQTM

Notes:

1. Maximum cancer risk and $PM_{2.5}$ concentration indicate the maximum Revised Variant (or Draft EIR Variant) impacts from the combined construction and operational sources across all the 12 exposure scenarios.

Maximum Revised Variant Impacts that Do Not Meet APEZ Criteria

Table H shows the greatest project contribution to health risks and the maximum health risk impacts under uncontrolled and controlled scenarios for receptors that do not meet APEZ criteria for both the Revised Variant and the Draft EIR Variant. The breakdowns of the Revised Variant and existing background cancer risks and $PM_{2.5}$ concentrations are also included in **Tables 42a-b.**

Maximum Variant Impacts, shown in the table below, are based on the combined construction and operational sources across all the 12 exposure scenarios for the Project. For both uncontrolled and controlled scenarios, the maximum Revised Variant impacts decrease for cancer risk and $PM_{2.5}$ concentration outside of the APEZ. The $PM_{2.5}$ concentration decreased by a larger percentage than cancer risk because the MEI locations for $PM_{2.5}$ are adjacent to Phase 6 and are therefore heavily impacted by changes in Phase 6 construction. The maximum Variant MEIs outside of the APEZ for cancer risk moved to Buckingham Way and 19th Ave. Due to the distance from Phases 1-3 and 6, and proximity to Phase 5, impacts at this receptor are dominated by Phase 5 and less impacted by emission reductions in Phase 6, as well as by changes across Phases 1-3. For controlled cancer risk, the MEI is less affected by changes in Phases 1-3, and the decrease in construction risk due to Phase 6 changes was counteracted by the increase in operational risk from the generator.

Maximum total impacts in the table below refer to the maximum overall impact, which is the background plus Variant contribution. Compared to the Draft EIR Variant, the Revised Variant contribution decreased by a larger percent under the uncontrolled scenarios than the controlled scenarios. In the controlled scenarios, the reductions in construction were roughly similar to the increase in construction of Phase 1 and operation due to the generator. However, in the uncontrolled scenario, the construction reduction outweighed the increase in operations. The maximum total impacts are affected less by the changes in Phases 1-3 and 6 because their impacts are driven by background sources other than the Variant's contribution.

2.4.2 Worker Receptors

Health impacts to any potential offsite worker receptors were evaluated, as described in the AQTM. The updated uncontrolled and controlled Revised Variant health risks from construction and operational sources are summarized in **Tables 45a-b**. As shown in **Tables 45a-b**, the updated

uncontrolled and controlled cancer risks for the MEIW from the Revised Variant were calculated to be 4.8 and 2.9 in a million, respectively, compared to 5.1 and 2.9 in a million for the Draft EIR Variant. Total existing plus Project cancer risks at these locations were 35 and 48 in a million, respectively. Compared to the Draft EIR Variant, the uncontrolled cancer risks for the MEIW decreased by 5% while the controlled decreases are minor (about 0.8%). Similar to other receptors, the controlled construction risk decreased, and the operational risk increased by approximately the same amount (due to the additional generator). For uncontrolled cancer risk, construction risk is much larger, so the decrease outweighs the increase from the generator. Furthermore, the MEIW for the controlled cancer risk is near Phase 5, which is relatively far away from Phase 6, so would be less affected by changes in Phase 6. The emission reductions from Phase 6 construction resulted in the MEIW location for uncontrolled risk changing from near Phase 6 to the northwest of the mall, as shown in **Figure 6a**.

The $PM_{2.5}$ annual average concentration including fugitive dust for the uncontrolled and controlled scenarios are 0.50 µg/m^3 and 0.43 µg/m^3, respectively, compared to 0.59 µg/m^3 and 0.51 µg/m^3 for the Draft EIR Variant. Total existing plus Variant $PM_{2.5}$ concentration at these locations were 8.8 and 8.7 µg/m^3, respectively. Compared to the Draft EIR Variant, the uncontrolled $PM_{2.5}$ concentration decreased by 16% and the controlled decreased by 15%. Both MEIWs' locations for $PM_{2.5}$ concentrations are adjacent to Phase 6 so are directly impacted by $PM_{2.5}$ emission reductions in Phase 6, as discussed above.

The maximum uncontrolled non-cancer chronic HI at the MEIW was updated to be 0.017 while the controlled chronic HI was 0.0053, compared to 0.022 and 0.0058 for the Draft EIR Variant. The chronic HI at these locations is dominated by construction, so the reduction in construction emissions caused the reduction in chronic HI.

The updated breakdowns of the workers' health impacts are shown in **Tables 45a-b** for the Revised Variant.

All worker receptors analyzed did not meet APEZ criteria, so a comparison between meeting and not meeting APEZ criteria was not performed for the worker population.

2.5 Cumulative Analysis

The cumulative analysis and discussion from the AQTM remain unchanged for the Revised Variant. The cumulative analysis in the AQTM discussed the impact of nearby reasonably foreseeable future projects and did not quantitively analyze the impact of these other projects due to their distance from the site or availability of information on specific improvements. The AQTM discussed that while the reasonably foreseeable future projects may increase TAC emissions in the area, the project's contribution to cumulative health risks would remain the same. This conclusion would remain the same for the Revised Variant.

Table H. Maximum Uncontrolled and Controlled Revised Variant Health Impacts from Construction and Operation that Do Not Meet APEZ Criteria

		Excess Lifetime Cancer Risk (in a million)		$PM_{2.5}$ Concentration ($\mu g/m^3$)	
		Variant Contribution	Total with Background	Variant Contribution	Total with Background
Revised Variant	**Uncontrolled Scenario**				
	Maximum Variant Impact[1]	21.2	78.1	0.28	8.5
	Maximum Total Impact[2]	16.2	112.5	0.074	9.8
	Controlled Scenario				
	Maximum Variant Impact[1]	8.9	65.8	0.24	8.4
	Maximum Total Impact[2]	6.1	102.4	0.072	9.9
Draft EIR Variant	**Uncontrolled Scenario**				
	Maximum Variant Impact[1]	23.4	70.1	0.33	8.5
	Maximum Total Impact[2]	18.4	112.2	0.074	9.8
	Controlled Scenario				
	Maximum Variant Impact[1]	8.9	65.8	0.28	8.5
	Maximum Total Impact[2]	6.1	102.4	0.073	9.8

Source: Tables 42a and 42b of this analysis and the AQTM

Notes:

1. Maximum cancer risk and $PM_{2.5}$ concentration indicate the maximum Revised Variant (or Draft EIR Variant) impacts from the combined construction and operational sources across all the 12 exposure scenarios.
2. Maximum total impacts indicate the maximum background plus Revised Variant (or Draft EIR Variant) impacts.

TABLES

Table 1: Land Use Summary for Existing Conditions and Revised Variant

Table 2: Construction Phasing Schedule for Revised Variant

Table 3: Construction Equipment for Revised Variant

Table 4a: Uncontrolled Construction Off-Highway Truck Emissions for Revised Variant

Table 4b: Controlled Construction Off-Highway Truck Emissions for Revised Variant

Table 5: Construction Trips for Revised Variant

Table 8a: Emission Calculations for Modeled Entrained Roadway Dust for Revised Variant

Table 8b: Emission Calculations for Entrained Roadway Dust Mass Emissions for Revised Variant

Table 10: Fugitive Dust Emissions from Off-Road Grading Activity for Revised Variant

Table 11: Fugitive Dust Emissions from Truck Loading Activity for Revised Variant

Table 12: Fugitive Dust Emissions from Off-Road Bulldozing Activity for Revised Variant

Table 13: Estimated Emissions from Construction Paving Off-Gassing for Revised Variant

Table 14: Estimated Emissions from Construction Architectural Coating Off-Gassing for Revised Variant

Table 15: Estimated Emissions from Controlled Construction Architectural Coating Off-Gassing for Revised Variant

Table 16: Summary of Uncontrolled Construction Emissions by Source for Revised Variant

Table 17: Summary of Controlled Construction Emissions by Source for Revised Variant

Table 18: Uncontrolled Construction Emissions by Year for Revised Variant

Table 19: Controlled Construction Emissions by Year for Revised Variant

Table 20: Building Operational Capacity for Emissions Scaling for Revised Variant

Table 21b: Trips and VMT for Revised Variant Operations

Table 23b: Project Revised Variant Uncontrolled Mobile Emissions Summary

Table 24b: Project Revised Variant Controlled Mobile Emissions Summary

Table 26a: Uncontrolled Generator Emissions from Project Operations for Revised Variant

Table 26b: Controlled Generator Emissions from Project Operations for Revised Variant

Table 27: Uncontrolled Architectural Coating Emissions from Existing Conditions and Project Operations for Revised Variant

Table 28: Controlled Architectural Coating Emissions from Existing Conditions and Project Operations for Revised Variant

Table 30: Consumer Product Emissions from Existing Conditions and Project Operations for Revised Variant

Table 34b: Summary of Variant Uncontrolled Operational CAP Emissions for Revised Variant

Table 35b: Summary of Variant Controlled Operational CAP Emissions for Revised Variant

Table 36: Uncontrolled Construction and Net New Operational CAP Emissions by Year for Revised Variant

Table 37: Controlled Construction and Net New Operational CAP Emissions by Year for Revised Variant

Table 39m: Age Sensitivity Weighted Intake Factors by Year and Age Bin for Scenario 12 and Revised Variant

Table 41a: Maximum Uncontrolled Revised Variant Health Impacts by Population Type

Table 41b: Maximum Controlled Revised Variant Health Impacts by Population Type

Table 42a: Maximum Uncontrolled Existing Plus Revised Variant Cancer Risk and $PM_{2.5}$ Concentration for APEZ and non-APEZ receptors

Table 42b: Maximum Controlled Existing Plus Revised Variant Cancer Risk and $PM_{2.5}$ Concentration for APEZ and non-APEZ receptors

Table 45a: Maximum Uncontrolled Revised Variant Health Impacts for Workers

Table 45b: Maximum Controlled Revised Variant Health Impacts for Workers

FIGURES

Figure 1b: Revised Variant Phasing Schedule

Figure 6a: Uncontrolled Maximally Exposed Individuals

APPENDICES

Appendix B: Emissions for Health Risk Assessment

Appendix D: Transportation Data

TABLES

Table 1
Land Use Summary for Existing Conditions and Proposed Project for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Site	Land Use Type	Description[1]	CalEEMod Land Use Subtype[2]	Land Use Quantity	
				Value	Units
Existing Conditions on the Site	Parking	Underground parking and surface parking lots	Structured Parking	1,659	ksf
	Cultural, Institutional, Educational	Church	Place of Worship	25	ksf
	Retail	Shopping center	Regional Shopping Center	59	ksf
Proposed Project Variant	Residential	Residential	Apartments Mid Rise	**3,491**	DU
	Retail	Retail Sales and Services	Regional Shopping Center	160	ksf
	Commercial	Non-Retail Sales and Services	General Office Building	**96**	ksf
	Recreational	Parks, Plazas, and Open Space	City Park	6.0	acres
	Recreational	Hotel	Hotel	**0**	rooms
	Cultural, Institutional, Educational	Institutional	General Office Building	63	ksf
	Parking	Structured Parking	Enclosed Parking with Elevator	**4,861**	spaces

Notes:

1. Project land uses obtained from the Stonestown Development Program Table sent to Ramboll on 2/17/22.
2. CalEEMod land use subtype represents the land uses as input into CalEEMod.

Abbreviations:

CalEEMod - California Emissions Estimator Model
DU - Dwelling Unit
ksf - 1000 square feet

Table 2
Construction Phasing Schedule for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Phase[1]	Construction Subphase[1]	Start Date	End Date[2]	Days per Week[3]	Number of Work Days	Demolished Area
Phase 1	Demolition	4/15/2024	6/10/2024	5	40	26,600
	Site Preparation	4/1/2024	6/10/2024	5	50	
	Grading, Shoring, Excavating	5/28/2024	1/14/2025	5	159	
	Building Construction	12/2/2024	1/11/2028	5	796	
	Paving	2/1/2026	5/1/2026	5	64	
	Architectural Coating	12/1/2025	1/11/2028	5	544	
Phase 2	Demolition	5/2/2025	7/21/2025	5	57	353,410
	Site Preparation	4/1/2025	7/21/2025	5	80	
	Grading, Shoring, Excavating	6/21/2025	5/21/2026	5.1	239	
	Building Construction	5/22/2026	12/22/2028	5.1	676	
	Paving	10/1/2028	11/1/2028	5	23	
	Architectural Coating	6/1/2027	12/22/2028	5	409	
Phase 3	Demolition	7/2/2026	9/20/2026	5.1	58	225,529
	Site Preparation	6/1/2026	7/1/2026	5	21	
	Grading and Shoring	8/20/2026	7/20/2027	5	239	
	Building Construction	8/1/2026	10/1/2028	5.1	577	
	Paving	6/1/2027	7/1/2027	5	21	
	Architectural Coating	10/1/2027	10/1/2028	5	261	
Phase 4[4]	Demolition	6/2/2027	9/10/2027	5.1	73	318,112
	Site Preparation	4/1/2027	6/1/2027	5.1	44	
	Grading, Shoring, Excavate	8/10/2027	7/10/2028	5.1	244	
	Building Construction	3/1/2028	12/1/2030	5.1	732	
	Paving	8/1/2030	10/1/2030	5.0	44	
	Architectural Coating	3/1/2029	12/1/2030	5.0	457	
Phase 5	Demolition	6/2/2028	8/21/2028	5.1	58	166,949
	Site Preparation	4/1/2028	6/1/2028	5	44	
	Grading, Shoring, Excavation	7/21/2028	6/21/2029	5.1	244	
	Building Construction	4/21/2029	11/1/2031	5.1	673	
	Paving	7/26/2030	9/26/2030	5	44	
	Architectural Coating	4/21/2030	11/1/2031	5	399	
Phase 6	Demolition	5/2/2029	**6/21/2029**	5	**36**	321,767
	Site Preparation	4/1/2029	5/1/2029	5	21	
	Grading, Shoring, Excavating	**6/1/2029**	**2/1/2030**	5	**169**	
	Building Construction	**2/5/2030**	**6/15/2032**	5	**615**	
	Paving	**9/1/2031**	**11/15/2031**	5	**54**	
	Architectural Coating	**2/1/2031**	**6/30/2032**	5	**368**	

Notes:

1. Construction phasing information was provided by the Project Sponsor. Construction may occur between 7am-8pm, per San Francisco City and County requirements. A small portion of construction in Phase 1 would occur at night. However, sensitive populations near this construction are a school, which operates during the day. Therefore, it is conservative to assume all emissions would occur during the day, concurrent with school operating hours.
2. Occupancy is expected to begin in 2028 through 2032 for Phases 1 through 6.
3. The 5.1 workdays per week account for the occasional construction work on weekends.
4. The Phase 4 Variant would include the development of the Authentic Church parcel.

Table 3
Construction Equipment for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Phase	Construction Subphase	Equipment[1]	CalEEMod Equipment[2]	Fuel[3]	Number[1]	Horsepower[1]	Daily Usage[4] (hours/day)	Utilization[5]
Phase 1	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavating	Excavators	Excavators	Diesel	2	158	8	**31%**
		Graders	Graders	Diesel	1	187	8	**12%**
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	**6%**
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	**6%**
		Scrapers	Scrapers	Diesel	1	367	8	**6%**
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	**43%**
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	97	8	**37%**
	Building Construction	Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 2	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavating	Excavators	Excavators	Diesel	2	158	8	**22%**
		Graders	Graders	Diesel	1	187	8	**9%**
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	**4%**
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	**4%**
		Scrapers	Scrapers	Diesel	1	367	8	**4%**
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	**31%**
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	**28%**
	Building Construction	Cranes	Cranes	Diesel	2	231	7	25%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 3	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading and Shoring	Excavators	Excavators	Diesel	2	158	8	**22%**
		Graders	Graders	Diesel	1	187	8	**9%**
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	**4%**
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	**4%**
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	**31%**
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	97	8	**26%**
	Building Construction	Cranes	Cranes	Diesel	1	231	7	20%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%

Table 3
Construction Equipment for Revised Variant
Stonestown Redevelopment
San Francisco, California

Phase 4[7]	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavate	Excavators	Excavators	Diesel	2	158	8	25%
		Graders	Graders	Diesel	1	187	8	10%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	5%
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	5%
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	35%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	30%
	Building Construction	Cranes	Cranes	Diesel	1	231	7	20%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 5	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavation	Excavators	Excavators	Diesel	2	158	8	25%
		Graders	Graders	Diesel	1	187	8	10%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	5%
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	5%
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	35%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	30%
	Building Construction	Cranes	Cranes	Diesel	2	231	7	25%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%
Phase 6	Demolition	Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	2	81	8	10%
		Excavators	Excavators	Diesel	2	158	8	50%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	2	247	8	40%
	Site Preparation	Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	45%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	8	55%
	Grading, Shoring, Excavating	Excavators	Excavators	Diesel	2	158	8	25%
		Rubber Tired Dozers	Rubber Tired Dozers	Diesel	1	247	8	5%
		Drilling Rig	Bore/Drill Rigs	Diesel	1	221	8	5%
		Dump Truck	Off-Highway Trucks	Diesel	10	97	8	35%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	97	8	30%
	Building Construction	Cranes	Cranes	**Electric**	1	231	7	20%
		Forklifts	Forklifts	Diesel	2	89	8	20%
		Generator Sets	Generator Sets	Diesel	2	84	8	10%
		Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	2	97	7	20%
		Concrete Trucks	Off-Highway Trucks	Diesel	6	172	8	40%
		Concrete Pump	Pumps	Diesel	1	84	8	5%
		Welders	Welders	Diesel	1	46	8	5%
	Paving	Pavers	Pavers	Diesel	1	130	8	40%
		Paving Equipment	Paving Equipment	Diesel	2	132	8	40%
		Rollers	Rollers	Diesel	2	80	8	20%
	Architectural Coating	Air Compressors	Air Compressors	Diesel	2	78	6	30%

Table 3
Construction Equipment for Revised Variant
Stonestown Redevelopment
San Francisco, California

Notes:

1. Equipment lists and numbers were based on CalEEMod defaults and provided by the Project Sponsor. Where a range of equipment numbers were specified, the maximum equipment number was used.
2. CalEEMod equipment types are assigned using CalEEMod User's Guide Appendix C.
3. All equipment is conservatively assumed to be diesel-fueled.
4. Construction activities are assumed to occur during 7AM to 8PM hours, consistent with the construction allowances in San Francisco's Police Code Article 29, Section 2907.
5. Where no utilization was provided, utilization was assumed to be 100%, that is, the equipment is used for the entirety of the phase. This is likely conservative, as not all equipment would be used every construction day.
6. The uncontrolled tier is assumed to be consistent with the fleet average tier. For estimating controlled emissions, Ramboll will assume the project will use Tier 4 final equipment.
7. The Phase 4 Variant would include the development of the Authentic Church parcel.

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4a
Uncontrolled Construction Off-Highway Truck Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Construction Phase	Construction Subphase	Year	Onsite Truck Use[1]				Onsite Truck Emissions[2]			
			Run Hours	Starts	Miles	Idle Hours	ROG	NOx	PM_{10}	$PM_{2.5}$
							(lbs)			
Phase 1	Grading, Shoring, Excavating	2024	**500**	**500**	**7,503**	**500**	**4.6**	**194**	**2.8**	**1.3**
		2025	**32**	**32**	**482**	**32**	**0.29**	**12**	**0.18**	**0.078**
	Building Construction	2024	66	66	993	66	0.60	26	0.37	0.17
		2025	806	806	12,085	806	7.3	299	4.4	2.0
		2026	806	806	12,085	806	7.1	287	4.3	1.9
		2027	806	806	12,085	806	7.0	276	4.3	1.9
		2028	24	24	364	24	0.21	7.9	0.13	0.054
Phase 2	Grading, Shoring, Excavating	2025	**287**	**287**	**4,310**	**287**	**2.6**	**107**	**1.6**	**0.70**
		2026	**209**	**209**	**3,132**	**209**	**1.8**	**74**	**1.1**	**0.49**
	Building Construction	2026	448	448	6,723	448	4.0	160	2.4	1.1
		2027	730	730	10,955	730	6.3	250	3.9	1.7
		2028	714	714	10,715	714	6.1	233	3.7	1.6
Phase 3	Grading and Shoring	2026	**198**	**198**	**2,972**	**198**	**1.8**	**71**	**1.1**	**0.47**
		2027	**297**	**297**	**4,457**	**297**	**2.6**	**102**	**1.6**	**0.68**
	Building Construction	2026	234	234	3,507	234	2.1	83	1.3	0.55
		2027	558	558	8,366	558	4.8	191	2.9	1.3
		2028	420	420	6,303	420	3.6	137	2.2	0.94
Phase 4 Variant	Grading, Shoring, Excavate	2027	251	251	3,766	251	2.2	86	1.3	0.58
		2028	335	335	5,021	335	2.8	109	1.7	0.75
	Building Construction	2028	468	468	7,016	468	4.0	153	2.4	1.0
		2029	558	558	8,368	558	4.6	173	2.8	1.2
		2030	512	512	7,681	512	4.1	154	2.5	1.0
Phase 5	Grading, Shoring, Excavation	2028	286	286	4,289	286	2.4	93	1.5	0.64
		2029	300	300	4,498	300	2.5	93	1.5	0.63
	Building Construction	2029	779	779	11,692	779	6.4	242	3.9	1.6
		2030	1,116	1,116	16,735	1,116	8.9	334	5.5	2.3
		2031	932	932	13,984	932	7.4	271	4.6	1.9
Phase 6	Grading, Shoring, Excavating	2029	**205**	**205**	**3,080**	**205**	**1.7**	**64**	1.0	**0.43**
		2030	**31**	**31**	**460**	**31**	**0.25**	**9.2**	**0.15**	**0.062**
	Building Construction	2030	**494**	**494**	**7,416**	**494**	4.0	**148**	**2.4**	1.0
		2031	547	547	**8,203**	547	4.3	159	**2.7**	1.1
		2032	**250**	**250**	**3,753**	**250**	**1.9**	**71**	**1.2**	**0.49**

Notes:

1. An average emission factors is calculated using the following criteria:
   - Number of HHDT vehicles and schedule are provided by the Project Sponsor.
   - Run hours are calculated as number of equipment * utilization percent * number of construction days * hours/day as provided by the project sponsor.
   - Trips are calculated assuming there is one trip per hour, calculated as number of hours * 1 trip/hour.
   - Miles are calculated as hours * 15 miles per hour.
   - Total Vehicles are calculated as number of equipment for a given subphase * equipment utilization percent * number of construction subphase days as provided by the project sponsor.
2. Concrete Trucks and Dump Trucks are assumed to be similar to heavy-heavy duty trucks (HHDT) as defined in EMFAC2021. Emission factors are from EMFAC2021 ("Emission Rates" mode) for HHDT diesel vehicles (aggregated model year) in San Francisco County. RUNEX emission factors are specific to vehicle speed of 15 mph. All other emission factor types, except IDLEX emission factors, are for aggregated speed. IDLEX emission factors are from EMFAC2021 ("Project Analysis") for HHDT diesel vehicles in San Francisco County. Emission factors were multiplied by the appropriate usage parameter based on the units. Emission factors in units of g/trip, g/mi, and g/vehicle/day, were multiplied by trips, miles, and total vehicles, respectively, in order to obtain mass emissions.

Abbreviations:

EMFAC2021 - California Air Resources Board EMission FACtor model
HHDT - heavy heavy-duty trucks
IDLEX - Idle exhaust emissions
lb - pound
NOx - nitrogen oxides
PM - Particulate Matter
PM10 - particulate matter less than 10 microns
PM2.5 - particulate matter less than 2.5 microns
ROG - reactive organic gases
RUNEX - Running exhaust emissions

References:

California Air Resources Board. EMFAC2021. Available online at: https://arb.ca.gov/emfac/emissions-inventory

Table 4b
Controlled Construction Off-Highway Truck Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Construction Phase	Construction Subphase	Year	Onsite Truck Use[1,3]				Onsite Truck Emissions[2,3]			
			Run Hours	Starts	Miles	Idle Hours	ROG	NOx	PM_{10}	$PM_{2.5}$
							(lbs)			
Phase 1	Grading, Shoring, Excavating	2024	**500**	**500**	**7,503**	**500**	**3.0**	**80**	**2.0**	**0.72**
		2025	**32**	**32**	**482**	**32**	**0.20**	**5.1**	**0.13**	**0.046**
	Building Construction	2024	66	66	993	66	0.40	11	0.27	0.10
		2025	806	806	12,085	806	4.9	129	3.3	1.2
		2026	806	806	12,085	806	4.9	129	3.3	1.2
		2027	806	806	12,085	806	4.9	129	3.3	1.2
		2028	24	24	364	24	0.15	3.9	0.10	0.035
Phase 2	Grading, Shoring, Excavating	2025	**287**	**287**	**4,310**	**287**	**1.7**	**46**	**1.2**	**0.41**
		2026	**209**	**209**	**3,132**	**209**	**1.3**	**33**	**0.85**	**0.30**
	Building Construction	2026	448	448	6,723	448	2.7	72	1.8	0.64
		2027	730	730	10,955	730	4.4	117	3.0	1.1
		2028	714	714	10,715	714	4.3	114	2.9	1.0
Phase 3	Grading and Shoring	2026	**198**	**198**	**2,972**	**198**	**1.2**	**32**	**0.81**	**0.28**
		2027	**297**	**297**	**4,457**	**297**	**1.8**	**48**	**1.2**	**0.43**
	Building Construction	2026	234	234	3,507	234	1.4	37	1.0	0.34
		2027	558	558	8,366	558	3.4	89	2.3	0.80
		2028	420	420	6,303	420	2.5	67	1.7	0.61
Phase 4 Variant	Grading, Shoring, Excavate	2027	251	251	3,766	251	1.5	40	1.0	0.36
		2028	335	335	5,021	335	2.0	53	1.4	0.48
	Building Construction	2028	468	468	7,016	468	2.8	75	1.9	0.68
		2029	558	558	8,368	558	3.4	89	2.3	0.81
		2030	512	512	7,681	512	3.1	82	2.1	0.75
Phase 5	Grading, Shoring, Excavation	2028	286	286	4,289	286	1.7	46	1.2	0.41
		2029	300	300	4,498	300	1.8	48	1.2	0.44
	Building Construction	2029	779	779	11,692	779	4.7	124	3.2	1.1
		2030	1,116	1,116	16,735	1,116	6.8	179	4.6	1.6
		2031	932	932	13,984	932	5.6	151	3.9	1.4
Phase 6	Grading, Shoring, Excavating	2029	**205**	**205**	**3,080**	**205**	1.2	**33**	**0.85**	**0.30**
		2030	**31**	**31**	**0,460**	**31**	**0.19**	**4.9**	**0.13**	**0.045**
	Building Construction	2030	**494**	**494**	**7,416**	**494**	3.0	**79**	**2.0**	**0.72**
		2031	547	547	**8,203**	547	3.3	89	2.3	0.80
		2032	**250**	**250**	**3,753**	**250**	**1.52**	**41**	**1.0**	**0.37**

Notes:

1. An average emission factors is calculated using the following criteria:
   - Number of HHDT vehicles and schedule are provided by the Project Sponsor.
   - Run hours are calculated as number of equipment * utilization percent * number of construction days * hours/day as provided by the project sponsor.
   - Trips are calculated assuming there is one trip per hour, calculated as number of hours * 1 trip/hour.
   - Miles are calculated as hours * 15 miles per hour.
   - Total Vehicles are calculated as number of equipment for a given subphase * equipment utilization percent * number of construction subphase days as provided by the project sponsor.
2. Concrete Trucks and Dump Trucks are assumed to be similar to heavy-heavy duty trucks (HHDT) as defined in EMFAC2021. Emission factors are from EMFAC2021 ("Emission Rates" mode) for HHDT diesel vehicles (model years 2018 and up) in San Francisco County. RUNEX emission factors are specific to vehicle speed of 15 mph. All other emission factor types, except IDLEX emission factors, are for aggregated speed. IDLEX emission factors are from EMFAC2021 ("Project Analysis") for HHDT diesel vehicles in San Francisco County (model years 2018 and up). A weighted average emission factor for each year of construction was calculated across model years (2018-year of construction), weighted by the VMT of each model year. Emission factors were multiplied by the appropriate usage parameter based on the units. Emission factors in units of g/trip, g/mi, and g/vehicle/day, were multiplied by trips, miles, and total vehicles, respectively, in order to obtain mass emissions.
3. Another control scenario where HHDT diesel vehicles with model years within the past 10 years are calculated in Appendix E.

Abbreviations:

EMFAC2021 - California Air Resources Board EMission FACtor model
HHDT - heavy heavy-duty trucks
IDLEX - Idle exhaust emissions
lb - pound
NOx - nitrogen oxides
PM - Particulate Matter
PM10 - particulate matter less than 10 microns
PM2.5 - particulate matter less than 2.5 microns
ROG - reactive organic gases
RUNEX - Running exhaust emissions

References:

California Air Resources Board. EMFAC2021. Available online at: https://arb.ca.gov/emfac/emissions-inventory

Table 5
Construction Trips for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Phase	Subphase	Construction Days	Worker Trip Rates[1] (trips/day)	Vendor Trip Rates[1] (trips/day)	Hauling Trips[1] (one-way trips/subphase)	Trip Lengths[2] (miles/one way trip)			Worker VMT (miles)	Vendor VMT (miles)	Hauling VMT (miles)
						Worker	Vendor	Hauling			
Phase 1	Demolition	40	15	20	472	11.1	5	28	6,678	3,968	13,222
	Site Preparation	50	7.5	--	--	11.1	5	28	4,174	--	--
	Grading, Shoring, Excavating	159	**53**	**37**	**6,944**	11.1	5	28	**93,262**	**29,337**	**194,432**
	Building Construction	796	349	30	3,570	11.1	5	28	3,095,314	118,445	99,960
	Paving	64	13	15	270	11.1	5	28	8,904	4,762	7,560
	Architectural Coating	544	70	--	--	11.1	5	28	423,078	--	--
Phase 2	Demolition	57	15	60	1,309	11.1	5	28	9,516	16,963	36,650
	Site Preparation	80	7.5	--	--	11.1	5	28	6,678	--	--
	Grading, Shoring, Excavating	239	**40**	**31**	**8,328**	11.1	5	28	**106,137**	**37,223**	**233,184**
	Building Construction	676	610	20	5,800	11.1	5	28	4,589,606	67,059	162,400
	Paving	23	13	10	150	11.1	5	28	3,200	1,141	4,200
	Architectural Coating	409	122	--	--	11.1	5	28	555,369	--	--
Phase 3	Demolition	58	15	20	418	11.1	5	28	9,731	5,782	11,694
	Site Preparation	21	7.5	--	--	11.1	5	28	1,789	--	--
	Grading and Shoring	239	**35**	**16**	**2,333**	11.1	5	28	**92,670**	**19,406**	**65,324**
	Building Construction	577	365	10	1,897	11.1	5	28	2,345,936	28,621	53,116
	Paving	21	13	20	215	11.1	5	28	2,981	2,126	6,020
	Architectural Coating	261	73	--	--	11.1	5	28	212,570	--	--
Phase 4[3]	Demolition	73	15	20	3,181	11.1	5.0	28	12,164	7,227	89,071
	Site Preparation	44	7.5	--	--	11.1	5.0	28	3,710	--	--
	Grading, Shoring, Excavate	244	43	25	5,000	11.1	5.0	28	115,452	30,265	140,000
	Building Construction	732	599	20	3,100	11.1	5.0	28	4,879,846	72,636	86,800
	Paving	44	13	10	220	11.1	5.0	28	6,062	2,161	6,160
	Architectural Coating	457	120	--	--	11.1	5.0	28	609,326	--	--
Phase 5	Demolition	58	15	30	618	11.1	5	28	9,731	8,673	17,304
	Site Preparation	44	7.5	--	--	11.1	5	28	3,637	--	--
	Grading, Shoring, Excavation	244	43	35	8,100	11.1	5	28	115,452	42,371	226,800
	Building Construction	673	443	20	5,100	11.1	5	28	3,317,666	66,781	142,800
	Paving	44	13	10	215	11.1	5	28	6,161	2,197	6,020
	Architectural Coating	399	89	--	--	11.1	5	28	393,552	--	--
Phase 6	Demolition	**36**	15	20	1,190	11.1	5	28	**5,963**	**3,543**	**33,320**
	Site Preparation	21	7.5	--	--	11.1	5	28	1,789	--	--
	Grading, Shoring, Excavating	**169**	40	10	**1,800**	11.1	5	28	**75,048**	**8,361**	**50,400**
	Building Construction	**615**	**227**	10	**1,000**	11.1	5	28	**1,552,633**	**30,504**	**28,000**
	Paving	**54**	13	10	65	11.1	5	28	**7,453**	**2,657**	**1,820**
	Architectural Coating	**368**	**45**	--	--	11.1	5	28	**185,739**	--	--

EMFAC Data[4]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Francisco County Calendar Years 2024-2032 Annual Season	50% LDA, 25% LDT1, 25% LDT2	Gasoline
Vendor	Aggregated Model Year EMFAC2007 Vehicle Categories	100% MHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

1. Worker, vendor, and hauling trip numbers are calculated from CalEEMod default methodology as described in Appendix C section 4.6.1:
   - 1.25 workers per piece of equipment are assumed for all phases except building construction and architectural coating which results in one roundtrip per worker.
   - For building construction, the trips are proportional to the land use type and size.
   - For the architectural coating the trips are equal to 20% of the building construction
2. Worker and vendor trip lengths are based on CalEEMod Appendix G defaults for San Francisco County. Hauling trip length was provided by the Project Sponsor.
3. The Phase 4 Variant would include the development of the Authentic Church parcel.
4. Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions except for the controlled emissions for the vendor and hauling trips which used VMT-weighted emission factors for model year 2018 or newer MHDT and HHDT respectively.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 8a
Emission Calculations for Modeled Entrained Roadway Dust for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 1	Demolition	2024	40	15	20	472	900	1,200	708	2,808	1.2	0.17
	Site Preparation	2024	50	8	0	0	563	0	0	563	0.23	0.035
	Grading, Shoring, Excavating	2024	149	**53**	**37**	**6,525**	**11,810**	**8,337**	**9,787**	**29,935**	**12**	**1.9**
	Grading, Shoring, Excavating	2025	10	**53**	**37**	**419**	**758**	**535**	**629**	**1,922**	**0.80**	**0.12**
	Building Construction	2024	21	349	30	94	11,017	946	141	12,104	5.0	0.75
	Building Construction	2025	256	349	30	1,147	134,034	11,509	1,721	147,264	61	9.1
	Building Construction	2026	256	349	30	1,147	134,034	11,509	1,721	147,264	61	9.1
	Building Construction	2027	256	349	30	1,147	134,034	11,509	1,721	147,264	61	9.1
	Building Construction	2028	7.7	349	30	35	4,039	347	52	4,438	1.8	0.28
	Paving	2026	64	13	15	270	1,200	1,440	405	3,045	1.3	0.19
	Architectural Coating	2025	22	70	0	0	2,290	0	0	2,290	0.95	0.14
	Architectural Coating	2026	257	70	0	0	26,958	0	0	26,958	11	1.7
	Architectural Coating	2027	257	70	0	0	26,958	0	0	26,958	11	1.7
	Architectural Coating	2028	7.8	70	0	0	812	0	0	812	0.34	0.050
Phase 2	Demolition	2025	57	15	60	1,309	1,283	5,130	1,963	8,376	3.5	0.52
	Site Preparation	2025	80	8	0	0	900	0	0	900	0.37	0.056
	Grading, Shoring, Excavating	2025	138	**40**	**31**	**4,823**	**8,284**	**6,519**	**7,234**	**22,037**	**9.1**	**1.4**
	Grading, Shoring, Excavating	2026	101	**40**	**31**	**3,505**	**6,021**	**4,738**	**5,258**	**16,016**	**6.6**	**1.0**
	Building Construction	2026	160	610	20	1,373	146,463	4,802	2,060	153,325	63	10
	Building Construction	2027	261	610	20	2,238	238,656	7,825	3,357	249,838	103	16
	Building Construction	2028	255	610	20	2,189	233,426	7,653	3,283	244,362	101	15
	Paving	2028	23	13	10	150	431	345	225	1,001	0.41	0.062
	Architectural Coating	2027	153	122	0	0	28,051	0	0	28,051	12	1.7
	Architectural Coating	2028	256	122	0	0	46,796	0	0	46,796	19	2.9
Phase 3	Demolition	2026	58	15	20	418	1,311	1,749	626	3,686	1.5	0.23
	Site Preparation	2026	21	8	0	0	241	0	0	241	0.10	0.015
	Grading and Shoring	2026	95	**35**	**16**	**933**	**4,996**	**2,348**	**1,400**	**8,743**	**3.6**	**0.54**
	Grading and Shoring	2027	143	**35**	**16**	**1,400**	**7,494**	**3,521**	**2,100**	**13,115**	**5.4**	**0.81**
	Building Construction	2026	111	365	10	366	61,000	1,670	549	63,219	26	3.9
	Building Construction	2027	266	365	10	873	145,523	3,984	1,310	150,817	62	9.4
	Building Construction	2028	200	365	10	658	109,641	3,002	987	113,629	47	7.1
	Paving	2027	21	13	20	215	402	643	323	1,367	0.57	0.085
	Architectural Coating	2027	66	73	0	0	7,182	0	0	7,182	3.0	0.45
	Architectural Coating	2028	196	73	0	0	21,467	0	0	21,467	8.9	1.3
Phase 4[2]	Demolition	2027	73	15	20	3,181	1,639	2,186	4,772	8,597	3.6	0.53
	Site Preparation	2027	44	7.5	0	0	500	0	0	500	0.21	0.031
	Grading, Shoring, Excavate	2027	105	43	25	2,143	6,668	3,923	3,214	13,805	5.7	0.86
	Grading, Shoring, Excavate	2028	139	43	25	2,857	8,891	5,230	4,286	18,407	7.6	1.1
	Building Construction	2028	223	599	20	943	200,044	6,682	1,414	208,140	86	13
	Building Construction	2029	266	599	20	1,125	238,615	7,970	1,687	248,272	103	15
	Building Construction	2030	244	599	20	1,032	219,002	7,315	1,548	227,866	94	14
	Paving	2030	44	13	10	220	817	654	330	1,801	0.75	0.11
	Architectural Coating	2029	218	120	0	0	39,202	0	0	39,202	16	2.4
	Architectural Coating	2030	239	120	0	0	42,917	0	0	42,917	18	2.7

Table 8a
Emission Calculations for Modeled Entrained Roadway Dust for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 5	Demolition	2028	58	15	30	618	1,311	2,623	927	4,861	2.0	0.30
	Site Preparation	2028	44	8	0	0	490	0	0	0,490	0.20	0.030
	Grading, Shoring, Excavation	2028	119	43	35	3,954	7,595	6,254	5,930	19,779	8.2	1.2
	Grading, Shoring, Excavation	2029	125	43	35	4,146	7,965	6,559	6,220	20,744	8.6	1.3
	Building Construction	2029	186	443	20	1,406	123,261	5,568	2,109	130,938	54	8.1
	Building Construction	2030	266	443	20	2,012	176,433	7,969	3,019	187,421	78	12
	Building Construction	2031	222	443	20	1,682	147,430	6,659	2,522	156,612	65	10
	Paving	2030	44	13	10	215	830	664	323	1,817	0.75	0.11
	Architectural Coating	2030	182	89	0	0	24,152	0	0	24,152	10	1.5
	Architectural Coating	2031	217	89	0	0	28,888	0	0	28,888	12	1.8
Phase 6	Demolition	2029	**36**	15	20	1,190	**804**	**1,071**	1,785	**3,660**	1.5	**0.23**
	Site Preparation	2029	21	8	0	0	241	0	0	241	0.10	0.015
	Grading, Shoring, Excavating	2029	**147**	40	10	**1566**	**8,799**	**2,200**	**2,349**	**13,347**	**5.5**	**0.83**
	Grading, Shoring, Excavating	2030	**22**	40	10	**234**	**1,316**	**329**	**351**	**1,996**	**0.83**	**0.12**
	Building Construction	2030	**235**	**227**	10	**383**	**80,107**	**3,532**	**574**	**84,213**	**35**	**5.2**
	Building Construction	2031	260	**227**	10	**423**	**88,603**	3,906	**635**	**93,145**	**39**	**5.8**
	Building Construction	2032	**119**	**227**	10	**194**	**40,539**	**1,787**	**291**	**42,617**	**18**	**2.6**
	Paving	2031	**54**	13	10	65	**1,004**	**804**	98	**1,906**	**0.79**	**0.12**
	Architectural Coating	2031	**238**	**45**	0	0	**16,203**	0	0	**16,203**	**6.7**	**1.0**
	Architectural Coating	2032	**130**	**45**	0	0	**8,829**	0	0	**8,829**	**3.7**	**0.55**

Notes:

1. Trip rates for worker, vendor, and hauling are obtained from Table 5. Trip lengths for worker, vendor, and hauling were set to the modeled length of 1.5 miles.
2. The Phase 4 Variant would include the development of the Authentic Church parcel.

Abbreviations:

VMT - vehicle miles traveled
CalEEMod - California Emissions Estimator Model
$PM_{2.5}$ - particulate matter less than 2.5 microns
PM_{10} - particulate matter less than 10 microns
lb - pound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 8b
Emission Calculations for Entrained Roadway Dust Mass Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 1	Demolition	2024	40	15	20	472	6,678	3,968	13,222	23,868	10	1.5
	Site Preparation	2024	50	8	0	0	4,174	0	0	4,174	1.7	0.26
	Grading, Shoring, Excavating	2024	149	**53**	**37**	**6,525**	**87,634**	**27,567**	**182,699**	**297,900**	**123**	**18**
	Grading, Shoring, Excavating	2025	10	**53**	**37**	**419**	**5,628**	**1,770**	**11,733**	**19,131**	**7.9**	**1.2**
	Building Construction	2024	21	349	30	94	81,742	3,128	2,640	87,510	36	5.4
	Building Construction	2025	256	349	30	1,147	994,533	38,057	32,117	1,064,707	441	66
	Building Construction	2026	256	349	30	1,147	994,533	38,057	32,117	1,064,707	441	66
	Building Construction	2027	256	349	30	1,147	994,533	38,057	32,117	1,064,707	441	66
	Building Construction	2028	7.7	349	30	35	29,972	1,147	968	32,087	13	2.0
	Paving	2026	64	13	15	270	8,904	4,762	7,560	21,226	8.8	1.3
	Architectural Coating	2025	22	70	0	0	16,989	0	0	16,989	7.0	1.1
	Architectural Coating	2026	257	70	0	0	200,030	0	0	200,030	83	12
	Architectural Coating	2027	257	70	0	0	200,030	0	0	200,030	83	12
	Architectural Coating	2028	7.8	70	0	0	6,028	0	0	6,028	2.5	0.37
Phase 2	Demolition	2025	57	15	60	1,309	9,516	16,963	36,650	63,129	26	3.9
	Site Preparation	2025	80	8	0	0	6,678	0	0	6,678	2.8	0.41
	Grading, Shoring, Excavating	2025	138	**40**	**31**	**4,823**	**61,464**	**21,556**	**135,038**	**218,058**	**90**	**14**
	Grading, Shoring, Excavating	2026	101	**40**	**31**	**3,505**	**44,673**	**15,667**	**98,146**	**158,486**	**66**	**10**
	Building Construction	2026	160	610	20	1,373	1,086,757	15,879	38,454	1,141,089	472	71
	Building Construction	2027	261	610	20	2,238	1,770,831	25,874	62,660	1,859,364	770	115
	Building Construction	2028	255	610	20	2,189	1,732,018	25,307	61,286	1,818,611	753	113
	Paving	2028	23	13	10	150	3,200	1,141	4,200	8,541	3.5	0.53
	Architectural Coating	2027	153	122	0	0	208,142	0	0	208,142	86	13
	Architectural Coating	2028	256	122	0	0	347,227	0	0	347,227	144	22
Phase 3	Demolition	2026	58	15	20	418	9,731	5,782	11,694	27,207	11	1.7
	Site Preparation	2026	21	8	0	0	1,789	0	0	1,789	0.74	0.11
	Grading and Shoring	2026	95	**35**	**16**	**933**	**37,068**	**7,763**	**26,130**	**70,960**	**29**	**4.4**
	Grading and Shoring	2027	143	**35**	**16**	**1,400**	**55,602**	**11,644**	**39,194**	**106,440**	**44**	**6.6**
	Building Construction	2026	111	365	10	366	452,621	5,522	10,248	468,391	194	29
	Building Construction	2027	266	365	10	873	1,079,781	13,173	24,448	1,117,403	463	69
	Building Construction	2028	200	365	10	658	813,534	9,925	18,420	841,879	349	52
	Paving	2027	21	13	20	215	2,981	2,126	6,020	11,127	4.6	0.69
	Architectural Coating	2027	66	73	0	0	53,287	0	0	53,287	22	3.3
	Architectural Coating	2028	196	73	0	0	159,283	0	0	159,283	66	10
Phase 4[2]	Demolition	2027	73	15	20	3,181	12,164	7,227	89,071	108,462	45	6.7
	Site Preparation	2027	44	7.5	0	0	3,710	0	0	3,710	1.5	0.23
	Grading, Shoring, Excavate	2027	105	43	25	2,143	49,479	12,971	60,000	122,450	51	7.6
	Grading, Shoring, Excavate	2028	139	43	25	2,857	65,973	17,294	80,000	163,267	68	10
	Building Construction	2028	223	599	20	943	1,484,327	22,094	26,402	1,532,823	635	95
	Building Construction	2029	266	599	20	1,125	1,770,521	26,354	31,493	1,828,368	757	114
	Building Construction	2030	244	599	20	1,032	1,624,998	24,188	28,905	1,678,091	695	104
	Paving	2030	44	13	10	220	6,062	2,161	6,160	14,383	6.0	0.89
	Architectural Coating	2029	218	120	0	0	290,880	0	0	290,880	120	18
	Architectural Coating	2030	239	120	0	0	318,447	0	0	318,447	132	20

Table 8b
Emission Calculations for Entrained Roadway Dust Mass Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Subphase	Year	Construction Days	Worker Trips (trips/day)	Vendor Trips (trips/day)	Hauling Trips (total trips)	Worker VMT[1] (miles)	Vendor VMT[1] (miles)	Hauling VMT[1] (miles)	Total VMT (miles)	Total Emissions (lb)	
											PM_{10}	PM_{25}
Phase 5	Demolition	2028	58	15	30	618	9,731	8,673	17,304	35,708	14.8	2.2
	Site Preparation	2028	44	8	0	0	3,637	0	0	3,637	1.5	0.23
	Grading, Shoring, Excavation	2028	119	43	35	3,954	56,352	20,681	110,700	187,733	78	12
	Grading, Shoring, Excavation	2029	125	43	35	4,146	59,100	21,690	116,100	196,890	82	12
	Building Construction	2029	186	443	20	1,406	914,600	18,410	39,366	972,376	403	60
	Building Construction	2030	266	443	20	2,012	1,309,133	26,352	56,348	1,391,833	576	86
	Building Construction	2031	222	443	20	1,682	1,093,933	22,020	47,085	1,163,038	481	72
	Paving	2030	44	13	10	215	6,161	2,197	6,020	14,378	6.0	0.89
	Architectural Coating	2030	182	89	0	0	179,207	0	0	179,207	74	11
	Architectural Coating	2031	217	89	0	0	214,345	0	0	214,345	89	13
Phase 6	Demolition	2029	**36**	**15**	20	1,190	**5,963**	**3,543**	33,320	**42,825**	**18**	2.7
	Site Preparation	2029	21	8	0	0	1,789	0	0	1,789	0.74	0.11
	Grading, Shoring, Excavating	2029	**147**	40	10	**1,566**	**65,286**	**7,274**	**43,844**	**116,403**	**48**	**7.2**
	Grading, Shoring, Excavating	2030	**22**	40	10	**234**	**9,762**	**1,088**	**6,556**	**17,406**	**7.2**	**1.1**
	Building Construction	2030	**235**	227	10	**383**	**594,396**	**11,678**	**10,719**	**616,793**	**255**	**38**
	Building Construction	2031	260	227	10	**423**	**657,437**	**12,916**	**11,856**	**682,210**	**282**	**42**
	Building Construction	2032	**119**	227	10	**194**	**300,800**	**5,910**	**5,425**	**312,134**	**129**	**19**
	Paving	2031	**54**	13	10	65	**7,453**	**2,657**	1,820	**11,930**	**4.9**	**0.74**
	Architectural Coating	2031	**238**	**45**	0	0	**120,226**	0	0	**120,226**	**50**	**7.5**
	Architectural Coating	2032	**130**	**45**	0	0	**65,513**	0	0	**65,513**	**27**	**4.1**

Notes:

1. Trip rates for worker, vendor, and hauling are obtained from Table 5. Trip lengths for worker, vendor, and hauling were set to the modeled length of 11.1, 4.96, and 28 miles respectively.
2. The Phase 4 Variant would include the development of the Authentic Church parcel.

Abbreviations:

VMT - vehicle miles traveled
CalEEMod - California Emissions Estimator Model
$PM_{2.5}$ - particulate matter less than 2.5 microns
PM_{10} - particulate matter less than 10 microns
lb - pound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 10
Fugitive Dust Emissions from Off-Road Grading Activity for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Year	Maximum Area Disturbed[1]	Grading VMT[2]	$PM_{2.5}$ Emission Factor[3]	Emissions w/o Watering[4,5]		Emissions w/ Watering[4,5]	
					$PM_{2.5}$		$PM_{2.5}$	
		acre/day	mile/day	lb/VMT	lb/day	ton/yr	lb/day	ton/yr
Phase 1	2024	2.00	1.38	0.17	0.23	0.017	0.060	0.0044
	2025				0.23	0.0011	0.060	2.9E-04
Phase 2	2025	2.00	1.38		0.23	0.016	0.060	0.0041
	2026				0.23	0.012	0.060	0.0030
Phase 3	2026	1.00	0.69		0.11	0.0055	0.030	0.0014
	2027				0.11	0.0082	0.030	0.0021
Phase 4	2027	1.00	0.69		0.11	0.0060	0.030	0.0016
	2028				0.11	0.0080	0.030	0.0021
Phase 5	2028	1.00	0.69		0.11	0.0068	0.030	0.0018
	2029				0.11	0.0072	0.030	0.0019
Phase 6	2029	**0.50**	**0.34**		**0.06**	**0.0042**	**0.015**	**0.0011**
	2030				**0.06**	**0.0006**	**0.015**	**0.0002**

Notes:

1. Maximum graded area is based on Project-specific estimate following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.1 Grading Equipment Passes.
2. VMT per day calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equation is:
   VMT = A_S/W_b x (43,560 sqft/acre)/(5,280 ft/mile), where:

   A_S = A_S, acres graded per day (varies by sub-activity)
   12 = W_b, blade width of grading equipment (CalEEMod® default)
3. Emission factors calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equations are:
   $EF_{PM10} = 0.051 \times (S)^{2.0} \times F_{PM10}$
   $EF_{PM2.5} = 0.04 \times (S)^{2.5} \times F_{PM2.5}$ where:

   7.1 = S, mean vehicle speed (mph) (AP-42 default)
   0.6 = F_{PM10}, PM_{10} scaling factor (AP-42 default)
   0.031 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor (AP-42 default)
4. Fugitive PM emissions will be controlled by watering the construction site three times per day, which is estimated to reduce emissions by 74% per CalEEMod® recommendation.
5. The mass emissions shown below are converted from ton per year to gram per second for the health risk assessment. The conversion is based on 365 days per year and 13 hours per day, consistent with the modeled hours from 7 AM - 8 PM.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
ft - feet
lb - pounds
mph - miles per hour
PM2.5 - particulate matter less than 2.5 microns
VMT - vehicle miles traveled
yr - years

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 11
Fugitive Dust Emissions from Truck Loading Activity for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Subphase	Year	Number of Days	Haul Trips	Total Material Loaded[1]	Material Loaded	Emission Factor[2]	Emissions w/o Watering[3,4]		Emissions w/ Watering[3,4]	
							$PM_{2.5}$	$PM_{2.5}$		$PM_{2.5}$	
			days	# trips	ton	ton	lb/ton	lb/day	ton/yr	lb/day	ton/yr
Phase 1	Demolition	2024	40	472	1,224	1,224	3.5E-05	0.0011	2.2E-05	2.8E-04	5.6E-06
	Grading, Shoring, Excavating	2024	149	**6,525**	**62,765**	**58,978**		**0.014**	**0.0010**	**0.0036**	**2.7E-04**
	Grading, Shoring, Excavating	2025	10	**419**		**3,788**		**0.014**	**6.7E-05**	**0.0036**	**1.7E-05**
Phase 2	Demolition	2025	57	1,309	16,257	16,257		0.010	2.9E-04	0.0026	7.5E-05
	Grading, Shoring, Excavating	2025	138	**4,823**	**42,622**	**24,682**		**0.0063**	**4.4E-04**	**0.0016**	**1.1E-04**
	Grading, Shoring, Excavating	2026	101	**3,505**		**17,939**		**0.0063**	**3.2E-04**	**0.0016**	**8.2E-05**
Phase 3	Demolition	2026	58	418	10,374	10,374		0.0063	1.8E-04	0.0016	4.8E-05
	Grading and Shoring	2026	95	**933**	**28,349**	**11,340**		**0.0042**	**2.0E-04**	**0.0011**	**5.2E-05**
	Grading and Shoring	2027	143	**1,400**		**17,010**		**0.0042**	**3.0E-04**	**0.0011**	**7.8E-05**
Phase 4	Demolition	2027	73	3,181	14,633	14,633		0.0071	2.6E-04	0.0018	6.7E-05
	Grading, Shoring, Excavate	2027	105	2,143	52,526	22,511		0.0076	4.0E-04	0.0020	1.0E-04
	Grading, Shoring, Excavate	2028	139	2,857		30,015		0.0076	5.3E-04	0.0020	1.4E-04
Phase 5	Demolition	2028	58	618	7,680	7,680		0.0046	1.4E-04	0.0012	3.5E-05
	Grading, Shoring, Excavation	2028	119	3,954	78,783	38,454		0.011	6.8E-04	0.0030	1.8E-04
	Grading, Shoring, Excavation	2029	125	4,146		40,329		0.011	7.1E-04	0.0030	1.8E-04
Phase 6	Demolition	2029	**36**	1,190	14,801	14,801		**0.015**	**2.6E-04**	**0.0038**	**6.8E-05**
	Grading, Shoring, Excavating	2029	**147**	**1,566**	42,830	**37,259**		**0.0090**	**6.6E-04**	**0.0023**	**1.7E-04**
	Grading, Shoring, Excavating	2030	**22**	**234**		**5,571**		**0.0090**	**9.8E-05**	**0.0023**	**2.6E-05**

Notes:

1. Total materials loaded for demolition phases were the building waste converted from square feet to tons assuming an average soil density of 1.5 grams per cubic centimeter, per the CalEEMod® User's Guide, Appendix C Section 4.4.3 Truck Loading. Total materials loaded for grading phases were the total material moved during grading.
2. Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C, which is based on AP-42, Section 13.2.4 for aggregate handling. The equation is:
   $EF = k \times (0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$, where the following default values are used:
   - 0.35 = k_{PM10}, PM_{10} particle size multiplier
   - 0.053 = $k_{PM2.5}$, $PM_{2.5}$ particle size multiplier
   - 4.6 = mean wind speed (U), metes per second
   - 10.3 = mean wind speed (U), miles per hour
   - 12 = material moisture content (M), %
3. Fugitive PM emissions will be controlled by watering the construction site three times per day, which is estimated to reduce emissions by 74% per CalEEMod® recommendation.
4. The mass emissions shown below are converted from ton per year to gram per second for the health risk assessment. The conversion is based on 365 days per year and 13 hours per day, consistent with the modeled hours from 7 AM - 8 PM.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
lbs - pounds
PM2.5 - particulate matter less than 2.5 microns

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 12
Fugitive Dust Emissions from Off-Road Bulldozing Activity for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Subphase	Year	Number of Days	CalEEMod Equipment	Total Equipment Work Hours[1] (hours/day)	Utilization	$PM_{2.5}$ Emission Factor[2] (lbs/hour)	Emissions w/o Watering[3,4]		Emissions w/ Watering[3,4]	
								$PM_{2.5}$		$PM_{2.5}$	
			days					lb/day	ton/yr	lb/day	ton/yr
Phase 1	Demolition	2024	40	Rubber Tired Dozers	16	40%	0.41	2.6	0.053	0.69	0.014
	Site Preparation	2024	50	Rubber Tired Dozers	8	45%		1.5	0.037	0.39	0.010
	Grading, Shoring, Excavating	2024	149	Rubber Tired Dozers	8	**6%**		**0.21**	**0.015**	**0.053**	**0.0040**
	Grading, Shoring, Excavating	2025	10	Rubber Tired Dozers	8	**6%**		**0.21**	**0.0010**	**0.053**	**2.6E-04**
Phase 2	Demolition	2025	57	Rubber Tired Dozers	16	40%		2.6	0.075	0.69	0.020
	Site Preparation	2025	80	Rubber Tired Dozers	8	45%		1.5	0.060	0.39	0.015
	Grading, Shoring, Excavating	2025	138	Rubber Tired Dozers	8	**4%**		**0.15**	**0.010**	**0.038**	**0.0026**
	Grading, Shoring, Excavating	2026	101	Rubber Tired Dozers	8	**4%**		**0.15**	**0.0073**	**0.038**	**0.0019**
Phase 3	Demolition	2026	58	Rubber Tired Dozers	16	40%		2.6	0.077	0.69	0.020
	Site Preparation	2026	21	Rubber Tired Dozers	8	45%		1.5	0.016	0.39	0.0041
	Grading and Shoring	2026	95	Rubber Tired Dozers	8	**4%**		**0.15**	**0.0069**	**0.038**	**0.0018**
	Grading and Shoring	2027	143	Rubber Tired Dozers	8	**4%**		**0.15**	**0.010**	**0.038**	**0.0027**
Phase 4	Demolition	2027	73	Rubber Tired Dozers	16	40%		2.6	0.10	0.69	0.025
	Site Preparation	2027	44	Rubber Tired Dozers	8	45%		1.5	0.033	0.39	0.0086
	Grading, Shoring, Excavate	2027	105	Rubber Tired Dozers	8	5%		0.17	0.0087	0.043	0.0023
	Grading, Shoring, Excavate	2028	139	Rubber Tired Dozers	8	5%		0.17	0.012	0.043	0.0030
Phase 5	Demolition	2028	58	Rubber Tired Dozers	16	40%		2.6	0.077	0.69	0.020
	Site Preparation	2028	44	Rubber Tired Dozers	8	45%		1.5	0.032	0.39	0.0084
	Grading, Shoring, Excavation	2028	119	Rubber Tired Dozers	8	5%		0.17	0.010	0.043	0.0026
	Grading, Shoring, Excavation	2029	125	Rubber Tired Dozers	8	5%		0.17	0.010	0.043	0.0027
Phase 6	Demolition	2029	**36**	Rubber Tired Dozers	16	40%		2.6	**0.047**	0.69	**0.012**
	Site Preparation	2029	21	Rubber Tired Dozers	8	45%		1.5	0.016	0.39	0.0041
	Grading, Shoring, Excavating	2029	**147**	Rubber Tired Dozers	8	5%		0.17	**0.012**	0.043	**0.0032**
	Grading, Shoring, Excavating	2030	**22**	Rubber Tired Dozers	8	5%		0.17	**0.0018**	0.043	**4.7E-04**

Notes:

1. Construction schedule is based on Project-specific estimate. Includes planned hours for all tracked dozers to be used during the given phase.
2. Emission factor calculated following guidance in the CalEEMod® User's Guide, Appendix C Section 4.4.2 Bulldozing, which is based on AP-42, Section 11.9 for bulldozing equipment. The equation is: $EF_{PM2.5} = C_{TSP} \times s^{1.2} / M^{1.3} \times F_{PM2.5}$, where the following default values are used:

   5.7 = C_{TSP}, arbitrary coefficient
   6.9 = s, material silt content (%)
   7.9 = M, material moisture content (%)
   0.105 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor
3. Fugitive emissions were controlled by watering three times per day and a control efficiency of 74% (CalEEMod® default) was used in estimating the emissions.
4. The mass emissions shown below are converted from ton per year to gram per second for the health risk assessment. The conversion is based on 365 days per year and 13 hours per day, consistent with the modeled hours from 7 AM - 8 PM.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - emission factor
lbs - pounds
PM2.5 - particulate matter less than 2.5 microns
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 13
Estimated Emissions from Construction Paving Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Land Use Type	Asphalt-Paved Area (acre)[1]	Asphalt Paving Off-Gassing ROG Emission Factor (lb/acre)[2]	Asphalt Paving Off-Gassing ROG Emissions (lb/activity)
Phase 1	Paving	Parking	**11**	2.62	**28**
Phase 2	Paving	Parking	**6.1**		**16**
Phase 3	Paving	Parking	**6.4**		**17**
Phase 4	Paving	Parking	**8.4**		**22**
Phase 5	Paving	Parking	**6.6**		**17**
Phase 6	Paving	Parking	**3.5**		**9.2**
Total	--	--	**42**	--	**110**

Notes:

1. This analysis assumes that all parking areas are asphalt paving areas.
2. Emission factor from CalEEMod User's Guide, Appendix A.

Abbreviations:

lb - pound
ROG - reactive organic gas
sqft - square foot

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 14
Estimated Emissions from Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Inputs[1,2]

Parameter		Input	Units
Residential Surface Area to Floor Area Ratio		2.7	--
Non-Residential Surface Area to Floor Area Ratio		2.0	--
Painted Stripes Area in Parking Structures		6%	--
Painted Building Area in Parking Structures		5%	--
Application Rate		100%	--
Fraction of Surface Area	Non-Parking Interior Surfaces	75%	--
	Non-Parking Exterior Shell	25%	--
	Parking Interior Surfaces	90%	--
	Parking Exterior Shell	10%	--
Indoor Paint or Parking Stripes VOC Content		100	g/L
Outdoor Paint VOC Content		150	g/L

Proposed Revised Variant Emissions by Phase

Phase	Land Use Type	Description	CalEEMod® Land Use	Square Footage[2] (square feet)	Building Surface Area[2] (square feet)	Painted Parking Stripes Area[2] (square feet)	Architectural Coating VOC emissions[3] (lbs)	Architectural Coating VOC Emissions by Phase (lbs)
Phase 1	Residential	Residential	Apartments Mid Rise	**528,930**	**1,428,111**	**--**	**7,449**	**7,935**
	Retail	Retail Sales and Services	Regional Shopping Center	10,000	20,000	--	104	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	13,000	26,000	--	136	
	Parking	Structured Parking	Enclosed Parking with Elevator	**472,123**	**23,606**	**28,327**	**246**	
Phase 2	Residential	Residential	Apartments Mid Rise	**816,156**	**2,203,620**	**--**	**11,494**	**12,009**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	376	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	60,984	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**266,999**	**13,350**	**16,020**	**139**	
Phase 3	Residential	Residential	Apartments Mid Rise	**522,407**	**1,410,499**	**--**	**7,357**	**8,087**
	Retail	Retail Sales and Services	Regional Shopping Center	20,000	40,000	--	209	
	Commercial	Non-Retail Sales and Services	General Office Building	**24,000**	**48,000**	--	**250**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	12,000	24,000	--	125	
	Parking	Structured Parking	Enclosed Parking with Elevator	**280,499**	**14,025**	**16,830**	**146**	
Phase 4	Residential	Residential	Apartments Mid Rise	**624,498**	**1,686,143**	--	**8,795**	**10,477**
	Retail	Retail Sales and Services	Regional Shopping Center	58,000	116,000	--	605	
	Commercial	Non-Retail Sales and Services	General Office Building	47,000	94,000	--	490	
	Recreational	Parks, Plazas, and Open Space	City Park	30,492	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	0	
	Cultural, Institutional, Educational	Institutional	General Office Building	38,000	76,000	--	396	
	Parking	Structured Parking	Enclosed Parking with Elevator	**365,249**	**18,262**	**21,915**	**191**	
Phase 5	Residential	Residential	Apartments Mid Rise	**683,997**	**1,846,793**	--	**9,633**	**10,418**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	376	
	Commercial	Non-Retail Sales and Services	General Office Building	**25,000**	**50,000**	--	**261**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**285,749**	**14,287**	**17,145**	**149**	
Phase 6	Residential	Residential	Apartments Mid Rise	**357,999**	**966,596**	--	**5,042**	**5,121**
	Retail	Retail Sales and Services	Regional Shopping Center	--	--	--	--	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	39,204	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**152,249**	**7,612**	**9,135**	**79**	
Total VOC Emissions (lbs)								**54,047**

Table 14
Estimated Emissions from Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant Emissions by Year

Phase	Year	Work Days per Year	VOC Emissions by Phase (lbs)	VOC Emissions by Year (lbs)
Phase 1	2025	22	7,935	319
	2026	257		3,752
	2027	257		3,752
	2028	8		113
Phase 2	2027	153	12,009	4,501
	2028	256		7,508
Phase 3	2027	66	8,087	2,027
	2028	196		6,060
Phase 4	2029	218	10,477	5,001
	2030	239		5,475
Phase 5	2030	182	10,418	4,744
	2031	217		5,674
Phase 6	2031	238	5,121	3,315
	2032	130		1,806

Notes:

[1] Inputs and assumptions are consistent with CalEEMod® 2022.1 for BAAQMD. Indoor and outdoor paint VOC content parameters were obtained from CalEEMod Appendix G Table G-17 Architectural Coating Emissions Factors by Air District.

[2] Building square footage is based on Methodology Report. Residential building surface area assumed to be 2.7 times the square footage and non-residential square footage is assumed to be 2.0 times the square footage, consistent with CalEEMod® Appendix C. Parking surface area is representative of the surface area of the lot that is painted, in accordance with the CalEEMod default of 6% for stripes and 5% for the building.

[3] Calculated based on CalEEMod® assumption that 1 gallon of paint covers 180 square feet and that building area is assumed to be 75% indoors and 25% outdoors except for parking land uses which are 90% indoors and 10% outdoors.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - Emission Factor
g - grams
L - liter
lb - pound
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 15
Estimated Emissions from Controlled Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Inputs[1,2]

Parameter		Input	Units
Residential Surface Area to Floor Area Ratio		2.7	--
Non-Residential Surface Area to Floor Area Ratio		2.0	--
Painted Stripes Area in Parking Structures		6%	--
Painted Building Area in Parking Structures		5%	--
Application Rate		100%	--
Fraction of Surface Area	Non-Parking Interior Surfaces	75%	--
	Non-Parking Exterior Shell	25%	--
	Parking Interior Surfaces	90%	--
	Parking Exterior Shell	10%	--
Super-Compliant Indoor Paint or Parking Stripes VOC Content		10	g/L
Outdoor Paint VOC Content		20	g/L

Proposed Revised Variant Emissions by Phase

Phase	Land Use Type	Description	CalEEMod® Land Use	Square Footage[2] (square feet)	Building Surface Area[2] (square feet)	Painted Parking Stripes Area[2] (square feet)	Architectural Coating VOC emissions[3] (lbs)	Architectural Coating VOC Emissions by Phase (lbs)
Phase 1	Residential	Residential	Apartments Mid Rise	**528,930**	**1,428,111**	**--**	**828**	**879**
	Retail	Retail Sales and Services	Regional Shopping Center	10,000	20,000	--	12	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	13,000	26,000	--	15	
	Parking	Structured Parking	Enclosed Parking with Elevator	**472,123**	**23,606**	**28,327**	**25**	
Phase 2	Residential	Residential	Apartments Mid Rise	**816,156**	**2,203,620**	**--**	**1,277**	**1,333**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	42	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	60,984	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**266,999**	**13,350**	**16,020**	**14**	
Phase 3	Residential	Residential	Apartments Mid Rise	**522,407**	**1,410,499**	**--**	**817**	**897**
	Retail	Retail Sales and Services	Regional Shopping Center	20,000	40,000	--	23	
	Commercial	Non-Retail Sales and Services	General Office Building	**24,000**	**48,000**	--	**28**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	12,000	24,000	--	14	
	Parking	Structured Parking	Enclosed Parking with Elevator	**280,499**	**14,025**	**16,830**	**15**	
Phase 4	Residential	Residential	Apartments Mid Rise	**624,498**	**1,686,143**	--	**977**	**1,162**
	Retail	Retail Sales and Services	Regional Shopping Center	58,000	116,000	--	67	
	Commercial	Non-Retail Sales and Services	General Office Building	47,000	94,000	--	54	
	Recreational	Parks, Plazas, and Open Space	City Park	30,492	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	38,000	76,000	--	44	
	Parking	Structured Parking	Enclosed Parking with Elevator	**365,249**	**18,262**	**21,915**	**19**	
Phase 5	Residential	Residential	Apartments Mid Rise	**683,997**	**1,846,793**	--	**1,070**	**1,156**
	Retail	Retail Sales and Services	Regional Shopping Center	36,000	72,000	--	42	
	Commercial	Non-Retail Sales and Services	General Office Building	**25,000**	**50,000**	--	**29**	
	Recreational	Parks, Plazas, and Open Space	City Park	43,560	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**285,749**	**14,287**	**17,145**	**15**	
Phase 6	Residential	Residential	Apartments Mid Rise	**357,999**	**966,596**	--	**560**	**568**
	Retail	Retail Sales and Services	Regional Shopping Center	--	--	--	--	
	Commercial	Non-Retail Sales and Services	General Office Building	--	--	--	--	
	Recreational	Parks, Plazas, and Open Space	City Park	39,204	--	--	--	
	Recreational	Hotel	Hotel	--	--	--	--	
	Cultural, Institutional, Educational	Institutional	General Office Building	--	--	--	--	
	Parking	Structured Parking	Enclosed Parking with Elevator	**152,249**	**7,612**	**9,135**	**8.1**	
Total VOC Emissions (lbs)								**5,997**

Table 15
Estimated Emissions from Controlled Construction Architectural Coating Off-Gassing for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant Emissions by Year

Phase	Year	Work Days per Year	VOC Emissions by Phase (lbs)	VOC Emissions by Year (lbs)
Phase 1	2025	22	879	35
	2026	257		416
	2027	257		416
	2028	8		13
Phase 2	2027	153	1,333	500
	2028	256		833
Phase 3	2027	66	897	225
	2028	196		672
Phase 4	2029	218	1,162	555
	2030	239		608
Phase 5	2030	182	1,156	526
	2031	217		630
Phase 6	2031	238	568	368
	2032	130		200

Notes:

[1] Inputs and assumptions are consistent with CalEEMod® 2022.1 for BAAQMD. Indoor and outdoor paint VOC content parameters were obtained from CalEEMod Appendix G Table G-17 Architectural Coating Emissions Factors by Air District. Supercompliant paints are used starting in Phase 2.

[2] Building square footage is based on Methodology Report. Residential building surface area assumed to be 2.7 times the square footage and non-residential square footage is assumed to be 2.0 times the square footage, consistent with CalEEMod® Appendix C. Parking surface area is representative of the surface area of the lot that is painted, in accordance with the CalEEMod default of 6% for stripes and 5% for the building.

[3] Calculated based on CalEEMod® assumption that 1 gallon of paint covers 180 square feet and that building area is assumed to be 75% indoors and 25% outdoors except for parking land uses which are 90% indoors and 10% outdoors.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
EF - Emission Factor
g - grams
L - liter
lb - pound
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb / yr			
Phase 1	Demolition	2024	On-Site Exhaust	40	410	18	17
			Mobile Exhaust	3.6	139	1.0	0.93
			Roadway Dust	--	--	15	3.0
	Site Preparation	2024	On-Site Exhaust	28	303	13	12
			Mobile Exhaust	1.1	0.80	0.019	0.017
			Roadway Dust	--	--	1.9	0.31
	Grading, Shoring, Excavating	2024	On-Site Exhaust	**53**	**654**	**20**	**19**
			Mobile Exhaust	**46**	**1,796**	**13**	**12**
			Roadway Dust	--	--	**187**	**39**
		2025	On-Site Exhaust	**3.1**	**37**	**1.1**	**1.0**
			Mobile Exhaust	**2.8**	**109**	**0.78**	**0.75**
			Roadway Dust	--	--	**12**	**2.5**
	Building Construction	2024	On-Site Exhaust	4.9	65	1.6	1.5
			Mobile Exhaust	23	54	0.64	0.59
			Roadway Dust	--	--	41	6.9
		2025	On-Site Exhaust	55	757	17	15
			Mobile Exhaust	267	614	7.4	6.9
			Roadway Dust	--	--	499	84
		2026	On-Site Exhaust	52	723	14	13
			Mobile Exhaust	255	575	7.0	6.6
			Roadway Dust	--	--	499	84
		2027	On-Site Exhaust	49	694	12	11
			Mobile Exhaust	246	540	6.6	6.2
			Roadway Dust	--	--	499	84
		2028	On-Site Exhaust	1.4	20	0.30	0.28
			Mobile Exhaust	7.2	15	0.19	0.18
			Roadway Dust	--	--	15	2.5
	Paving	2026	On-Site Exhaust	15	137	6.6	6.1
			Mobile Exhaust	3.3	82	0.60	0.58
			Roadway Dust	--	--	12	2.3
			Paving	**28**	--	--	--
	Architectural Coating	2025	On-Site Exhaust	3.5	24	0.76	0.70
			Mobile Exhaust	4.5	3.0	0.074	0.068
			Roadway Dust	--	--	7.7	1.3
			Architectural Coating	**319**	--	--	--
		2026	On-Site Exhaust	39	279	7.5	6.9
			Mobile Exhaust	50	33	0.83	0.77
			Roadway Dust	--	--	91	15
			Architectural Coating	**3,752**	--	--	--
		2027	On-Site Exhaust	37	270	6.2	5.7
			Mobile Exhaust	48	31	0.79	0.73
			Roadway Dust	--	--	91	15
			Architectural Coating	**3,752**	--	--	--
		2028	On-Site Exhaust	1.1	7.9	0.15	0.14
			Mobile Exhaust	1.4	0.87	0.023	0.021
			Roadway Dust	--	--	2.7	0.45
			Architectural Coating	**113**	--	--	--

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb / yr			
Phase 2	Demolition	2025	On-Site Exhaust	49	479	21	19
			Mobile Exhaust	7.5	388	2.7	2.6
			Roadway Dust	--	--	39	8.2
	Site Preparation	2025	On-Site Exhaust	38	400	17	16
			Mobile Exhaust	1.8	1.2	0.029	0.027
			Roadway Dust	--	--	3.0	0.50
	Grading, Shoring, Excavating	2025	On-Site Exhaust	**36**	**414**	**13**	**12**
			Mobile Exhaust	**31**	**1,258**	**9.0**	**8.6**
			Roadway Dust	--	--	**136**	**28**
		2026	On-Site Exhaust	**25**	**284**	**8.5**	**7.8**
			Mobile Exhaust	**22**	**862**	**6.3**	**6.1**
			Roadway Dust	--	--	**99**	**21**
	Building Construction	2026	On-Site Exhaust	53	640	17	16
			Mobile Exhaust	278	552	7.2	6.7
			Roadway Dust	--	--	532	89
		2027	On-Site Exhaust	81	980	25	23
			Mobile Exhaust	436	848	11	10
			Roadway Dust	--	--	866	146
		2028	On-Site Exhaust	75	915	22	20
			Mobile Exhaust	414	780	10	10
			Roadway Dust	--	--	847	142
	Paving	2028	On-Site Exhaust	5.1	43	2.1	1.9
			Mobile Exhaust	1.2	35	0.27	0.26
			Roadway Dust	--	--	5.0	1.0
			Paving	**16**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	22	161	3.7	3.4
			Mobile Exhaust	50	32	0.82	0.76
			Roadway Dust	--	--	95	16
			Architectural Coating	**4,501**	--	--	--
		2028	On-Site Exhaust	35	261	5.0	4.6
			Mobile Exhaust	82	50	1.3	1.2
			Roadway Dust	--	--	158	26
			Architectural Coating	**7,508**	--	--	--
Phase 3	Demolition	2026	On-Site Exhaust	53	518	22	21
			Mobile Exhaust	4.0	119	0.87	0.84
			Roadway Dust	--	--	16	3.2
	Site Preparation	2026	On-Site Exhaust	11	113	4.7	4.4
			Mobile Exhaust	0.45	0.29	0.0074	0.0068
			Roadway Dust	--	--	0.81	0.13
	Grading and Shoring	2026	On-Site Exhaust	**18**	**216**	**6.1**	**5.6**
			Mobile Exhaust	**12**	**248**	**1.9**	**1.8**
			Roadway Dust	--	--	**40**	**7.9**
		2027	On-Site Exhaust	**26**	**301**	**8.3**	**7.6**
			Mobile Exhaust	**18**	**352**	**2.7**	**2.6**
			Roadway Dust	--	--	**60**	**12**
	Building Construction	2026	On-Site Exhaust	27	331	8.4	7.7
			Mobile Exhaust	115	179	2.6	2.4
			Roadway Dust	--	--	217	36
		2027	On-Site Exhaust	61	749	17	16
			Mobile Exhaust	264	401	6.0	5.5
			Roadway Dust	--	--	518	86
		2028	On-Site Exhaust	44	541	11	10
			Mobile Exhaust	193	284	4.3	4.0
			Roadway Dust	--	--	390	65
	Paving	2027	On-Site Exhaust	4.9	43	2.0	1.9
			Mobile Exhaust	1.4	54	0.40	0.39
			Roadway Dust	--	--	6.7	1.4
			Paving	**17**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	9.4	69	1.6	1.5
			Mobile Exhaust	13	8.2	0.21	0.19
			Roadway Dust	--	--	24	4.0
			Architectural Coating	**2,027**	--	--	--
		2028	On-Site Exhaust	27	200	3.8	3.5
			Mobile Exhaust	37	23	0.59	0.55
			Roadway Dust	--	--	72	12
			Architectural Coating	**6,060**	--	--	--

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb / yr			
Phase 4	Demolition	2027	On-Site Exhaust	62	593	25	23
			Mobile Exhaust	12	710	5.3	5.1
			Roadway Dust	--	--	733	256
	Site Preparation	2027	On-Site Exhaust	21	217	8.8	8.1
			Mobile Exhaust	0.90	0.57	0.015	0.014
			Roadway Dust	--	--	121	66
	Grading, Shoring, Excavate	2027	On-Site Exhaust	25	287	8.0	7.3
			Mobile Exhaust	18	515	3.9	3.7
			Roadway Dust	--	--	198	45
		2028	On-Site Exhaust	33	363	10	9.0
			Mobile Exhaust	24	646	5.0	4.8
			Roadway Dust	--	--	264	59
	Building Construction	2028	On-Site Exhaust	49	602	13	12
			Mobile Exhaust	352	481	7.4	6.9
			Roadway Dust	--	--	169	118
		2029	On-Site Exhaust	56	696	14	13
			Mobile Exhaust	403	538	8.3	7.7
			Roadway Dust	--	--	202	140
		2030	On-Site Exhaust	50	620	11	10
			Mobile Exhaust	358	468	7.2	6.7
			Roadway Dust	--	--	185	129
	Paving	2030	On-Site Exhaust	9.2	74	3.6	3.4
			Mobile Exhaust	1.9	47	0.37	0.36
			Roadway Dust	--	--	5.4	1.6
			Paving	20	--	--	--
	Architectural Coating	2029	On-Site Exhaust	28	219	3.5	3.3
			Mobile Exhaust	66	40	1.0	0.94
			Roadway Dust	--	--	28	22
			Architectural Coating	**5,001**	--	--	--
		2030	On-Site Exhaust	30	237	3.3	3.0
			Mobile Exhaust	69	41	1.0	1.0
			Roadway Dust	--	--	31	24
			Architectural Coating	**5,475**	--	--	--
Phase 5	Demolition	2028	On-Site Exhaust	49	453	19	18
			Mobile Exhaust	4.3	156	1.2	1.1
			Roadway Dust	--	--	21	4.3
	Site Preparation	2028	On-Site Exhaust	20	205	8.3	7.6
			Mobile Exhaust	0.85	0.52	0.014	0.012
			Roadway Dust	--	--	1.7	0.27
	Grading, Shoring, Excavation	2028	On-Site Exhaust	28	310	8.3	7.7
			Mobile Exhaust	24	878	6.8	6.5
			Roadway Dust	--	--	116	24
		2029	On-Site Exhaust	29	313	8.3	7.6
			Mobile Exhaust	24	858	6.7	6.4
			Roadway Dust	--	--	121	25
	Building Construction	2029	On-Site Exhaust	55	725	15	14
			Mobile Exhaust	210	448	5.6	5.2
			Roadway Dust	--	--	457	77
		2030	On-Site Exhaust	76	999	19	18
			Mobile Exhaust	290	610	7.6	7.1
			Roadway Dust	--	--	654	111
		2031	On-Site Exhaust	62	808	15	14
			Mobile Exhaust	234	487	6.1	5.7
			Roadway Dust	--	--	546	92
	Paving	2030	On-Site Exhaust	9.4	76	3.7	3.4
			Mobile Exhaust	1.9	46	0.37	0.35
			Roadway Dust	--	--	8.2	1.6
			Paving	15	--	--	--
	Architectural Coating	2030	On-Site Exhaust	23	180	2.5	2.3
			Mobile Exhaust	39	23	0.59	0.54
			Roadway Dust	--	--	81	13
			Architectural Coating	**4,744**	--	--	--
		2031	On-Site Exhaust	26	214	2.6	2.4
			Mobile Exhaust	45	26	0.67	0.62
			Roadway Dust	--	--	97	16
			Architectural Coating	**5,674**	--	--	--

Table 16
Summary of Uncontrolled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Uncontrolled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 6	Demolition	2029	On-Site Exhaust	**30**	**275**	**12**	**11**
			Mobile Exhaust	**1.5**	**10**	**0.14**	**0.14**
			Roadway Dust	--	--	**2.5**	**0.55**
	Site Preparation	2029	On-Site Exhaust	10	100	4.0	3.7
			Mobile Exhaust	0.40	0.24	0.0063	0.0058
			Roadway Dust	--	--	**0.17**	**0.037**
	Grading, Shoring, Excavating	2029	On-Site Exhaust	**24**	**243**	**7.4**	**6.8**
			Mobile Exhaust	**15**	**21**	**0.39**	**0.37**
			Roadway Dust	--	--	**10**	**2.9**
		2030	On-Site Exhaust	**3.4**	**33**	**0.95**	**0.87**
			Mobile Exhaust	**2.2**	**3.0**	**0.055**	**0.051**
			Roadway Dust	--	--	**1.4**	**0.42**
	Building Construction	2030	On-Site Exhaust	**37**	**507**	**7.0**	**6.5**
			Mobile Exhaust	**130**	**81**	**2.0**	**1.8**
			Roadway Dust	--	--	**60**	**15**
		2031	On-Site Exhaust	**40**	**549**	**6.9**	**6.4**
			Mobile Exhaust	**138**	**85**	**2.1**	**1.9**
			Roadway Dust	--	--	**67**	**16**
		2032	On-Site Exhaust	**18**	**247**	**2.8**	**2.6**
			Mobile Exhaust	**61**	**37**	**0.90**	**0.83**
			Roadway Dust	--	--	**30**	**7.5**
	Paving	2031	On-Site Exhaust	**11**	**82**	**4.1**	**3.8**
			Mobile Exhaust	**1.6**	**1.6**	**0.031**	**0.028**
			Roadway Dust	--	--	**1.2**	**0.23**
			Paving	**9.2**	--	--	--
	Architectural Coating	2031	On-Site Exhaust	**29**	**234**	**2.8**	**2.6**
			Mobile Exhaust	**25**	**15**	**0.38**	**0.35**
			Roadway Dust	--	--	**12**	**2.5**
			Architectural Coating	**3,315**	--	--	--
		2032	On-Site Exhaust	**15**	**126**	**1.3**	**1.2**
			Mobile Exhaust	**13**	**7.6**	**0.19**	**0.18**
			Roadway Dust	--	--	**6.3**	**1.4**
			Architectural Coating	**1,806**	--	--	--

Notes:

[1] Construction emissions were estimated with methodology equivalent to CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the Variant site. For PM, the construction emissions of fugitive dust include the entrained roadway dust and tire/brake wear from construction vehicles. Uncontrolled emissions use the default construction equipment tier and CalEEMod equipment emisison factors.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 1	Demolition	2024	On-Site Exhaust	5.3	28	1.1	1.1
			Mobile Exhaust	1.9	8.5	0.11	0.10
			Roadway Dust	--	--	11	1.8
	Site Preparation	2024	On-Site Exhaust	3.7	19	0.74	0.74
			Mobile Exhaust	1.1	0.80	0.019	0.017
			Roadway Dust	--	--	1.90	0.311
	Grading, Shoring, Excavating	2024	On-Site Exhaust	**15**	**153**	**2.8**	**2.7**
			Mobile Exhaust	**25**	**108**	**1.5**	**1.4**
			Roadway Dust	--	--	**136**	**23**
		2025	On-Site Exhaust	**1.0**	**10**	**0.18**	**0.17**
			Mobile Exhaust	**1.6**	**6.1**	**0.086**	**0.081**
			Roadway Dust	--	--	**8.7**	**1.4**
	Building Construction	2024	On-Site Exhaust	1.1	15	0.15	0.15
			Mobile Exhaust	22	18	0.38	0.35
			Roadway Dust	--	--	40	6.6
		2025	On-Site Exhaust	13	183	1.8	1.8
			Mobile Exhaust	261	198	4.5	4.1
			Roadway Dust	--	--	486	80
		2026	On-Site Exhaust	13	183	1.8	1.8
			Mobile Exhaust	250	183	4.3	4.0
			Roadway Dust	--	--	486	80
		2027	On-Site Exhaust	13	183	1.8	1.8
			Mobile Exhaust	241	170	4.1	3.8
			Roadway Dust	--	--	486	80
		2028	On-Site Exhaust	0.40	5.5	0.054	0.054
			Mobile Exhaust	7.1	4.8	0.12	0.11
			Roadway Dust	--	--	15	2.4
	Paving	2026	On-Site Exhaust	4.1	21	0.81	0.81
			Mobile Exhaust	2.3	5.1	0.076	0.071
			Roadway Dust	--	--	9.4	1.5
			Paving	**28**	**--**	**--**	**--**
	Architectural Coating	2025	On-Site Exhaust	0.32	1.7	0.065	0.065
			Mobile Exhaust	4.5	3.0	0.074	0.068
			Roadway Dust	--	--	7.7	1.3
			Architectural Coating	35	--	--	--
		2026	On-Site Exhaust	3.8	20	0.76	0.76
			Mobile Exhaust	50	33	0.83	0.77
			Roadway Dust	--	--	91	15
			Architectural Coating	**416**	--	--	--
		2027	On-Site Exhaust	3.8	20	0.76	0.76
			Mobile Exhaust	48	31	0.79	0.73
			Roadway Dust	--	--	91	15
			Architectural Coating	**416**	--	--	--
		2028	On-Site Exhaust	0.12	0.60	0.023	0.023
			Mobile Exhaust	1.4	0.87	0.023	0.021
			Roadway Dust	--	--	2.7	0.45
			Architectural Coating	**13**	--	--	--

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 2	Demolition	2025	On-Site Exhaust	7.6	39	1.5	1.5
			Mobile Exhaust	2.8	20	0.24	0.23
			Roadway Dust	--	--	28	4.5
	Site Preparation	2025	On-Site Exhaust	5.9	31	1.2	1.2
			Mobile Exhaust	1.8	1.2	0.029	0.027
			Roadway Dust	--	--	3.0	0.50
	Grading, Shoring, Excavating	2025	On-Site Exhaust	**11**	**99**	**2.0**	**2.0**
			Mobile Exhaust	**17**	**69**	**1.0**	**0.92**
			Roadway Dust	--	--	**99**	**16**
		2026	On-Site Exhaust	**7.9**	**72**	**1.5**	**1.5**
			Mobile Exhaust	**12**	**45**	**0.65**	**0.62**
			Roadway Dust	--	--	**71**	**12**
	Building Construction	2026	On-Site Exhaust	17	313	8.6	7.7
			Mobile Exhaust	273	195	4.7	4.3
			Roadway Dust	--	--	520	85
		2027	On-Site Exhaust	28	476	14	13
			Mobile Exhaust	429	296	7.3	6.7
			Roadway Dust	--	--	847	139
		2028	On-Site Exhaust	27	446	13	12
			Mobile Exhaust	407	271	6.7	6.2
			Roadway Dust	--	--	828	136
	Paving	2028	On-Site Exhaust	1.5	7.6	0.29	0.29
			Mobile Exhaust	0.77	1.8	0.029	0.027
			Roadway Dust	--	--	3.8	0.61
			Paving	**16**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	2.3	12	0.46	0.46
			Mobile Exhaust	50	32	0.82	0.76
			Roadway Dust	--	--	95	16
			Architectural Coating	**500**	--	--	--
		2028	On-Site Exhaust	3.8	20	0.76	0.76
			Mobile Exhaust	82	50	1.3	1.2
			Roadway Dust	--	--	158	26
			Architectural Coating	**833**	--	--	--
Phase 3	Demolition	2026	On-Site Exhaust	7.8	40	1.6	1.6
			Mobile Exhaust	2.5	6.9	0.10	0.093
			Roadway Dust	--	--	12	1.9
	Site Preparation	2026	On-Site Exhaust	1.6	8.2	0.32	0.32
			Mobile Exhaust	0.45	0.29	0.0074	0.0068
			Roadway Dust	--	--	0.81	0.13
	Grading and Shoring	2026	On-Site Exhaust	**6.1**	**61**	**1.1**	**1.1**
			Mobile Exhaust	**9.5**	**17**	**0.28**	**0.26**
			Roadway Dust	--	--	**33**	**5.4**
		2027	On-Site Exhaust	**9.1**	**91**	**1.7**	**1.6**
			Mobile Exhaust	**14**	**23**	**0.39**	**0.37**
			Roadway Dust	--	--	**49**	**8.1**
	Building Construction	2026	On-Site Exhaust	7.6	119	2.8	2.6
			Mobile Exhaust	113	79	1.9	1.8
			Roadway Dust	--	--	214	35
		2027	On-Site Exhaust	18	269	6.8	6.2
			Mobile Exhaust	261	175	4.4	4.0
			Roadway Dust	--	--	509	84
		2028	On-Site Exhaust	14	197	5.0	4.7
			Mobile Exhaust	191	124	3.1	2.9
			Roadway Dust	--	--	384	63
	Paving	2027	On-Site Exhaust	1.4	7.1	0.27	0.27
			Mobile Exhaust	0.76	2.7	0.039	0.036
			Roadway Dust	--	--	4.9	0.79
			Paving	**17**	--	--	--
	Architectural Coating	2027	On-Site Exhaust	1.0	5.1	0.19	0.19
			Mobile Exhaust	13	8.2	0.21	0.19
			Roadway Dust	--	--	24	4.0
			Architectural Coating	**225**	--	--	--
		2028	On-Site Exhaust	2.9	15	0.58	0.58
			Mobile Exhaust	37	23	0.59	0.55
			Roadway Dust	--	--	72	12
			Architectural Coating	**672**	--	--	--

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 4	Demolition	2027	On-Site Exhaust	9.7	50	1.9	1.9
			Mobile Exhaust	3.4	31	0.43	0.41
			Roadway Dust	--	--	48	7.7
	Site Preparation	2027	On-Site Exhaust	3.3	17	0.66	0.66
			Mobile Exhaust	0.90	0.57	0.015	0.014
			Roadway Dust	--	--	1.7	0.28
	Grading, Shoring, Excavate	2027	On-Site Exhaust	8.6	81	1.6	1.6
			Mobile Exhaust	12	29	0.46	0.43
			Roadway Dust	--	--	55	9.0
		2028	On-Site Exhaust	11	108	2.1	2.1
			Mobile Exhaust	16	35	0.57	0.53
			Roadway Dust	--	--	73	12
	Building Construction	2028	On-Site Exhaust	15	219	5.6	5.2
			Mobile Exhaust	349	225	5.7	5.2
			Roadway Dust	--	--	697	114
		2029	On-Site Exhaust	18	257	6.5	6.1
			Mobile Exhaust	399	253	6.3	5.8
			Roadway Dust	--	--	831	136
		2030	On-Site Exhaust	17	228	5.7	5.4
			Mobile Exhaust	354	219	5.5	5.0
			Roadway Dust	--	--	763	125
	Paving	2030	On-Site Exhaust	2.8	14	0.55	0.55
			Mobile Exhaust	1.3	2.5	0.042	0.039
			Roadway Dust	--	--	6.3	1.0
			Paving	22	--	--	--
	Architectural Coating	2029	On-Site Exhaust	3.2	17	0.65	0.65
			Mobile Exhaust	66	40	1.0	0.94
			Roadway Dust	--	--	132	22
			Architectural Coating	555	--	--	--
		2030	On-Site Exhaust	3.5	18	0.71	0.71
			Mobile Exhaust	69	41	1.0	1.0
			Roadway Dust	--	--	145	24
			Architectural Coating	608	--	--	--
Phase 5	Demolition	2028	On-Site Exhaust	7.8	40	1.6	1.6
			Mobile Exhaust	2.4	7.7	0.11	0.10
			Roadway Dust	--	--	16	2.5
	Site Preparation	2028	On-Site Exhaust	3.2	17	0.65	0.65
			Mobile Exhaust	0.85	0.52	0.014	0.012
			Roadway Dust	--	--	1.7	0.27
	Grading, Shoring, Excavation	2028	On-Site Exhaust	10	93	1.8	1.8
			Mobile Exhaust	14	43	0.65	0.62
			Roadway Dust	--	--	84	14
		2029	On-Site Exhaust	10	96	1.9	1.8
			Mobile Exhaust	14	41	0.64	0.60
			Roadway Dust	--	--	88	14
	Building Construction	2029	On-Site Exhaust	21	359	10	8.9
			Mobile Exhaust	206	137	3.4	3.1
			Roadway Dust	--	--	443	73
		2030	On-Site Exhaust	30	491	13	12
			Mobile Exhaust	285	185	4.5	4.1
			Roadway Dust	--	--	634	104
		2031	On-Site Exhaust	25	398	10	10
			Mobile Exhaust	230	147	3.6	3.3
			Roadway Dust	--	--	530	87
	Paving	2030	On-Site Exhaust	2.8	15	0.56	0.56
			Mobile Exhaust	1.4	2.5	0.042	0.039
			Roadway Dust	--	--	6.3	1.0
			Paving	17	--	--	--
	Architectural Coating	2030	On-Site Exhaust	2.7	14	0.54	0.54
			Mobile Exhaust	39	23	0.59	0.54
			Roadway Dust	--	--	81	13
			Architectural Coating	**526**	--	--	--
		2031	On-Site Exhaust	3.2	17	0.65	0.65
			Mobile Exhaust	45	26	0.67	0.62
			Roadway Dust	--	--	97	16
			Architectural Coating	**630**	--	--	--

Table 17
Summary of Controlled Construction Emissions by Source for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Construction Area	Construction Activity	Year	Source	Controlled Construction CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				lb/yr			
Phase 6	Demolition	2029	On-Site Exhaust	**4.8**	**25**	**1.0**	**1.0**
			Mobile Exhaust	**1.5**	**10**	**0.14**	**0.14**
			Roadway Dust	--	--	**2.5**	**0.55**
	Site Preparation	2029	On-Site Exhaust	1.6	8.2	0.32	0.32
			Mobile Exhaust	0.40	0.24	0.0063	0.0058
			Roadway Dust	--	--	**0.17**	**0.037**
	Grading, Shoring, Excavating	2029	On-Site Exhaust	**8.7**	**77**	**1.7**	**1.6**
			Mobile Exhaust	**15**	**21**	**0.39**	**0.37**
			Roadway Dust	--	--	**10**	**2.2**
		2030	On-Site Exhaust	**1.3**	**11**	**0.25**	**0.24**
			Mobile Exhaust	**2.2**	**3.0**	**0.055**	**0.051**
			Roadway Dust	--	--	**1.5**	**0.32**
	Building Construction	2030	On-Site Exhaust	**11**	**128**	**1.6**	**1.6**
			Mobile Exhaust	**130**	**81**	**2.0**	**1.8**
			Roadway Dust	--	--	**61**	**13**
		2031	On-Site Exhaust	**12**	**141**	**1.8**	**1.8**
			Mobile Exhaust	**138**	**85**	**2.1**	**1.9**
			Roadway Dust	--	--	**67**	**15**
		2032	On-Site Exhaust	**5.4**	**64**	**0.81**	**0.80**
			Mobile Exhaust	**61**	**37**	**0.90**	**0.83**
			Roadway Dust	--	--	**31**	**6.7**
	Paving	2031	On-Site Exhaust	**3.4**	**18**	**0.68**	**0.68**
			Mobile Exhaust	**1.6**	**1.6**	**0.031**	**0.028**
			Roadway Dust	--	--	**1.2**	**0.23**
			Paving	**9.2**	--	--	--
	Architectural Coating	2031	On-Site Exhaust	**3.5**	**18**	**0.71**	**0.71**
			Mobile Exhaust	**25**	**15**	**0.38**	**0.35**
			Roadway Dust	--	--	**12**	**2.5**
			Architectural Coating	**368**	--	--	--
		2032	On-Site Exhaust	**1.9**	**10**	**0.39**	**0.39**
			Mobile Exhaust	**13**	**7.6**	**0.19**	**0.18**
			Roadway Dust	--	--	**6.3**	**1.4**
			Architectural Coating	**200**	--	--	--

Notes:

1. Construction emissions were estimated with methodology equivalent to CalEEMod® 2022.1.0. On-Site Exhaust represents emissions from off-road equipment, including onsite truck use, while mobile exhaust includes emissions from worker, vendor, and hauling trucks travelling to and from the project site. For PM, the construction emissions of fugitive dust include the entrained roadway dust and tire/brake wear for construction vehicles. For PM, the construction emissions of fugitive dust include the entrained roadway dust.
Controlled construction emissions incorporate architectural coating controls, Tier 4 construction equipment with the exception of bore/drill rigs and cranes, and model year 2018 or newer trucks.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 18
Uncontrolled Construction Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Uncontrolled Construction Daily CAP Emissions[1]			
	ROG	NOx	PM_{10}	$PM_{2.5}$
	lb/day			
2024	**1.0**	**17**	**1.6**	**0.57**
2025	3.1	**17**	**3.0**	**0.80**
2026	19	23	6.3	**1.4**
2027	45	**30**	13	3.4
2028	58	28	8.5	2.2
2029	**23**	**17**	**3.5**	**1.3**
2030	**44**	**16**	**4.2**	**1.4**
2031	**37**	10	**2.9**	**0.64**
2032	**15**	**3.2**	**0.32**	**0.11**

Notes:

1. Daily emissions are conservatively averaged over number of work days (i.e., 260 days) per year, not including weekends.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Table 19
Controlled Construction Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Controlled Construction Daily CAP Emissions[1]			
	ROG[2]	NOx	PM_{10}	$PM_{2.5}$
	lb/day			
2024	**0.39**	**1.8**	**1.0**	**0.19**
2025	1.4	**2.5**	2.5	0.45
2026	4.7	**5.4**	**5.6**	1.0
2027	**9.0**	**7.7**	8.7	1.6
2028	11	7.5	9.2	1.7
2029	**5.1**	5.2	**5.9**	**1.1**
2030	**8.2**	**5.7**	**6.7**	**1.2**
2031	**5.7**	**3.3**	**2.8**	**0.54**
2032	**2.2**	**0.91**	**0.30**	**0.079**

Notes:

1. Daily emissions are conservatively averaged over number of work days (i.e., 260 days) per year, not including weekends.

2. Emissions incorporate architectural coating controls, Tier 4 construction equipment with the exception of bore/drill rigs and cranes, and model year 2018 or newer trucks.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod® - California Emissions Estimator Model®
CAP - Criteria Air Pollutants
lb - pounds
NOx - nitrogen oxides
PM - Particulate Matter

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

California Environmental Quality Act (CEQA) Guidelines. 2017. Bay Area Air Quality Management District (BAAQMD). May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-

Table 20
Building Operational Capacity For Emissions Scaling for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Phase[1]	Percent Breakdown of Land Use Type by Phase							Percent of Year Phase is Operational[2]					
	Residential	Retail Sales and Services	Non-Retail Sales and Services	Parks, Plazas, and Open Space	Hotel	Institutional	Structured Parking	2028	2029	2030	2031	2032	2033
Phase 1	**15%**	6%	--	17%	--	21%	**26%**	97%	100%	100%	100%	100%	100%
Phase 2	**23%**	23%	--	23%	--	--	**15%**	2%	100%	100%	100%	100%	100%
Phase 3	15%	13%	**25%**	17%	--	19%	**15%**	25%	100%	100%	100%	100%	100%
Phase 4	**18%**	36%	**49%**	12%	**--**	60%	**20%**	--	--	8%	100%	100%	100%
Phase 5	19%	23%	**26%**	17%	--	--	16%	--	--	--	16%	100%	100%
Phase 6	**10%**	--	--	15%	--	--	8%	--	--	--	--	**54%**	100%
Total	**100.0%**	**100%**	**100%**	**100%**	**0%**	**100%**	**100%**	**--**	**--**	**--**	**--**	**--**	**--**

Year	Operational Capacity						
	Residential	Retail Sales and Services	Non-Retail Sales and Services	Parks, Plazas, and Open Space	Hotel	Institutional	Structured Parking
2028	**18.8%**	10%	**6%**	21%	0%	25%	**29%**
2029	**52.8%**	41%	**25%**	57%	0%	40%	**56%**
2030	**54.3%**	44%	**29%**	58%	**0%**	45%	58%
2031	**73.7%**	81%	**78%**	71%	**0%**	100%	79%
2032	**95.4%**	100%	100%	**93%**	**0%**	100%	**96%**

Notes:

1. Construction area/subphasing information and full buildout square footage by building provided by Project Applicant.

2. The percentage of year that each building is operational is calculated using the last day of construction for each building. For each partial year of construction, the building is assumed to be operational during the fraction of the year between the last day of construction and the end of that year. The building is assumed to be 0% operational for each full year of construction and 100% operational for each full year after the end of construction.

Abbreviations:

% - percent

RAMBOLL

Table 21b
Trips and VMT for Revised Variant Operations
Stonestown Redevelopment
San Francisco, California

Land Use Category	CalEEMod Land Use	Land Use Size[1]	Metric	Weekday Trips/Day-Size Unit[2,3]	Weekend Trips/Day-Size Unit[2,3]	VMT/Person/ Day[2,3]	Population[4]	Weekday Trips[2,3]	Weekend Trips[2,3]	Average Daily Trips	Annual Trips	Weekday VMT[5]	Weekend VMT[5]	Average Daily VMT[5]	Annual VMT[5]
Residential	Apartments Mid Rise	**3,491**	DU	**1.5**	1.3	13	**8,239**	**5,306**	**4,389**	**5,044**	**1,841,187**	**102,985**	**85,189**	**97,900**	**35,733,566**
Retail	Regional Shopping Center	160	ksf	37	33	7.6	291	5,955	5,302	5,769	2,105,539	17,018	15,152	16,485	6,016,961
Commercial	General Office Building	**96**	ksf	**10**	**1.5**	10	**384**	**961**	**144**	**727**	**265,506**	**3,917**	**585**	**2,965**	**1,082,184**
Hotel	Hotel	**--**	rooms	1.6	1.3	--	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Institutional (excl. childcare)	General Office Building	38	ksf	37	5.6	--	100	1,414	211	1,070	390,673	8,091	1,209	6,125	2,235,488
Childcare	Day-Care Center	15	ksf	**23**	2.9	--	100	347	44	260	95,036	1,469	186	1,102	402,317
Religious Institution	Place of Worship	10	ksf	**2.5**	6.0	**--**	100	25	60	35	12,824	143	346	201	73,380
					Total Project		**9,114**	**13,983**	**10,090**	**12,871**	**4,697,942**	**133,479**	**102,321**	**124,577**	**45,470,516**

Notes:

1. Land uses analyzed for trip generation estimations were based on Project square footages provided by the Project sponsor.
2. Trip generation estimates presented above were provided by the traffic engineer. For weekend trip generation rates, weekday trip generation rates were scaled by the CalEEMod default ratio between weekend and weekday trips.
3. There is no credit taken for a reduction in trips to the existing mall due to the removal of retail space. Trips associated with the recreational area are also not taken into account because it is assumed that anyone using the recreational area would already be onsite for other reasons
4. Population estimates are taken from the Initial Study Stonestown Development Project Attachment A
5. VMT per capita estimates were provided by the traffic engineer for Residential and Commercial land uses and multipled by population. Where VMT per capita estimates were not available, the CalEEMod default trip length for each land use was multiplied by the estimated trip rates to calculate VMT.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
DU - Dwelling Units
VMT - Vehicle Mile Travelled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 23b
Project Revised Variant Uncontrolled Mobile Emissions Summary
Stonestown Redevelopment
San Francisco, California

Fleet Type	Year[1]	Trip Rates[2]	Vehicle Miles Traveled[2]	CAP Emissions							
		Annual	Annual	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
		Trips/yr	Miles/yr	tons/year				lbs/day			
Residential	2032	**1,841,187**	**35,733,566**	**2.7**	**3.7**	**8.4**	**1.5**	**15**	**20**	**46**	**8.0**
Retail	2032	2,105,539	6,016,961	1.5	1.3	1.4	0.25	8.2	7.0	7.8	1.4
Commercial	2032	**265,506**	**1,082,184**	**0.20**	**0.19**	**0.26**	**0.045**	**1.1**	**1.0**	**1.4**	**0.24**
Hotel	2032	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Institutional (excl. childcare)	2032	390,673	2,235,488	0.33	0.33	0.53	0.092	1.8	1.8	2.9	0.50
Childcare	2032	95036	402,317	0.073	0.069	0.095	0.017	0.40	0.38	0.52	0.091
Religious Institution	2032	12824	73,380	0.011	0.011	0.017	0.0030	0.059	0.060	0.095	0.017
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**4.8**	**5.6**	**11**	**1.9**	**27**	**31**	**59**	**10**
Emissions for Partial Buildout[1]											
Residential	2028	**1,841,187**	**35,733,566**	**3.2**	**4.8**	**8.4**	**1.5**	**18**	**26**	**46**	**8.2**
Retail	2028	2,105,539	6,016,961	1.7	1.6	1.4	0.25	10	8.6	7.8	1.4
Commercial	2028	**265,506**	**1,082,184**	**0.24**	**0.23**	**0.26**	**0.045**	**1.3**	**1.3**	**1.4**	**0.25**
Hotel	2028	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Institutional (excl. childcare)	2028	390,673	2,235,488	0.39	0.42	0.53	0.094	2.1	2.3	2.9	0.51
Childcare	2028	95036	402,317	0.086	0.085	0.10	0.017	0.47	0.47	0.52	0.092
Religious Institution	2028	12824	73,380	0.013	0.014	0.017	0.0031	0.069	0.075	0.10	0.017
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**5.7**	**7.1**	**11**	**1.9**	**31**	**39**	**59**	**10**
Partial Buildout[1]											
Project 2028 Emissions				**0.90**	**1.2**	**1.9**	**0.33**	**4.9**	**6.5**	**10**	**1.8**
Project 2029 Emissions				**2.7**	**3.4**	**5.4**	**0.94**	**15**	**19**	**29**	**5.2**
Project 2030 Emissions				**2.8**	**3.6**	**5.6**	**0.98**	**15**	**20**	**30**	**5.4**
Project 2031 Emissions				**4.4**	**5.5**	**8.2**	**1.4**	**24**	**30**	**45**	**7.9**
Project 2032 Emissions				**4.7**	**5.4**	**10**	**1.8**	**26**	**30**	**56**	**9.8**

Notes:

1. Full buildout operational emissions are based on 2032 emission factors. For interim years, 2028 emission factors were used to be conservative. Emission factors are presented in Table 18. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 15.
2. Daily trip rates and VMT were provided by the Transportation Engineer, for more detail see Table 21b. Annual trips and VMT are calculated assuming 365 days of operation per year for all fleets.

Abbreviations:

lb - pound
VMT- vehicle miles traveled
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
ROG - reactive organic gases
CAP - Criteria Air Pollutants

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

RAMBOLL

Table 24b
Project Revised Variant Controlled Mobile Emissions Summary
Stonestown Redevelopment
San Francisco, California

Fleet Type	Year[1]	Trip Rates[2]	Vehicle Miles Traveled[2]	CAP Emissions							
		Annual	Annual	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
		Trips/yr	Miles/yr	tons/year				lbs/day			
Residential	2032	1,841,187	35,733,566	2.5	3.3	7.6	1.3	14	18	41	7.2
Retail	2032	2,105,539	6,016,961	1.3	1.2	1.3	0.22	7.3	6.3	7.0	1.2
Commercial	2032	265,506	1,082,184	0.18	0.17	0.23	0.040	1.0	0.9	1.3	0.22
Hotel	2032	0	0	0	0	0	0	0	0	0	0
Institutional (excl. childcare)	2032	390,673	2,235,488	0.30	0.30	0.47	0.083	1.6	1.6	2.6	0.45
Childcare	2032	95,036	402,317	0.066	0.062	0.085	0.015	0.36	0.34	0.47	0.082
Religious Institution	2032	12,824	73,380	0.010	0.010	0.016	0.0027	0.053	0.054	0.085	0.015
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**4.4**	**5.0**	**9.7**	**1.7**	**24**	**28**	**53**	**9.2**
Emissions for Partial Buildout[1]											
Residential	2028	1,841,187	35,733,566	2.9	4.3	7.6	1.3	16	24	42	7.3
Retail	2028	2,105,539	6,016,961	1.6	1.4	1.3	0.23	8.6	7.7	7.0	1.3
Commercial	2028	265,506	1,082,184	0.21	0.21	0.23	0.041	1.2	1.2	1.3	0.22
Hotel	2028	0	0	0	0	0	0	0	0	0	0
Institutional (excl. childcare)	2028	390,673	2,235,488	0.35	0.37	0.48	0.084	1.9	2.1	2.6	0.46
Childcare	2028	95,036	402,317	0.077	0.077	0.086	0.015	0.42	0.42	0.47	0.083
Religious Institution	2028	12,824	73,380	0.011	0.012	0.016	0.0028	0.062	0.067	0.086	0.015
Total - Mobile Fleet		**4,710,765**	**45,543,896**	**5.1**	**6.4**	**9.7**	**1.7**	**28**	**35**	**53**	**9.4**
Partial Buildout[1]											
Project 2028 Emissions				**0.81**	**1.1**	**1.7**	**0.30**	**4.4**	**5.9**	**9.3**	**1.6**
Project 2029 Emissions				**2.4**	**3.1**	**4.8**	**0.85**	**13**	**17**	**26**	**4.7**
Project 2030 Emissions				**2.5**	**3.2**	**5.0**	**0.88**	**14**	**18**	**27**	**4.8**
Project 2031 Emissions				**4.0**	**4.9**	**7.4**	**1.3**	**22**	**27**	**40**	**7.1**
Project 2032 Emissions				**4.2**	**4.8**	**9.3**	**1.6**	**23**	**27**	**51**	**8.9**

Notes:

1. Full buildout operational emissions are based on 2032 emission factors. For interim years, 2028 emission factors were used to be conservative. Emission factors are presented in Table 18. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 16.
2. Daily trip rates and VMT were provided by the Transportation Engineer, for more detail see Table 21b. Annual trips and VMT are calculated assuming 365 days of operation per year for all
3. Mitigated emissions were calculating assuming a 10% reduction according to a Transportation Management Plan.

Abbreviations:

lb - pound
VMT- vehicle miles traveled
NO_x - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
ROG - reactive organic gases
CAP - Criteria Air Pollutants

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

RAMBOLL

Table 26a
Generator Emissions from Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Generator Information[1]

Scenario	Number of Generators	Engine Control[2]	Size	Fuel Type	Annual Operation[3]	Buildings with Generator[4]
			HP		hr/yr	
Full Buildout	3	Tier 2	470	Diesel	50	NW1, NW2, and NW3
	6	Tier 2	670	Diesel	50	W1, E1, E3, E4, S1, and S3
	4	Tier 4	1,005	Diesel	50	W3, W4, S2, and **S3**

Revised Variant Generator Emissions

Size (hp)	Quantity	Annual Emissions (ton/yr)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Full Buildout Conditions Generator Emissions[3]					
470	3	0.020	0.35	0.012	0.012
670	6	0.057	1.0	0.033	0.033
1,005	**4**	**0.033**	**0.111**	**0.0044**	**0.0044**
	Total Emissions	**0.11**	**1.5**	**0.049**	**0.049**

Notes:

1. Number, size, fuel, and location of emergency generators were provided by the Project Applicant. Any existing emergency generator that would be removed as a result of the Project would be replaced with a similar generator.
2. All generators above 1000 hp were assumed to be Tier 4, consistent with BAAQMD requirements for Best Available Control Technology (BACT)
3. Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the ATCM for Stationary Compression Ignition Engines (17 CCR 93115).
4. Building names indicate the generator location. Each listed building will install one generator.

Abbreviations:

ATCM - Air Toxics Control Measure
BACT - Best Available Control Technology
BAAQMD - Bay Area Air Quality Management District
g - grams
hp - horsepower
hr - hour
NOx - oxides of nitrogen
PM_{10} - PM less than 10 microns in diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. Airborne Toxic Control Measures (ATCM), 17 CCR § 93115. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

BAAQMD. Best Available Control Technology (BACT) Guideline. Available online at: https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en.

Table 26b
Controlled Generator Emissions from Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Generator Information[1]

Scenario	Number of Generators	Engine Control[2]	Size	Fuel Type	Annual Operation[3]	Buildings with Generator[4]
			HP		hr/yr	
Full Buildout	3	Tier 4	470	Diesel	50	NW1, NW2, and NW3
	6	Tier 4	670	Diesel	50	W1, E1, E3, E4, S1, and S3
	4	Tier 4	1,005	Diesel	50	W3, W4, S2, and **S3**

Revised Variant Generator Emissions

Size (hp)	Quantity	Annual Emissions (ton/yr)			
		ROG	NO_x	PM_{10}	$PM_{2.5}$
Full Buildout Conditions Generator Emissions[3]					
470	3	0.012	0.023	0.0012	0.0012
670	6	0.033	0.066	0.0033	0.0033
1,005	**4**	**0.033**	**0.111**	**0.0044**	**0.0044**
Total Emissions		**0.078**	**0.20**	**0.0089**	**0.0089**

Notes:

1. Number, size, fuel, and location of emergency generators were provided by the Project Applicant. Any existing emergency generator that would be removed as a result of the Project would be replaced with a similar generator.
2. All generators were assumed to be Tier 4, consistent with information provided by the Project Sponsor.
3. Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the ATCM for Stationary Compression Ignition Engines (17 CCR 93115).
4. Building names indicate the generator location. Each listed building will install one generator.

Abbreviations:

ATCM - Air Toxics Control Measure
BACT - Best Available Control Technology
BAAQMD - Bay Area Air Quality Management District
g - grams
hp - horsepower
hr - hour
NOx - oxides of nitrogen
PM_{10} - PM less than 10 microns in diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Resources Board. Airborne Toxic Control Measures (ATCM), 17 CCR § 93115. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

BAAQMD. Best Available Constrol Technology (BACT) Guideline. Available online at: https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en.

Table 27
Uncontrolled Architectural Coating Emissions from Existing Conditions and Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Land Use Type	Description[1]	Building Area	Building Surface Area[1]	Painted Parking Stripes Area[1]	Application Rate[2]	Indoor or Parking Stripe Paint VOC EF[3]	Outdoor Paint VOC EF[3]	Architectural Coating VOC Emissions[4]
		sqft	sqft	sqft		g/L	g/L	lb/yr
Existing Conditions								
Parking	Underground parking and surface parking lots	1,658,558	82,928	99,513	0.10	100	150	86
Cultural, Institutional, Educational	Church	25,000	50,000	--	0.10	100	150	26
Retail	Shopping center	59,275	118,550	--	0.10	100	150	62
							Total Existing Conditions Emissions	**174**
Full Buildout								
Residential	Residential	**3,534,000**	**9,541,800**	--	0.10	100	150	**4,976**
Recreational	Parks, Plazas, and Open Space	261,361	0	--	0.10	--	--	--
Parking	Structured Parking	**1,822,875**	**91,144**	**109,373**	0.10	100	150	**95**
Recreational	Hotel	**0,000**	**0,000**	--	0.10	100	150	**0**
Cultural, Institutional, Educational	Institutional	63,000	126,000	--	0.10	100	150	66
Commercial	Non-Retail Sales and Services	**96,000**	**192,000**	--	0.10	100	150	**100**
Retail	Retail Sales and Services	160,000	320,000	--	0.10	100	150	167
							Total Full Buildout Emissions	**5,404**
Partial Buildout[5]								
							2028 Emissions	**921**
							2029 Emissions	**2,593**
							2030 Emissions	**2,676**
							2031 Emissions	**3,771**
							2032 Emissions	**4,849**

Notes:

1. Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.
2. Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.
3. Consistent with CalEEMod Appendix G Table G-17, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, uses VOC EF of 100 g/L for flat paints, generally used indoors, and 150 g/L for all other architectural coatings.
4. Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.
5. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 20.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
L - liters

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 28
Controlled Architectural Coating Emissions from Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Land Use Type	Description	Building Area	Building Surface Area[1]	Painted Parking Stripes Area[1]	Application Rate[2]	Indoor or Parking Stripe Paint VOC EF[3]	Outdoor Paint VOC EF[3]	Architectural Coating VOC Emissions[4]
		sqft	sqft	sqft		g/L	g/L	lb/yr
Full Buildout								
Residential	Residential	**3,534,000**	**9,541,800**	--	0.10	10	20	**553**
Recreational	Parks, Plazas, and Open Space	261,361	0	--	0.10	--	--	--
Parking	Structured Parking	**1,822,875**	**91,144**	**109,373**	0.10	10	20	**9.7**
Recreational	Hotel	**0**	**0**	--	0.10	10	20	**0**
Cultural, Institutional, Educational	Institutional	63,000	126,000	--	0.10	10	20	7.3
Commercial	Non-Retail Sales and Services	**96,000**	**192,000**	--	0.10	10	20	**11**
Retail	Retail Sales and Services	160,000	320,000	--	0.10	10	20	19
							Total Full Buildout Emissions	**600**
Partial Buildout[5]								
							2028 Emissions	**111**
							2029 Emissions	**311**
							2030 Emissions	**321**
							2031 Emissions	**446**
							2032 Emissions	**574**

Notes:

1. Consistent with CalEEMod Appendix C, residential building surface area was assumed to be 2.7 times the floor area, and non-residential 2 times the floor area. Also consistent with CalEEMod Appendix E, the parking painted stripes and building area was assumed to be 6% and 5% of the total surface area for surface lots respectively.
2. Consistent with CalEEMod Appendix C, 10% of all surfaces were assumed to be coated each year.
3. Consistent with SCAQMD's Super-Compliant Architectural Coatings standard, a VOC EF of 10 g/L was used for indoor paint. A VOC EF of 20 g/L for all other architectural coatings was used.
4. Uses CalEEMod Appendix C assumption that 1 gallon of paint covers 180 square feet. Building surface area is assumed to be 75% indoors and 25% outdoors, consistent with CalEEMod Appendix C. Parking garages are assumed to have 90% indoor areas and 10% outdoor.
5. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 20.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
L - liters
lb - pound
sqft - square feet
VOC - volatile organic compound
yr - year
SCAQMD - South Coast Air Quality Management District

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

SCAQMD. Super-Compliant Architectural Coatings. Available online at: https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 30
Consumer Product Emissions from Existing Conditions and Project Operations for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Land Use Type	Description	Consumer Products VOC emissions[1,2] lb/yr
Existing Conditions		
Parking	Underground parking and surface parking lots	344
Cultural, Institutional, Educational	Church	134
Retail	Shopping center	317
	Total Existing Conditions Emissions	**794**
Full Buildout		
Residential	Residential	**18,890**
Recreational	Parks, Plazas, and Open Space	1,397
Parking	Structured Parking	**378**
Recreational	Hotel	**0**
Cultural, Institutional, Educational	Institutional	337
Commercial	Non-Retail Sales and Services	**513**
Retail	Retail Sales and Services	855
	Total Full Buildout Emissions	**22,370**
Partial Buildout[3]		
	2028 Emissions	**4,145**
	2029 Emissions	**11,600**
	2030 Emissions	**11,957**
	2031 Emissions	**16,644**
	2032 Emissions	**21,387**

Notes:

1. The consumer products VOC EF for office, retail, and residential land uses are shown in Table 29.
2. Consumer product VOC EFs for parking and open space were taken from CalEEMod 2022.1.0. These defaults take into account pesticide and fertilizer use in city parks and degreaser use in parking areas.
3. Partial buildout emissions were calculated from full buildout using scaling factors by land use type and year, as shown in Table 20.

Abbreviations:

CalEEMod - California Emissions Estimator Model
lb - pound
VOC - volatile organic compound
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 34b
Summary of Variant Uncontrolled Operational CAP Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Emissions Source	CAP Emissions[1]							
	(ton/year)				(lb/day)[2]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[3]								
Architectural Coating	0.087	0	0	0	0.48	0	0	0
Consumer Products	0.40	0	0	0	2.2	0	0	0
Landscaping	0.050	0	0	0	0.27	--	--	--
Natural Gas Use	0.0078	0.071	0.0054	0.0054	0.043	0.39	0.029	0.029
Total Emissions	**0.54**	**0.071**	**0.0054**	**0.0054**	**3.0**	**0.39**	**0.029**	**0.029**
Full Buildout Conditions[4]								
Architectural Coating	**2.7**	0	0	0	**15**	0	0	0
Consumer Products	11	0	0	0	**61**	0	0	0
Landscaping	3.0	0.23	0.020	0.020	16	1.3	0.11	0.11
Natural Gas Use	0	0	0	0	0	0	0	0
Mobile	**4.85**	**5.6**	**11**	**1.9**	27	**31**	**59**	**10**
Emergency Generators	**0.11**	**1.5**	**0.049**	**0.049**	**0.60**	**8.1**	**0.27**	**0.27**
Total Emissions	**22**	**7.3**	**11**	**1.9**	**120**	**40**	**59**	**11**
Partial Buildout Emissions[5]								
2028 Emissions	4.1	1.6	**1.9**	**0.35**	22	**8.8**	10	1.9
2029 Emissions	11	**4.1**	**5.4**	1.0	**62**	22	30	**5.3**
2030 Emissions	12	4.3	**5.6**	1.0	**64**	24	**31**	**5.6**
2031 Emissions	17	**6.7**	**8.3**	1.5	**93**	**36**	**45**	**8.2**
2032 Emissions	21	**7.0**	10	**1.9**	**114**	**38**	**57**	10
Net Emissions[6]								
Net 2028 Emissions	3.5	1.5	**1.9**	**0.35**	19	**8.4**	10	**1.9**
Net 2029 Emissions	11	4.0	**5.4**	**0.97**	**59**	22	30	**5.3**
Net 2030 Emissions	11	4.3	**5.6**	1.0	**61**	23	**31**	**5.5**
Net 2031 Emissions	**16**	6.6	**8.3**	1.5	**90**	36	**45**	**8.2**
Net 2032 Emissions	20	**6.9**	10	**1.9**	**111**	38	**57**	**10**
Net Full Buildout Emissions	**21**	**7.2**	**11**	**1.9**	**117**	**40**	**59**	**11**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1. Emissions too small to be reported by CalEEMod are indicated by "--".
2. Operational emissions shown represent activity and emissions across 365 days per year.
3. Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use types provided by the Project Applicant and CalEEMod defaults. Mobile source and generator existing emissions are not shown as all existing generators will remain or be replaced with like generators, and a credit is not taken for any existing vehicle trips displaced by the project.
4. Full buildout operational emissions are based on Table 21 through Table 33.
5. Operational emissions were estimated for partial buildout years 2028 through 2032 by scaling full buildout emissions for each emissions source by the percent that each parcel is operational for each year relative to full buildout, using scaling factors by land use type and year, as shown in Table 20.
6. Net emissions were calculated as the difference between partial buildout emissions for each year and existing condition emissions.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NOx - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 35b
Summary of Variant Controlled Operational CAP Emissions for Revised Variant
Stonestown Redevelopment
San Francisco, California

Emissions Source	CAP Emissions[1]							
	(ton/year)				(lb/day)[2]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Existing Conditions[3]								
Architectural Coating	0.087	--	--	--	0.48	--	--	--
Consumer Products	0.40	--	--	--	2.2	--	--	--
Landscaping	0.050	--	--	--	0.27	--	--	--
Natural Gas Use	0.0078	0.071	0.0054	0.0054	0.043	0.39	0.029	0.029
Total Emissions	**0.54**	**0.071**	**0.0054**	**0.0054**	**3.0**	**0.39**	**0.029**	**0.029**
Full Buildout Conditions[4]								
Architectural Coating	**0.30**	--	--	--	1.6	--	--	--
Consumer Products	11	--	--	--	**61**	--	--	--
Landscaping	--	--	--	--	--	--	--	--
Natural Gas Use	--	--	--	--	--	--	--	--
Mobile	4.4	**5.0**	**9.7**	**1.7**	24	**28**	**53**	**9.2**
Emergency Generators	**0.078**	**0.20**	**0.0089**	**0.0089**	**0.43**	**1.1**	**0.049**	**0.049**
Total Emissions	**16**	**5.2**	**9.7**	**1.7**	**87**	**29**	**53**	**9.3**
Partial Buildout Emissions[5]								
2028 Emissions	**3.0**	1.1	**1.7**	**0.30**	16	**6.0**	**9.4**	**1.7**
2029 Emissions	8.4	3.2	**4.8**	**0.86**	46	17	26	**4.7**
2030 Emissions	8.7	3.3	**5.0**	**0.89**	48	18	**28**	**4.9**
2031 Emissions	13	5.1	**7.4**	1.3	69	**28**	**41**	**7.2**
2032 Emissions	15	5.0	**9.3**	1.6	84	**28**	**51**	**8.9**
Net Emissions[6]								
Net 2028 Emissions	2.4	1.0	**1.7**	**0.30**	13	**5.6**	**9.3**	1.6
Net 2029 Emissions	**7.8**	3.1	**4.8**	**0.85**	43	17	26	**4.7**
Net 2030 Emissions	**8.1**	3.2	**5.0**	**0.88**	45	18	27	**4.8**
Net 2031 Emissions	12	5.0	**7.4**	1.3	**66**	27	**41**	**7.2**
Net 2032 Emissions	15	5.0	**9.3**	1.6	81	27	**51**	**8.9**
Net Full Buildout Emissions	**15**	**5.2**	**9.7**	**1.7**	**84**	**28**	**53**	**9.3**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1. Emissions too small to be reported by CalEEMod are indicated by "--".
2. Operational emissions shown represent activity and emissions across 365 days per year.
3. Operational emissions from existing conditions were calculated using CalEEMod® default data and emission factors based on the existing land use type and energy use rates provided by the Project Applicant.
4. Full buildout operational emissions are based on Table 21 through Table 33. Controlled emissions incorporate controls from a Transportation Demand Management Program, supercompliant paints for architectural coating, tier 4 generators, and electric landscaping equipment.
5. Operational emissions were estimated for partial buildout years 2028 through 2032 by scaling full buildout emissions for each emissions source by the percent that each parcel is operational for each year relative to full buildout, using scaling factors by land use type and year, as shown in Table 20. Mitigated emissions were calculating assuming a 10% reduction according to a Transportation Management Plan.
6. Net emissions were calculated as the difference between partial buildout emissions for each year and existing condition emissions.

Abbreviations:

CalEEMod® - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NOx - nitrogen oxides
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 36
Uncontrolled Construction and Net New Operational CAP Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Average Daily CAP Emissions[1,2] (lb/day)											
	Construction Emissions Only				Net Operational Emissions[3]				Construction and Net Operational Emissions[3]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2024	**1.0**	**17**	**1.6**	**0.57**	--	--	--	--	**1.0**	**17**	**1.6**	**0.57**
2025	3.1	**17**	**3.0**	**0.80**	--	--	--	--	3.1	**17**	**3.0**	**0.80**
2026	**19**	23	6.3	**1.4**	--	--	--	--	19	23	6.3	**1.4**
2027	45	**30**	13	3.4	--	--	--	--	45	**30**	13	3.4
2028	58	28	8.5	2.2	19	**8.4**	10	**1.9**	78	36	19	4.1
2029	**23**	**17**	**3.5**	**1.3**	**59**	22	30	**5.3**	82	**39**	33	6.6
2030	**44**	**16**	**4.2**	**1.4**	**61**	23	**31**	**5.5**	**105**	**39**	35	6.9
2031	**37**	10	**2.9**	**0.64**	**90**	36	**45**	**8.2**	**127**	46	48	**8.8**
2032	**15**	**3.2**	**0.32**	**0.11**	**111**	38	**57**	**10**	**125**	**41**	**57**	10
Full Buildout	--	--	--	--	**117**	**40**	**59**	**11**	**117**	**40**	**59**	**11**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.
2. Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout, as shown in Table 20.
3. Uncontrolled construction emissions can be found in Table 18. Net Uncontrolled operational emissions were calculated by subtracting the emissions from the existing conditions from the project emissions, as reported in Table 34a and Table 34b.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_x - nitrogen oxides
PM - particulate matter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 37
Controlled Construction and Net New Operational CAP Emissions by Year for Revised Variant
Stonestown Redevelopment
San Francisco, California

Proposed Revised Variant

Year	Average Daily CAP Emissions[1,2] (lb/day)											
	Construction Emissions Only[3]				Net Operational Emissions Only[3]				Construction and Net Operational Emissions[3]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
2024	**0.39**	**1.8**	**1.0**	**0.19**	--	--	--	--	**0.39**	**1.8**	**1.0**	**0.19**
2025	1.4	**2.5**	2.5	0.45	--	--	--	--	1.4	**2.5**	2.5	0.45
2026	4.7	**5.4**	**5.6**	1.0	--	--	--	--	4.7	**5.4**	**5.6**	1.0
2027	**9.0**	**7.7**	8.7	1.6	--	--	--	--	**9.0**	**7.7**	8.7	1.6
2028	11	7.5	9.2	1.7	13	**5.6**	**9.3**	**1.6**	**24**	13	**19**	**3.3**
2029	**5.1**	5.2	**5.9**	**1.1**	43	17	26	**4.7**	48	22	**32**	**5.7**
2030	**8.2**	**5.7**	**6.7**	**1.2**	45	18	27	**4.8**	53	**23**	**34**	**6.1**
2031	**5.7**	**3.3**	**2.8**	**0.54**	66	27	**41**	**7.2**	72	31	43	**7.7**
2032	**2.2**	**0.91**	**0.30**	**0.079**	81	27	**51**	**8.9**	83	28	**51**	**9.0**
Full Buildout	--	--	--	--	**84**	28	**53**	**9.3**	**84**	28	**53**	**9.3**

Notes:

1. Emissions estimated using methods consistent with CalEEMod® version 2022.1.
2. Net new operational emissions are scaled for partial years of phased operations by the percent that each parcel is operational for each year relative to full buildout, as shown in Table 20.
3. Controlled construction emissions can be found in Table 19. Net Controlled operational emissions were calculated by subtracting the emissions from the existing conditions from the project emissions, as reported in Table 35a and Table 35b. The controlled scenario incorporates construction emission reductions for Tier 4 construction equipment with the exception of bore/drill rigs and cranes and model year truck restrictions, as well as a operational emissions reductions from a transportation demand management program, Tier 4 generators, supercompliant paints, and electric landscaping equipment during operations. Mitigated emissions were calculating assuming a 10% reduction according to a Transportation Management Plan.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pounds
NO_x - nitrogen oxides
PM - particulate matter
$PM_{2.5}$ - PM less than 2.5 microns in diameter
PM_{10} - PM less than 10 microns in diameter
ROG - reactive organic gases
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 39m
Age Sensitivity Weighted Intake Factors by Year and Age Bin for Scenario 12 and Revised Variant
Stonestown Redevelopment
San Francisco, California

Year[1]	Resident					Onsite Daycare Child			Offsite Daycare Child		Pre-School - 8th Grade Child			
	Fraction of Year in Age Bin[2]				Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]		Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]	Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]	Fraction of Year in Age Bin[2]			Age Sensitivity Weighted Intake Factor by Year, Inhalation[3,4]
	3rd Trimester	0-2	2-16	16-30	(m^3/kg-day)	0-2	2-9	(m^3/kg-day)	2-9	(m^3/kg-day)	2-9	2-9	2-16	(m^3/kg-day)
2032	**0.50**	**0.50**			**0.10**	1		0.15	1	0.026	1			0.019
2033		1			**0.15**	1		0.15	1	0.026	1			0.019
2034		**0.75**	**0.25**		**0.117**	**0.50**	**0.50**	**0.087**	1	0.026	1			0.019
2035			1		0.024		1	0.026	**1.00**	0.026	**0.50**	**0.50**		**0.016**
2036			1		0.024		1	0.026				1		0.014
2037			1		0.024		1	0.026				1		0.014
2038			1		0.024		1	0.026				1		0.014
2039			1		0.024		1	0.026				**0.50**	**0.50**	0.012
2040			1		0.024		1	0.026					1	0.011
2041			1		0.024		**0.50**	**0.0129**					1	0.011
2042			1		0.024								1	0.011
2043			1		0.024								1	0.011
2044			1		0.024								**0.50**	**0.0054**
2045			1		0.024									
2046			1		0.024									
2047			1		0.024									
2048			**0.75**	**0.25**	**0.018**									
2049				1	0.0026									
2050				1	0.0026									
2051				1	0.0026									
2052				1	0.0026									
2053				1	0.0026									
2054				1	0.0026									
2055				1	0.0026									
2056				1	0.0026									
2057				1	0.0026									
2058				1	0.0026									
2059				1	0.0026									
2060				1	0.0026									
2061				1	0.0026									
2062				**0.75**	**0.0019**									

Notes:

1. Exposure Scenario 12 begins at the conclusion of Project construction when the Project is fully operational in 2032.
2. The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. While the 3rd Trimester is only 3 months, the exposure duration for the first year is set to 1 since annual average concentrations are used to calculate risks.
3. The Intake Factors have been multiplied by the Age Sensitivity Factors and weighted by the exposure duration for each age bin.
4. Intake Factors are based on exposure assumptions in Methodology Table 4.

Abbreviations:

IF - intake factor
m^3 - cubic meter
kg - kilogram

References:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

RAMBOLL

Table 41a
Maximum Uncontrolled Revised Variant Health Impacts by Population Type
Stonestown Redevelopment
San Francisco, California

Onsite

Receptor Type	Resident			Daycare		
Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	18.9	0.0085	**0.25**	**14.7**	0.0039	0.15
Background[5]	91	--	**8.2**	91	--	8.2
Total	110	--	**8.5**	105	--	8.4
MEI Location						
UTMx	546240	546020	546000	546240	545940	545940
UTMy	4175980	4175920	4175660	4175980	4175920	4175920
Exposure Scenario[6]	S12	S7	S8	S12	S7	S7
Year Occurred[6]	--	2028	2029	--	2028	2028
Source Contribution						
Construction	0	0.0078	**0.17**	0	0.0034	0.075
Operations	**17.0**	6.9E-04	**0.0014**	**12.9**	5.5E-04	0.0026
Traffic	1.9	--	0.071	1.9	--	0.071

Offsite

Receptor Type	Resident			Daycare			Pre-school to 8th Grade Students		
Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	**23.5**	0.013	**0.28**	**6.1**	0.013	0.29	**12.8**	0.012	0.20
Background[5]	125	--	8.2	86	--	9.1	94	--	9.5
Total	**148**	--	**8.5**	92	--	9.4	**106**	--	9.7
MEI Location									
UTMx	546300	545920	545920	546240	546240	546240	546320	546300	546320
UTMy	4176000	4175600	4175580	4176040	4176040	4176040	4175960	4175960	4175960
Exposure Scenario[6]	S3	S1	S1	S3	S1	S1	S2	S1	S1
Year Occurred[6]	--	2029	2029	--	2026	2026	--	2026	2026
Source Contribution									
Construction	**14.6**	0.013	**0.25**	**3.8**	0.013	0.22	**9.1**	0.012	0.13
Operations	**7.1**	2.1E-04	**0.0012**	**0.40**	0	0	**1.8**	0	0
Traffic[7]	1.9	--	0.026	1.9	--	0.071	1.9	--	0.071

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a resident child, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). TACs in this project include DPM.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
7. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf
BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

RAMBOLL

Table 41b
Maximum Controlled Revised Variant Health Impacts by Population Type
Stonestown Redevelopment
San Francisco, California

Onsite

Receptor Type	Resident			Daycare		
Source	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**
Maximum Project Impacts[4]	6.2	0.0038	**0.22**	4.0	0.0015	0.14
Background[5]	71	--	**8.2**	66	--	8.2
Total	77	--	**8.4**	70	--	8.4
MEI Location						
UTMx	546220	546020	546000	546220	545940	545940
UTMy	4175640	4175920	4175660	4175900	4175920	4175920
Exposure Scenario[6]	S10	S7	S8	S9	S7	S7
Year Occurred[6]	--	2028	2029	--	2028	2028
Source Contribution						
Construction	**2.2**	0.0037	**0.15**	1.3	0.0014	0.067
Operations	**2.1**	**8.8E-05**	**4.4E-04**	**0.83**	**6.7E-05**	**3.4E-04**
Traffic	1.9	--	0.071	1.9	--	0.071

Offsite

Receptor Type	Resident			Daycare			Pre-school to 8th Grade Students		
Source	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**	**Excess Lifetime Cancer Risk (in a million)[1]**	**Non-Cancer Hazard Index[2]**	**$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]**
Maximum Project Impacts[4]	8.9	**0.0039**	**0.24**	**2.8**	**0.0028**	0.24	4.4	**0.0020**	0.17
Background[5]	57	--	**8.2**	86	--	**9.4**	94	--	9.5
Total	66	--	**8.4**	89	--	**9.6**	98	--	9.7
MEI Location									
UTMx	546220	546220	545920	546240	546240	546240	546320	546320	546320
UTMy	4175500	4175500	4175580	4176040	4176040	4176040	4175940	4175960	4175960
Exposure Scenario[6]	S6	S1	S1	S3	S1	S1	S3	S1	S1
Year Occurred[6]	--	2030	2029	--	2027	2026	--	2027	2026
Source Contribution									
Construction	**6.3**	**0.0038**	**0.21**	**0.93**	**0.0028**	**0.16**	2.2	**0.0020**	0.10
Operations	**0.65**	**1.6E-04**	**4.4E-04**	**0.046**	--	--	**0.29**	--	--
Traffic[7]	1.9	--	0.026	1.9	--	0.071	1.9	--	0.071

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a resident child, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). TACs in this project include DPM.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
7. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf
BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

RAMBOLL

Table 42a
Maximum Uncontrolled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Meet APEZ Criteria

Source	Excess Lifetime Cancer Risk (in a million)	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)
Maximum Revised Variant Impact[1]	**23.5**	0.23
MEI Location		
UTMx	546300	546280
UTMy	4176000	4176560
Receptor Type	Offsite Resident	Offsite Resident
Exposure Scenario[4]	S3	S1
Year Occurred[4]	--	2026
Source Contribution		
Construction	**14.6**	0.16
Operations	**7.1**	0
Traffic	1.9	0.071

Not Meet APEZ Criteria

Source	Excess Lifetime Cancer Risk (in a million)		$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)	
	Revised Variant Contribution	Total with Background[2]	Revised Variant Contribution	Total with Background[2]
Maximum Revised Variant Impact[1]	**21.2**	**78.1**	**0.28**	8.5
MEI Location				
UTMx	546220		545920	
UTMy	4175500		4175580	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S5		S1	
Year Occurred	--		2029	
Source Contribution				
Construction	**16.1**		**0.25**	
Operations	**3.2**		**0.0012**	
Traffic[5]	1.9		0.026	
Maximum Total Impact[1]	**16.2**	113	0.074	9.8
MEI Location				
UTMx	546300		546200	
UTMy	4175660		4176540	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S4		S1	
Year Occurred[4]	--		2028	
Source Contribution				
Construction	**11.3**		0.0031	
Operations	**3.0**		2.3E-05	
Traffic	1.9		0.071	

Table 42a
Maximum Uncontrolled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Notes:

1. Maximum project impacts indicate the maximum cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
2. Background cancer risks and $PM_{2.5}$ concentrations were obtained from the 2020 San Francisco Citywide HRA database.
3. Maximum total impacts indicate the maximum background plus revised variant impacts. Note the background cancer risk for receptors not in an APEZ was < 100 in a million and background $PM_{2.5}$ for receptors not in an APEZ was <10 ug/m^3.
4. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
5. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

Table 42b
Maximum Controlled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Meet APEZ Criteria

Source	Excess Lifetime Cancer Risk (in a million)	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)
Maximum Revised Variant Impact[1]	6.5	0.19
MEI Location		
UTMx	546300	546260
UTMy	4176000	4176040
Receptor Type	Offsite Resident	Offsite Daycare
Exposure Scenario[4]	S3	S1
Year Occurred[4]	--	2026
Source Contribution		
Construction	3.7	0.12
Operations	**0.94**	0
Traffic	1.9	0.071

Not Meet APEZ Criter

Source	Excess Lifetime Cancer Risk (in a million)		$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)	
	Revised Variant Contribution	Total with Background[2]	Revised Variant Contribution	Total with Background[2]
Maximum Revised Variant Impact[1]	8.9	65.8	**0.24**	**8.4**
MEI Location				
UTMx	546220		545920	
UTMy	4175500		4175580	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S6		S1	
Year Occurred	--		2029	
Source Contribution				
Construction	**6.3**		**0.21**	
Operations	**0.65**		**0**	
Traffic[5]	1.9		0.026	
Maximum Total Impact[1]	6.1	102.4	0.072	9.9
MEI Location				
UTMx	546300		546220	
UTMy	4175660		4176840	
Receptor Type	Offsite Resident		Offsite Resident	
Exposure Scenario[4]	S5		S1	
Year Occurred[4]	--		2027	
Source Contribution				
Construction	**3.3**		**9.3E-04**	
Operations	**1.0**		--	
Traffic	1.9		0.071	

Table 42b
Maximum Controlled Existing Plus Revised Variant Cancer Risks and PM2.5 Concentration for APEZ and non-APEZ Receptors
Stonestown Redevelopment
San Francisco, California

Notes:

1. Maximum project impacts indicate the maximum cancer risks or $PM_{2.5}$ concentration from the Revised Variant. Total impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
2. Background cancer risks and $PM_{2.5}$ concentrations were obtained from the 2020 San Francisco Citywide HRA database.
3. Maximum total impacts indicate the maximum background plus revised variant impacts. Note the background cancer risk for receptors not in an APEZ was < 100 in a million and background $PM_{2.5}$ for receptors not in an APEZ was <10 ug/m^3.
4. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.
5. At the MEI location (UTMx: 545920 and UTMy: 4175580) that is 145 ft away from Buckingham Way, the $PM_{2.5}$ concentration of traffic impacts was estimated using BAAQMD Roadway Screening Analysis Calculator at a distance of 145 ft from roadway.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEI - maximally exposed individual
m - meter

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf
BAAQMD. 2015. Roadway Screening Analysis Calculator. April. Available at : http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/screeningcalculator_4_16_15-xlsx.xlsx?la=en

Table 45a
Maximum Uncontrolled Revised Variant Health Impacts for Workers
Stonestown Redevelopment
San Francisco, California

Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	**4.8**	**0.017**	**0.50**
Background[5]	30	--	8.3
Total	35	--	8.8
MEIW Location			
UTMx	546060	546020	546020
UTMy	4175900	4175600	4175600
Exposure Scenario[6]	S1	S1	S1
Year Occurred[6]	--	2029	2029
Source Contribution			
Construction	2.5	**0.017**	**0.42**
Operations	**0.49**	**2.7E-04**	**0.0014**
Traffic	1.9	--	0.071

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a worker, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). The TAC in this project is DPM. With the impacts of the additional excavation in the northwest corner, the cancer risk due to construction with Phase 6 impact only was scaled up by 24% as a conservative estimate.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management Distric
MEIW - maximally exposed individual worker
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

Table 45b
Maximum Controlled Revised Variant Health Impacts for Workers
Stonestown Redevelopment
San Francisco, California

Source	Excess Lifetime Cancer Risk (in a million)[1]	Non-Cancer Hazard Index[2]	$PM_{2.5}$ Concentration ($\mu g/m^3$, Annual Average)[3]
Maximum Project Impacts[4]	2.9	**0.0053**	**0.43**
Background[5]	45	--	8.3
Total	48	--	8.7
MEIW Location			
UTMx	546160	546160	546020
UTMy	4175600	4175600	4175600
Exposure Scenario[6]	S2	S1	S1
Year Occurred[6]	--	2030	2029
Source Contribution			
Construction	**0.88**	**0.0052**	**0.36**
Operations	**0.098**	**1.4E-04**	5.2E-04
Traffic	1.9	--	**0.071**

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average concentration of toxic air contaminants (TACs), the intake factor for a worker, the Cancer Potency Factors (CPF) for TACs, and the Age Sensitivity Factors (ASF). The TAC in this project is DPM.
2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration to the noncancer chronic Reference Exposure Level (REL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a chronic hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the chronic hazard quotients for all chemicals are summed, yielding a hazard index (HI).
3. $PM_{2.5}$ concentration and Non-Cancer Hazard Index represent annual values.
4. Maximum project impacts indicate the maximum controlled cancer risks or $PM_{2.5}$ concentration from the Proposed Project Variant, including the total project impacts from construction and operations. Total project impacts conservatively include impacts from project traffic derived using the 2015 BAAQMD Roadway Screening Analysis Calculator.
5. Background cancer risks and PM2.5 concentrations were obtained from the 2020 San Francisco Citywide HRA database.
6. Exposure Scenario and Year Occurred correspond to the exposure scenario (e.g. S1 = Scenario 1) and year of maximum impacts. As cancer risk is a lifetime probability, there is no year associated with maximum risk.

Abbreviations:

APEZ - Air Pollutant Exposure Zone
BAAQMD - Bay Area Air Quality Management District
MEIW - maximally exposed individual worker
m - meter
$PM_{2.5}$ - particulate matter 2.5 microns or less
UTM - Universal Transverse Mercator
ug - micrograms

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. Available online at: https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Air_Pollutant_Exposure_Zone_Technical_Documentation_2020.pdf

FIGURES

Figure 1b
Proposed Project Phasing Schedule for Revised Variant
Stonestown Redevelopment
San Francisco, California

Variant Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year	2024				2025				2026				2027				2028				2029				2030				2031				2032			
		Start	End			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Demolition	04/15/24	06/10/24	40	--																																		
	Site Preparation	04/01/24	06/10/24	50	--																																		
	Grading, Shoring, Excavating	05/28/24	01/14/25	159	--																																		
	Building Construction	12/02/24	01/11/28	796	--																																		
	Paving	02/01/26	05/01/26	64	--																																		
	Architectural Coating	12/01/25	01/11/28	544	2028																																		
Phase 2	Demolition	05/02/25	07/21/25	57	--																																		
	Site Preparation	04/01/25	07/21/25	80	--																																		
	Grading, Shoring, Excavating	06/21/25	05/21/26	239	--																																		
	Building Construction	05/22/26	12/22/28	676	--																																		
	Paving	10/01/28	11/01/28	23	--																																		
	Architectural Coating	06/01/27	12/22/28	409	2028																																		
Phase 3	Demolition	07/02/26	09/20/26	58	--																																		
	Site Preparation	06/01/26	07/01/26	21	--																																		
	Grading and Shoring	08/20/26	07/20/27	239	--																																		
	Building Construction	08/01/26	10/01/28	577	--																																		
	Paving	06/01/27	07/01/27	21	--																																		
	Architectural Coating	10/01/27	10/01/28	261	2028																																		
Phase 4	Demolition	06/02/27	09/10/27	73	--																																		
	Site Preparation	04/01/27	06/01/27	44	--																																		
	Grading, Shoring, Excavate	08/10/27	07/10/28	244	--																																		
	Building Construction	03/01/28	12/01/30	732	--																																		
	Paving	08/01/30	10/01/30	44	--																																		
	Architectural Coating	03/01/29	12/01/30	457	2030																																		
Phase 5	Demolition	06/02/28	08/21/28	58	--																																		
	Site Preparation	04/01/28	06/01/28	44	--																																		
	Grading, Shoring, Excavation	07/21/28	06/21/29	244	--																																		
	Building Construction	04/21/29	11/01/31	673	--																																		
	Paving	07/26/30	09/26/30	44	--																																		
	Architectural Coating	04/21/30	11/01/31	399	2031																																		
Phase 6	Demolition	05/02/29	06/21/29	36	--																																		
	Site Preparation	04/01/29	05/01/29	21	--																																		
	Grading, Shoring, Excavating	06/01/29	02/01/30	169	--																																		
	Building Construction	02/05/30	06/15/32	615	--																																		
	Paving	09/01/31	11/15/31	54	--																																		
	Architectural Coating	02/01/31	06/30/32	368	2032																																		

Key:

Active Construction Period

Full Operation

Project and Revised Variant Cancer Risk MEIs

- Offsite Daycare
- Offsite Resident
- Offsite School Children
- Onsite Daycare and Resident
- Worker

Chronic HI MEIs

- Project and Revised Variant Offsite Daycare
- Project and Revised Variant Offsite Resident
- Project and Revised Variant Worker
- Project Offsite School Children
- Project Onsite Daycare
- Project Onsite Resident
- Revised Variant Offsite School Children
- Revised Variant Onsite Daycare
- Revised Variant Onsite Resident

Project and Revised Variant PM2.5 MEIs

- Offsite Daycare
- Offsite Resident
- Offsite School Children
- Onsite Daycare
- Onsite Resident
- Worker

UNCONTROLLED MAXIMALLY EXPOSED INDIVIDUALS

Stonestown Redevelopment
San Francisco, California

FIGURE 06a

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

C:\Users\LLI\Ramboll\Stonestown Development Air Quality Proposal - Stonestown GIS\Stonestown GIS.aprx\Ramboll_ANSI_B_Landscape
PROJECT: 1690000XXXX | DATED: 4/6/2023 | DESIGNER: LLI

APPENDIX B
EMISSIONS FOR HEALTH RISK ASSESSMENT

Revised Variant Construction Emissions Scaling Factors

Emission scaling factors will need to apply to Scenarios 2-11

						S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
				Exposure Start Date		4/1/2024	4/1/2025	6/1/2026	4/1/2027	4/1/2028	4/1/2029	1/12/2028	12/23/2028	10/2/2028	12/2/2030	11/2/2031	7/1/2032
				5 days/week		S1-2024	S2-2025	S3-2026	S4-2027	S5-2028	S6-2029	S7-2028	S8-2028	S9-2028	S10-2030	S11-2031	S12-2032
Parcel	Subphase	Start Date	End Date	# Construction Days		2024	2025	2026	2027	2028	2029	2028	2028	2028	2030	2031	2032
Phase 1	Demolition	4/15/2024	6/10/2024	40	0.153424658	1	0	0	0	0	0	0	0	0	0	0	0
Phase 1	Site Preparation	4/1/2024	6/10/2024	50	0.191780822	1	0	0	0	0	0	0	0	0	0	0	0
Phase 1	Grading, Shoring, Excavating	5/28/2024	1/14/2025	159	0.609863014	1	0	0	0	0	0	0	0	0	0	0	0
Phase 1	Building Construction	12/2/2024	1/11/2028	796	3.053150685	1	0.753424658	0.58630137	0.753424658	0	0	0	0	0	0	0	0
Phase 1	Paving	2/1/2026	5/1/2026	64	0.245479452	1	1	0	0	0	0	0	0	0	0	0	0
Phase 1	Architectural Coating	12/1/2025	1/11/2028	544	2.086575342	1	1	0.58630137	0.753424658	0	0	0	0	0	0	0	0
Phase 2	Demolition	5/2/2025	7/21/2025	57	0.218630137	1	1	0	0	0	0	0	0	0	0	0	0
Phase 2	Site Preparation	4/1/2025	7/21/2025	80	0.306849315	1	1	0	0	0	0	0	0	0	0	0	0
Phase 2	Grading, Shoring, Excavating	6/21/2025	5/21/2026	239	0.916712329	1	1	0	0	0	0	0	0	0	0	0	0
Phase 2	Building Construction	5/22/2026	12/22/2028	676	2.592876712	1	1	0.58630137	0.753424658	0.745098039	0	0.969187675	0	0.229691877	0	0	0
Phase 2	Paving	10/1/2028	11/1/2028	23	0.088219178	1	1	1	1	1	0	1	0	0.10130719	0	0	0
Phase 2	Architectural Coating	6/1/2027	12/22/2028	409	1.568767123	1	1	1	1	0.745098039	0	0.969187675	0	0.229691877	0	0	0
Phase 3	Demolition	7/2/2026	9/20/2026	58	0.223561644	1	1	1	0	0	0	0	0	0	0	0	0
Phase 3	Site Preparation	6/1/2026	7/1/2026	21	0.082191781	1	1	1	0	0	0	0	0	0	0	0	0
Phase 3	Grading and Shoring	8/20/2026	7/20/2027	239	0.915068493	1	1	1	0.552238806	0	0	0	0	0	0	0	0
Phase 3	Building Construction	8/1/2026	10/1/2028	577	2.213260274	1	1	1	0.753424658	0.669090909	0	0.96	0	0	0	0	0
Phase 3	Paving	6/1/2027	7/1/2027	21	0.082191781	1	1	1	1	0	0	0	0	0	0	0	0
Phase 3	Architectural Coating	10/1/2027	10/1/2028	261	1.002739726	1	1	1	1	0.669090909	0	0.96	0	0	0	0	0
Phase 4	Demolition	6/2/2027	9/10/2027	73	0.279452055	1	1	1	1	0	0	0	0	0	0	0	0
Phase 4	Site Preparation	4/1/2027	6/1/2027	44	0.170465753	1	1	1	1	0	0	0	0	0	0	0	0
Phase 4	Grading, Shoring, Excavate	8/10/2027	7/10/2028	244	0.936164384	1	1	1	1	0.526041667	0	0.942708333	0	0	0	0	0
Phase 4	Building Construction	3/1/2028	12/1/2030	732	2.808493151	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0	0	0
Phase 4	Paving	8/1/2030	10/1/2030	44	0.167123288	1	1	1	1	1	1	1	1	1	0	0	0
Phase 4	Architectural Coating	3/1/2029	12/1/2030	457	1.753424658	1	1	1	1	1	0.753424658	1	1	1	0	0	0
Phase 5	Demolition	6/2/2028	8/21/2028	58	0.223561644	1	1	1	1	1	0	1	0	0	0	0	0
Phase 5	Site Preparation	4/1/2028	6/1/2028	44	0.167123288	1	1	1	1	1	0	1	0	0	0	0	0
Phase 5	Grading, Shoring, Excavation	7/21/2028	6/21/2029	244	0.936164384	1	1	1	1	1	0.476744186	1	0.024657534	0.249315068	0	0	0
Phase 5	Building Construction	4/21/2029	11/1/2031	673	2.582136986	1	1	1	1	1	1	1	1	1	0.082191781	0	0
Phase 5	Paving	7/26/2030	9/26/2030	44	0.169863014	1	1	1	1	1	1	1	1	1	0	0	0
Phase 5	Architectural Coating	4/21/2030	11/1/2031	399	1.531506849	1	1	1	1	1	1	1	1	1	0.082191781	0	0
Phase 6	Demolition	5/2/2029	6/21/2029	36	0.136986301	1	1	1	1	1	1	1	1	1	0	0	0
Phase 6	Site Preparation	4/1/2029	5/1/2029	21	0.082191781	1	1	1	1	1	1	1	1	1	0	0	0
Phase 6	Grading, Shoring, Excavating	6/1/2029	2/1/2030	169	0.646575342	1	1	1	1	1	1	1	1	1	0	0	0
Phase 6	Building Construction	2/5/2030	6/15/2032	615	2.35890411	1	1	1	1	1	1	1	1	1	0.082191781	0.164383562	0
Phase 6	Paving	9/1/2031	11/15/2031	54	0.205479452	1	1	1	1	1	1	1	1	1	1	0.043887147	0
Phase 6	Architectural Coating	2/1/2031	6/30/2032	368	1.410958904	1	1	1	1	1	1	1	1	1	1	0.164383562	0

RAMBOLL

Revised Variant Generation Emissions Scaling Factors

Emission scaling factors will need to apply to Scenarios 5-12 (Variant)			S1	S2	S3	S4	S5	S6	S7	S8	S9	S10V	S11	S12
		Scenario Exposure Start Date	4/1/2024	4/1/2025	6/1/2026	4/1/2027	4/1/2028	4/1/2029	1/12/2028	12/23/2028	10/2/2028	12/2/2030	11/2/2031	7/1/2032
			S1-2024	S2-2025	S3-2026	S4-2027	S5-2028	S6-2029	S7-2028	S8-2028	S9-2028	S10V-2030	S11-2031	S12-2032
Generator	Phase	Operational Date	2024	2025	2026	2027	2028	2029	2028	2028	2028	2030	2031	2032
NW1	P1	1/12/2028	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0.082191781	0.164383562	0.504109589
NW2	P1	1/12/2028	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0.082191781	0.164383562	0.504109589
NW3	P1	1/12/2028	1	1	1	1	0.753424658	0.753424658	1	0.024657534	0.249315068	0.082191781	0.164383562	0.504109589
W1	P2	12/23/2028	1	1	1	1	1	0.753424658	1	1	1	0.082191781	0.164383562	0.504109589
W3	P2	12/23/2028	1	1	1	1	1	0.753424658	1	1	1	0.082191781	0.164383562	0.504109589
W4	P2	12/23/2028	1	1	1	1	1	0.753424658	1	1	1	0.082191781	0.164383562	0.504109589
S1	P5	11/2/2031	1	1	1	1	1	1	1	1	1	1	1	0.504109589
S2	P5	11/2/2031	1	1	1	1	1	1	1	1	1	1	1	0.504109589
S3	P6	7/1/2032	1	1	1	1	1	1	1	1	1	1	1	1
E1	P3	10/2/2028	1	1	1	1	1	0.753424658	1	0.024657534	1	0.082191781	0.164383562	0.504109589
E3	P4 Variant	12/2/2030	1	1	1	1	1	1	1	1	1	1	0.164383562	0.504109589
E4	P4 Variant	12/2/2030	1	1	1	1	1	1	1	1	1	1	0.164383562	0.504109589

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	PM25	1.9E-05	2025	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	1.8E-04	2026	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	1.5E-04	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	3.7E-06	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	1.0E-05	2024	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.2E-05	2024	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	4.4E-06	2024	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.2E-06	2024	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.1E-05	2024	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2024	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	1.1E-04	2025	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.3E-04	2025	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	5.2E-05	2025	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.4E-05	2025	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.1E-04	2025	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.3E-05	2025	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	8.8E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.1E-04	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	5.1E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	2.9E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	8.8E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.1E-05	2026	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	7.2E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	9.0E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	4.9E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	2.4E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	7.5E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	9.0E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	1.9E-06	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	2.2E-06	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	1.4E-06	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	5.9E-07	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA1	PM25	2.0E-06	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	2.2E-07	2028	UNMIT	Building Construction_Welders	Welders
PAREA1	PM25	2.4E-05	2024	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	PM25	6.9E-05	2024	UNMIT	Demolition_Excavators	Excavators
PAREA1	PM25	3.5E-04	2024	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	1.6E-05	2024	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	1.6E-04	2024	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	5.9E-05	2024	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	3.3E-05	2024	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	1.0E-04	2024	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	6.2E-05	2024	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	8.4E-05	2024	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	9.8E-07	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	8.8E-06	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	3.2E-06	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	2.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	5.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	3.3E-06	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	4.3E-06	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	4.4E-05	2026	UNMIT	Paving_Pavers	Pavers
PAREA1	PM25	7.8E-05	2026	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA1	PM25	3.9E-05	2026	UNMIT	Paving_Rollers	Rollers
PAREA1	PM25	2.5E-04	2024	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	8.3E-05	2024	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	9.0E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	1.2E-04	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	2.1E-04	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA2	PM25	5.5E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	6.8E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	2.8E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	1.8E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA2	PM25	5.5E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	6.8E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA2	PM25	3.1E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA2	PM25	7.4E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	9.2E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	4.5E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.4E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA2	PM25	7.7E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	9.2E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA2	PM25	2.8E-04	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA2	PM25	6.2E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	7.3E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	4.2E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	1.9E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA2	PM25	6.6E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.3E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA2	PM25	2.9E-05	2025	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	PM25	8.5E-05	2025	UNMIT	Demolition_Excavators	Excavators
PAREA2	PM25	3.9E-04	2025	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA2	PM25	1.0E-05	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	9.0E-05	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	3.3E-05	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	1.9E-05	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	5.2E-05	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	3.0E-05	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	9.3E-05	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.4E-06	2026	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	5.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	2.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	1.3E-05	2026	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	4.2E-05	2026	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	2.0E-05	2026	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	5.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.3E-05	2028	UNMIT	Paving_Pavers	Pavers
PAREA2	PM25	2.7E-05	2028	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA2	PM25	1.1E-05	2028	UNMIT	Paving_Rollers	Rollers
PAREA2	PM25	3.1E-04	2025	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	1.1E-04	2025	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	3.9E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	9.3E-05	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	5.9E-05	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA3	PM25	3.8E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	4.7E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	1.5E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.3E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA3	PM25	3.8E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	4.7E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA3	PM25	1.3E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA3	PM25	7.5E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	9.3E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	3.4E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	2.5E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA3	PM25	7.8E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	9.3E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA3	PM25	8.9E-05	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA3	PM25	4.8E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	5.7E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	2.5E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.5E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA3	PM25	5.2E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	5.7E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA3	PM25	2.5E-05	2026	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	PM25	7.3E-05	2026	UNMIT	Demolition_Excavators	Excavators
PAREA3	PM25	4.5E-04	2026	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	7.0E-06	2026	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	5.3E-05	2026	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	2.0E-05	2026	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	1.2E-05	2026	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	4.0E-05	2026	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	2.5E-05	2026	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.0E-05	2027	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	7.3E-05	2027	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	2.6E-05	2027	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	1.8E-05	2027	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	5.5E-05	2027	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	3.2E-05	2027	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.4E-05	2027	UNMIT	Paving_Pavers	Pavers
PAREA3	PM25	2.4E-05	2027	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA3	PM25	1.2E-05	2027	UNMIT	Paving_Rollers	Rollers
PAREA3	PM25	9.2E-05	2026	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	2.3E-05	2026	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	8.7E-05	2029	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	8.1E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	9.9E-05	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	5.4E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	6.4E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	2.8E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	1.7E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	5.8E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	6.3E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA4V	PM25	1.2E-04	2029	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	5.7E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	6.4E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	3.1E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	1.7E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	6.3E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	6.3E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA4V	PM25	9.9E-05	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	4.8E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	5.0E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	2.8E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	PM25	1.3E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	5.3E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	4.9E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA4V	PM25	2.6E-05	2027	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	PM25	8.4E-05	2027	UNMIT	Demolition_Excavators	Excavators
PAREA4V	PM25	5.1E-04	2027	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	8.5E-06	2027	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	6.0E-05	2027	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	PM25	2.2E-05	2027	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	1.5E-05	2027	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	4.6E-05	2027	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	5.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.1E-05	2028	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	7.3E-05	2028	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	PM25	2.7E-05	2028	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	2.0E-05	2028	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	6.0E-05	2028	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	6.2E-05	2028	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	2.2E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA4V	PM25	4.8E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	PM25	1.9E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA4V	PM25	1.7E-04	2027	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	4.1E-05	2027	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	6.2E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	6.3E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	2.0E-04	2029	UNMIT	Building Construction_Cranes	Cranes
PAREA5	PM25	4.0E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	4.5E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	4.3E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	1.2E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA5	PM25	4.4E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	4.4E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA5	PM25	2.7E-04	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA5	PM25	5.2E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	5.4E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	6.0E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	1.5E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA5	PM25	5.8E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	5.4E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA5	PM25	2.2E-04	2031	UNMIT	Building Construction_Cranes	Cranes
PAREA5	PM25	3.9E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	3.9E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	4.9E-05	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	1.0E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA5	PM25	4.4E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	3.9E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA5	PM25	1.7E-05	2028	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	PM25	6.1E-05	2028	UNMIT	Demolition_Excavators	Excavators
PAREA5	PM25	4.0E-04	2028	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	9.4E-06	2028	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	6.2E-05	2028	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	2.3E-05	2028	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	1.7E-05	2028	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	5.1E-05	2028	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	5.3E-05	2028	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	9.5E-06	2029	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	6.2E-05	2029	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	2.2E-05	2029	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	1.7E-05	2029	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	5.3E-05	2029	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	5.0E-05	2029	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	2.3E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA5	PM25	4.8E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA5	PM25	1.9E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA5	PM25	1.7E-04	2028	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	3.5E-05	2028	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	6.9E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	3.3E-05	2032	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	4.6E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	4.8E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	2.7E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	1.3E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA6	PM25	5.1E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	4.8E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA6	PM25	4.6E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	4.6E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	2.9E-05	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	1.2E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA6	PM25	5.2E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	4.5E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA6	PM25	1.9E-05	2032	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	1.8E-05	2032	UNMIT	Building Construction_Generator Sets	Generator Sets

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	1.3E-05	2032	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	4.8E-06	2032	UNMIT	Building Construction_Pumps	Pumps
PAREA6	PM25	2.2E-05	2032	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.8E-06	2032	UNMIT	Building Construction_Welders	Welders
PAREA6	PM25	8.9E-06	2029	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	PM25	3.5E-05	2029	UNMIT	Demolition_Excavators	Excavators
PAREA6	PM25	2.4E-04	2029	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.1E-05	2029	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	7.3E-05	2029	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	PM25	1.1E-05	2029	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	6.3E-05	2029	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	3.0E-05	2029	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.5E-06	2030	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	1.0E-05	2030	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	PM25	1.7E-06	2030	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	6.9E-06	2030	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	4.1E-06	2030	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	2.5E-05	2031	UNMIT	Paving_Pavers	Pavers
PAREA6	PM25	5.2E-05	2031	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA6	PM25	2.2E-05	2031	UNMIT	Paving_Rollers	Rollers
PAREA6	PM25	8.2E-05	2029	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.6E-05	2029	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	PM25	2.2E-07	2025	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	1.8E-07	2025	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.6E-07	2025	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.5E-06	2026	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.1E-06	2026	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2026	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.3E-06	2027	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.0E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.6E-08	2028	UNMIT	Architectural Coating_Worker	Worker
PAREA1	PM25	5.8E-08	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.7E-07	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.1E-08	2024	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.0E-09	2024	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.4E-08	2024	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-09	2024	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.1E-06	2024	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	9.1E-07	2024	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2024	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-07	2024	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-06	2024	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.2E-07	2025	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.1E-08	2025	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.5E-07	2025	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-08	2025	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2025	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	1.1E-05	2025	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.7E-07	2025	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-06	2025	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2025	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	9.6E-09	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.2E-07	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.2E-08	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2026	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.2E-07	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.6E-06	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.8E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	8.5E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.9E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.1E-08	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2027	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.8E-07	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.4E-06	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-09	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA1	PM25	2.3E-10	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA1	PM25	2.9E-10	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.3E-07	2028	UNMIT	Building Construction_Worker	Worker
PAREA1	PM25	2.9E-07	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-08	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-06	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2024	UNMIT	Demolition_Hauling	Hauling
PAREA1	PM25	5.2E-09	2024	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	3.0E-08	2024	UNMIT	Demolition_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	PM25	1.7E-09	2024	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	8.8E-08	2024	UNMIT	Demolition_Worker	Worker
PAREA1	PM25	7.4E-08	2024	UNMIT	Demolition_Worker	Worker
HAUL	PM25	2.3E-07	2024	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.3E-07	2024	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	3.0E-07	2024	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.4E-06	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	7.1E-08	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.1E-07	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	1.2E-08	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	1.2E-06	2024	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	9.7E-07	2024	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.1E-06	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.6E-06	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	3.9E-06	2024	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.2E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	4.0E-09	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.1E-08	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	6.3E-10	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	7.2E-08	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	6.1E-08	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.7E-07	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.5E-08	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.5E-07	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.7E-08	2026	UNMIT	Paving_Hauling	Hauling
PAREA1	PM25	2.3E-09	2026	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	2.7E-08	2026	UNMIT	Paving_Vendor	Vendor
PAREA1	PM25	1.5E-09	2026	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	1.1E-07	2026	UNMIT	Paving_Worker	Worker
PAREA1	PM25	9.3E-08	2026	UNMIT	Paving_Worker	Worker
HAUL	PM25	9.9E-08	2026	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	2.0E-07	2026	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	4.0E-07	2026	UNMIT	Paving_Worker	Worker
HAUL	PM25	5.5E-08	2024	UNMIT	Site Preparation_Worker	Worker
PAREA1	PM25	4.6E-08	2024	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.9E-07	2024	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	2.4E-06	2027	UNMIT	Architectural Coating_Worker	Worker
PAREA2	PM25	2.1E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.3E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.8E-06	2028	UNMIT	Architectural Coating_Worker	Worker
PAREA2	PM25	3.3E-06	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.6E-05	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.1E-08	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.0E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2026	UNMIT	Building Construction_Worker	Worker
PAREA2	PM25	1.1E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.0E-07	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.6E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.7E-08	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.3E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA2	PM25	7.1E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.1E-05	2027	UNMIT	Building Construction_Worker	Worker
PAREA2	PM25	1.8E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	7.4E-07	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.7E-07	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.2E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.5E-08	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.2E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA2	PM25	6.3E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.9E-05	2028	UNMIT	Building Construction_Worker	Worker
PAREA2	PM25	1.7E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	6.6E-07	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.5E-07	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.7E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.5E-07	2025	UNMIT	Demolition_Hauling	Hauling
PAREA2	PM25	1.2E-08	2025	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2025	UNMIT	Demolition_Vendor	Vendor
PAREA2	PM25	6.0E-09	2025	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2025	UNMIT	Demolition_Worker	Worker
PAREA2	PM25	1.0E-07	2025	UNMIT	Demolition_Worker	Worker
HAUL	PM25	5.4E-07	2025	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	8.1E-07	2025	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2025	UNMIT	Demolition_Worker	Worker
HAUL	PM25	9.4E-07	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	4.6E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.4E-07	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	7.6E-09	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	7.9E-07	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	6.6E-07	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	2.0E-06	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.0E-06	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.7E-06	2025	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.2E-07	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	2.9E-08	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.9E-08	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	5.5E-07	2026	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	4.7E-07	2026	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.3E-06	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.0E-06	2026	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	2.2E-08	2028	UNMIT	Paving_Hauling	Hauling
PAREA2	PM25	1.0E-09	2028	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	UNMIT	Paving_Vendor	Vendor
PAREA2	PM25	2.8E-10	2028	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2028	UNMIT	Paving_Worker	Worker
PAREA2	PM25	3.1E-08	2028	UNMIT	Paving_Worker	Worker
HAUL	PM25	4.5E-08	2028	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	1.4E-07	2028	UNMIT	Paving_Worker	Worker
HAUL	PM25	8.6E-08	2025	UNMIT	Site Preparation_Worker	Worker
PAREA2	PM25	7.2E-08	2025	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-07	2025	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	6.2E-07	2027	UNMIT	Architectural Coating_Worker	Worker
PAREA3	PM25	5.3E-07	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-06	2027	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.7E-06	2028	UNMIT	Architectural Coating_Worker	Worker
PAREA3	PM25	1.5E-06	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.1E-06	2028	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.4E-08	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA3	PM25	3.1E-09	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.1E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA3	PM25	1.7E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.6E-06	2026	UNMIT	Building Construction_Worker	Worker
PAREA3	PM25	4.7E-06	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.3E-07	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.0E-05	2026	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.4E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA3	PM25	6.5E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.7E-08	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA3	PM25	3.6E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2027	UNMIT	Building Construction_Worker	Worker
PAREA3	PM25	1.1E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.9E-07	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.9E-07	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.8E-05	2027	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	9.7E-08	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA3	PM25	4.4E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA3	PM25	2.5E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	8.9E-06	2028	UNMIT	Building Construction_Worker	Worker
PAREA3	PM25	7.8E-06	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	7.3E-08	2026	UNMIT	Demolition_Hauling	Hauling
PAREA3	PM25	3.5E-09	2026	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	3.3E-08	2026	UNMIT	Demolition_Vendor	Vendor
PAREA3	PM25	1.8E-09	2026	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2026	UNMIT	Demolition_Worker	Worker
PAREA3	PM25	1.0E-07	2026	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.5E-07	2026	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.4E-07	2026	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2026	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.6E-07	2026	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	7.8E-09	2026	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.4E-08	2026	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	2.4E-09	2026	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	4.6E-07	2026	UNMIT	Grading and Shoring_Worker	Worker
PAREA3	PM25	3.9E-07	2026	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-07	2026	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	3.2E-07	2026	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	1.7E-06	2026	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	2.2E-07	2027	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	1.0E-08	2027	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	5.9E-08	2027	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	3.2E-09	2027	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	6.5E-07	2027	UNMIT	Grading and Shoring_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3	PM25	5.6E-07	2027	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	4.6E-07	2027	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.3E-07	2027	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	2.5E-06	2027	UNMIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-08	2027	UNMIT	Paving_Hauling	Hauling
PAREA3	PM25	1.6E-09	2027	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	1.1E-08	2027	UNMIT	Paving_Vendor	Vendor
PAREA3	PM25	5.9E-10	2027	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2027	UNMIT	Paving_Worker	Worker
PAREA3	PM25	3.0E-08	2027	UNMIT	Paving_Worker	Worker
HAUL	PM25	7.1E-08	2027	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	7.9E-08	2027	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	1.3E-07	2027	UNMIT	Paving_Worker	Worker
HAUL	PM25	2.2E-08	2026	UNMIT	Site Preparation_Worker	Worker
PAREA3	PM25	1.9E-08	2026	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2026	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-06	2029	UNMIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.6E-06	2029	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.3E-05	2029	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.1E-06	2030	UNMIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.7E-06	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-05	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.3E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.5E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2028	UNMIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.8E-07	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.6E-05	2028	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.5E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.9E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	6.0E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.8E-05	2029	UNMIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.6E-05	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.1E-07	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-07	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	5.9E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.5E-08	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.1E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2030	UNMIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.7E-07	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.9E-07	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.3E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-07	2027	UNMIT	Demolition_Hauling	Hauling
PAREA4V	PM25	2.4E-08	2027	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	3.7E-08	2027	UNMIT	Demolition_Vendor	Vendor
PAREA4V	PM25	2.0E-09	2027	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.4E-07	2027	UNMIT	Demolition_Worker	Worker
PAREA4V	PM25	1.2E-07	2027	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.1E-06	2027	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.7E-07	2027	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	5.4E-07	2027	UNMIT	Demolition_Worker	Worker
HAUL	PM25	3.4E-07	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.6E-08	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	6.6E-08	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	3.6E-09	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	5.8E-07	2027	UNMIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	5.0E-07	2027	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	7.1E-07	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	4.8E-07	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	2.2E-06	2027	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	4.2E-07	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.9E-08	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	8.0E-08	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	4.3E-09	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	7.3E-07	2028	UNMIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	6.3E-07	2028	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	8.6E-07	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	5.8E-07	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	3.0E-06	2028	UNMIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	2.8E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA4V	PM25	1.3E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	8.5E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA4V	PM25	4.5E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	5.9E-08	2030	UNMIT	Paving_Worker	Worker
PAREA4V	PM25	5.2E-08	2030	UNMIT	Paving_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	5.7E-08	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	6.1E-08	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	2.7E-07	2030	UNMIT	Paving_Worker	Worker
HAUL	PM25	4.3E-08	2027	UNMIT	Site Preparation_Worker	Worker
PAREA4V	PM25	3.7E-08	2027	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-07	2027	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-06	2030	UNMIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.5E-06	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.0E-06	2030	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.0E-06	2031	UNMIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.7E-06	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.6E-06	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.9E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.6E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.8E-08	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.2E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	9.4E-06	2029	UNMIT	Building Construction_Worker	Worker
PAREA5	PM25	8.3E-06	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	3.9E-07	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.7E-07	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.1E-05	2029	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.6E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA5	PM25	1.1E-08	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA5	PM25	5.5E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2030	UNMIT	Building Construction_Worker	Worker
PAREA5	PM25	1.1E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-07	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.8E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.1E-07	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.9E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.3E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.0E-05	2031	UNMIT	Building Construction_Worker	Worker
PAREA5	PM25	8.9E-06	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.1E-07	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.8E-07	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	9.1E-08	2028	UNMIT	Demolition_Hauling	Hauling
PAREA5	PM25	4.2E-09	2028	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	4.0E-08	2028	UNMIT	Demolition_Vendor	Vendor
PAREA5	PM25	2.2E-09	2028	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	1.1E-07	2028	UNMIT	Demolition_Worker	Worker
PAREA5	PM25	9.3E-08	2028	UNMIT	Demolition_Worker	Worker
HAUL	PM25	1.9E-07	2028	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	2.9E-07	2028	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	4.4E-07	2028	UNMIT	Demolition_Worker	Worker
HAUL	PM25	5.8E-07	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.7E-08	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.6E-08	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	5.2E-09	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.2E-07	2028	UNMIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2028	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	7.0E-07	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.5E-06	2028	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	5.7E-07	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.5E-08	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.2E-08	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	4.9E-09	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.1E-07	2029	UNMIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2029	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	6.7E-07	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.6E-06	2029	UNMIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	2.8E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA5	PM25	1.2E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	8.7E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA5	PM25	4.6E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	6.0E-08	2030	UNMIT	Paving_Worker	Worker
PAREA5	PM25	5.3E-08	2030	UNMIT	Paving_Worker	Worker
HAUL	PM25	5.6E-08	2030	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	6.2E-08	2030	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	2.8E-07	2030	UNMIT	Paving_Worker	Worker
HAUL	PM25	4.0E-08	2028	UNMIT	Site Preparation_Worker	Worker
PAREA5	PM25	3.5E-08	2028	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.6E-07	2028	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	1.1E-06	2031	UNMIT	Architectural Coating_Worker	Worker
PAREA6	PM25	9.8E-07	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.4E-06	2031	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.6E-07	2032	UNMIT	Architectural Coating_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	5.0E-07	2032	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.9E-06	2032	UNMIT	Architectural Coating_Worker	Worker
HAUL	PM25	4.9E-08	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.2E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA6	PM25	2.4E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.7E-06	2030	UNMIT	Building Construction_Worker	Worker
PAREA6	PM25	5.1E-06	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.3E-07	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.7E-05	2030	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-08	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.3E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.8E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA6	PM25	2.5E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.1E-06	2031	UNMIT	Building Construction_Worker	Worker
PAREA6	PM25	5.4E-06	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.0E-05	2031	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	2.3E-08	2032	UNMIT	Building Construction_Hauling	Hauling
PAREA6	PM25	9.7E-10	2032	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.1E-08	2032	UNMIT	Building Construction_Vendor	Vendor
PAREA6	PM25	1.1E-09	2032	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.6E-06	2032	UNMIT	Building Construction_Worker	Worker
PAREA6	PM25	2.3E-06	2032	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2032	UNMIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.5E-07	2032	UNMIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.4E-05	2032	UNMIT	Building Construction_Worker	Worker
HAUL	PM25	1.6E-07	2029	UNMIT	Demolition_Hauling	Hauling
PAREA6	PM25	7.3E-09	2029	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	1.5E-08	2029	UNMIT	Demolition_Vendor	Vendor
PAREA6	PM25	8.1E-10	2029	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	6.2E-08	2029	UNMIT	Demolition_Worker	Worker
PAREA6	PM25	5.4E-08	2029	UNMIT	Demolition_Worker	Worker
HAUL	PM25	3.3E-07	2029	UNMIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	UNMIT	Demolition_Vendor	Vendor
HAUL	PM25	2.7E-07	2029	UNMIT	Demolition_Worker	Worker
HAUL	PM25	2.1E-07	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	9.6E-09	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	1.7E-09	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	6.7E-07	2029	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	5.9E-07	2029	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.4E-07	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.2E-07	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.9E-06	2029	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.0E-08	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	1.3E-09	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	4.3E-09	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	2.3E-10	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	9.4E-08	2030	UNMIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	8.4E-08	2030	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.1E-08	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	4.4E-07	2030	UNMIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.0E-09	2031	UNMIT	Paving_Hauling	Hauling
PAREA6	PM25	3.5E-10	2031	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	9.8E-09	2031	UNMIT	Paving_Vendor	Vendor
PAREA6	PM25	5.2E-10	2031	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	6.9E-08	2031	UNMIT	Paving_Worker	Worker
PAREA6	PM25	6.1E-08	2031	UNMIT	Paving_Worker	Worker
HAUL	PM25	1.6E-08	2031	UNMIT	Paving_Hauling	Hauling
HAUL	PM25	7.0E-08	2031	UNMIT	Paving_Vendor	Vendor
HAUL	PM25	3.4E-07	2031	UNMIT	Paving_Worker	Worker
HAUL	PM25	1.8E-08	2029	UNMIT	Site Preparation_Worker	Worker
PAREA6	PM25	1.6E-08	2029	UNMIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2029	UNMIT	Site Preparation_Worker	Worker
PAREA1	PM25	1.7E-06	2025	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	2.0E-05	2026	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	2.0E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	6.1E-07	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	PM25	7.0E-07	2024	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.2E-06	2024	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	2.5E-06	2024	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.1E-07	2024	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.2E-06	2024	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.0E-07	2024	MIT	Building Construction_Welders	Welders
PAREA1	PM25	8.5E-06	2025	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.5E-05	2025	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	3.1E-05	2025	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.7E-06	2025	MIT	Building Construction_Pumps	Pumps

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	PM25	1.5E-05	2025	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2025	MIT	Building Construction_Welders	Welders
PAREA1	PM25	8.5E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.5E-05	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	3.1E-05	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.7E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.5E-05	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2026	MIT	Building Construction_Welders	Welders
PAREA1	PM25	8.5E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	3.1E-05	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	3.7E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	1.2E-06	2027	MIT	Building Construction_Welders	Welders
PAREA1	PM25	2.6E-07	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA1	PM25	4.5E-07	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	PM25	9.3E-07	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	1.1E-07	2028	MIT	Building Construction_Pumps	Pumps
PAREA1	PM25	4.5E-07	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	3.7E-08	2028	MIT	Building Construction_Welders	Welders
PAREA1	PM25	2.2E-06	2024	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	PM25	1.1E-05	2024	MIT	Demolition_Excavators	Excavators
PAREA1	PM25	1.5E-05	2024	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	1.6E-05	2024	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	2.6E-05	2024	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	6.7E-06	2024	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	1.9E-05	2024	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	4.3E-06	2024	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	7.6E-06	2024	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	9.3E-06	2024	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	9.8E-07	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	PM25	1.7E-06	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	PM25	4.3E-07	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	PM25	1.2E-06	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	PM25	2.8E-07	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	4.9E-07	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	PM25	6.0E-07	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	PM25	6.5E-06	2026	MIT	Paving_Pavers	Pavers
PAREA1	PM25	1.1E-05	2026	MIT	Paving_Paving Equipment	Paving Equipment
PAREA1	PM25	3.6E-06	2026	MIT	Paving_Rollers	Rollers
PAREA1	PM25	1.0E-05	2024	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	PM25	9.2E-06	2024	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.2E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	2.0E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	PM25	1.8E-04	2026	MIT	Building Construction_Cranes	Cranes
PAREA2	PM25	5.3E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	9.3E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	1.7E-05	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.3E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA2	PM25	9.4E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.8E-07	2026	MIT	Building Construction_Welders	Welders
PAREA2	PM25	2.9E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA2	PM25	8.7E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	2.8E-05	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	3.8E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA2	PM25	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA2	PM25	2.8E-04	2028	MIT	Building Construction_Cranes	Cranes
PAREA2	PM25	8.5E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA2	PM25	1.5E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	PM25	2.7E-05	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	3.7E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA2	PM25	1.5E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	1.2E-06	2028	MIT	Building Construction_Welders	Welders
PAREA2	PM25	3.2E-06	2025	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	PM25	1.6E-05	2025	MIT	Demolition_Excavators	Excavators
PAREA2	PM25	2.1E-05	2025	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	1.0E-05	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	1.7E-05	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	4.4E-06	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	1.1E-05	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.8E-06	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	4.3E-06	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	1.3E-05	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	PM25	7.4E-06	2026	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	PM25	1.2E-05	2026	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	PM25	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	PM25	8.0E-06	2026	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	PM25	2.0E-06	2026	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	PM25	9.5E-06	2026	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA2	PM25	2.4E-06	2028	MIT	Paving_Pavers	Pavers
PAREA2	PM25	4.1E-06	2028	MIT	Paving_Paving Equipment	Paving Equipment
PAREA2	PM25	1.3E-06	2028	MIT	Paving_Rollers	Rollers
PAREA2	PM25	1.7E-05	2025	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	PM25	1.5E-05	2025	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	5.2E-06	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	1.5E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	PM25	4.9E-05	2026	MIT	Building Construction_Cranes	Cranes
PAREA3	PM25	3.7E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	6.5E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	8.9E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.6E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA3	PM25	6.5E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	5.4E-07	2026	MIT	Building Construction_Welders	Welders
PAREA3	PM25	1.2E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA3	PM25	8.9E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	2.1E-05	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	3.9E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA3	PM25	1.6E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA3	PM25	8.8E-05	2028	MIT	Building Construction_Cranes	Cranes
PAREA3	PM25	6.7E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA3	PM25	1.2E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	PM25	1.6E-05	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	2.9E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA3	PM25	1.2E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	9.7E-07	2028	MIT	Building Construction_Welders	Welders
PAREA3	PM25	3.2E-06	2026	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	PM25	1.6E-05	2026	MIT	Demolition_Excavators	Excavators
PAREA3	PM25	2.2E-05	2026	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	7.0E-06	2026	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	1.2E-05	2026	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	3.0E-06	2026	MIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	7.6E-06	2026	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	1.9E-06	2026	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	4.2E-06	2026	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	1.0E-05	2027	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	PM25	1.8E-05	2027	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	PM25	4.5E-06	2027	MIT	Grading and Shoring_Graders	Graders
PAREA3	PM25	1.1E-05	2027	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	PM25	2.9E-06	2027	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	6.4E-06	2027	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	PM25	2.2E-06	2027	MIT	Paving_Pavers	Pavers
PAREA3	PM25	3.8E-06	2027	MIT	Paving_Paving Equipment	Paving Equipment
PAREA3	PM25	1.2E-06	2027	MIT	Paving_Rollers	Rollers
PAREA3	PM25	4.5E-06	2026	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	PM25	4.0E-06	2026	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.7E-05	2029	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	1.9E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	PM25	9.8E-05	2028	MIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	7.4E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	1.3E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	1.4E-05	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.2E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	1.3E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.1E-06	2028	MIT	Building Construction_Welders	Welders
PAREA4V	PM25	1.2E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	8.9E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	1.5E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	1.5E-05	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.9E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	1.6E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.3E-06	2029	MIT	Building Construction_Welders	Welders
PAREA4V	PM25	9.9E-05	2030	MIT	Building Construction_Cranes	Cranes
PAREA4V	PM25	8.1E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.5E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.2E-06	2030	MIT	Building Construction_Welders	Welders
PAREA4V	PM25	4.0E-06	2027	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	PM25	2.0E-05	2027	MIT	Demolition_Excavators	Excavators
PAREA4V	PM25	2.7E-05	2027	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	8.5E-06	2027	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	1.5E-05	2027	MIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	PM25	3.8E-06	2027	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	7.8E-06	2027	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	2.4E-06	2027	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	1.1E-05	2027	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	1.1E-05	2028	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	PM25	2.0E-05	2028	MIT	Grading, Shoring, Excavate_Excavators	Excavators

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	PM25	5.0E-06	2028	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	PM25	9.8E-06	2028	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	PM25	3.2E-06	2028	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	1.4E-05	2028	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	PM25	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA4V	PM25	7.8E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	PM25	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA4V	PM25	9.3E-06	2027	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	PM25	8.2E-06	2027	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	1.4E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	1.7E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	PM25	2.0E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA5	PM25	6.2E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	1.1E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	2.1E-05	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	2.7E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA5	PM25	1.1E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	9.0E-07	2029	MIT	Building Construction_Welders	Welders
PAREA5	PM25	2.7E-04	2030	MIT	Building Construction_Cranes	Cranes
PAREA5	PM25	8.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	1.5E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	3.0E-05	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	3.9E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA5	PM25	1.6E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	1.3E-06	2030	MIT	Building Construction_Welders	Welders
PAREA5	PM25	2.2E-04	2031	MIT	Building Construction_Cranes	Cranes
PAREA5	PM25	7.4E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA5	PM25	1.3E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	PM25	2.5E-05	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	3.2E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA5	PM25	1.3E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	1.1E-06	2031	MIT	Building Construction_Welders	Welders
PAREA5	PM25	3.2E-06	2028	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	PM25	1.6E-05	2028	MIT	Demolition_Excavators	Excavators
PAREA5	PM25	2.2E-05	2028	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	9.4E-06	2028	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	1.7E-05	2028	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	4.3E-06	2028	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	8.4E-06	2028	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	2.8E-06	2028	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	1.2E-05	2028	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	9.5E-06	2029	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	PM25	1.8E-05	2029	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	PM25	4.5E-06	2029	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	PM25	8.2E-06	2029	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	PM25	2.9E-06	2029	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	1.3E-05	2029	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	PM25	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA5	PM25	7.9E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA5	PM25	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA5	PM25	9.1E-06	2028	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	PM25	8.1E-06	2028	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.9E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	1.0E-05	2032	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	PM25	7.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	1.3E-05	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	3.4E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA6	PM25	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.1E-06	2030	MIT	Building Construction_Welders	Welders
PAREA6	PM25	8.7E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	1.5E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	1.5E-05	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	3.8E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA6	PM25	1.5E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.3E-06	2031	MIT	Building Construction_Welders	Welders
PAREA6	PM25	4.0E-06	2032	MIT	Building Construction_Forklifts	Forklifts
PAREA6	PM25	6.9E-06	2032	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	PM25	6.7E-06	2032	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	1.7E-06	2032	MIT	Building Construction_Pumps	Pumps
PAREA6	PM25	7.0E-06	2032	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	5.8E-07	2032	MIT	Building Construction_Welders	Welders
PAREA6	PM25	2.0E-06	2029	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	PM25	1.0E-05	2029	MIT	Demolition_Excavators	Excavators
PAREA6	PM25	1.3E-05	2029	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.1E-05	2029	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	2.1E-05	2029	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	PM25	5.6E-06	2029	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	3.4E-06	2029	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	7.4E-06	2029	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	1.5E-06	2030	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	PM25	3.1E-06	2030	MIT	Grading, Shoring, Excavating_Excavators	Excavators

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	8.3E-07	2030	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	PM25	5.1E-07	2030	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	1.1E-06	2030	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	PM25	5.5E-06	2031	MIT	Paving_Pavers	Pavers
PAREA6	PM25	9.5E-06	2031	MIT	Paving_Paving Equipment	Paving Equipment
PAREA6	PM25	3.1E-06	2031	MIT	Paving_Rollers	Rollers
PAREA6	PM25	4.5E-06	2029	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	PM25	4.0E-06	2029	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	PM25	2.2E-07	2025	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	1.8E-07	2025	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.6E-07	2025	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.5E-06	2026	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.1E-06	2026	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2026	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.3E-06	2027	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	2.0E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.9E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.6E-08	2028	MIT	Architectural Coating_Worker	Worker
PAREA1	PM25	5.8E-08	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.7E-07	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.1E-08	2024	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.0E-09	2024	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.4E-08	2024	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-09	2024	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.1E-06	2024	MIT	Building Construction_Worker	Worker
PAREA1	PM25	9.1E-07	2024	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2024	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-07	2024	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-06	2024	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.2E-07	2025	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	1.1E-08	2025	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.5E-07	2025	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.3E-08	2025	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2025	MIT	Building Construction_Worker	Worker
PAREA1	PM25	1.1E-05	2025	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.7E-07	2025	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.8E-06	2025	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2025	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	9.6E-09	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.2E-07	2026	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.2E-08	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2026	MIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.2E-07	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.6E-06	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.8E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	8.5E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.9E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	1.1E-08	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.2E-05	2027	MIT	Building Construction_Worker	Worker
PAREA1	PM25	1.0E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.8E-07	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.4E-06	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.4E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-09	2028	MIT	Building Construction_Hauling	Hauling
PAREA1	PM25	2.3E-10	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	MIT	Building Construction_Vendor	Vendor
PAREA1	PM25	2.9E-10	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.3E-07	2028	MIT	Building Construction_Worker	Worker
PAREA1	PM25	2.9E-07	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-08	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-06	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2024	MIT	Demolition_Hauling	Hauling
PAREA1	PM25	5.2E-09	2024	MIT	Demolition_Hauling	Hauling
HAUL	PM25	3.0E-08	2024	MIT	Demolition_Vendor	Vendor
PAREA1	PM25	1.7E-09	2024	MIT	Demolition_Vendor	Vendor
HAUL	PM25	8.8E-08	2024	MIT	Demolition_Worker	Worker
PAREA1	PM25	7.4E-08	2024	MIT	Demolition_Worker	Worker
HAUL	PM25	2.3E-07	2024	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.3E-07	2024	MIT	Demolition_Vendor	Vendor
HAUL	PM25	3.0E-07	2024	MIT	Demolition_Worker	Worker
HAUL	PM25	1.4E-06	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	7.1E-08	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.1E-07	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	1.2E-08	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	1.2E-06	2024	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	9.7E-07	2024	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.1E-06	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.6E-06	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	3.9E-06	2024	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.2E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	PM25	4.0E-09	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.1E-08	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	PM25	6.3E-10	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	7.2E-08	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA1	PM25	6.1E-08	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.7E-07	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.5E-08	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.5E-07	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.7E-08	2026	MIT	Paving_Hauling	Hauling
PAREA1	PM25	2.3E-09	2026	MIT	Paving_Hauling	Hauling
HAUL	PM25	2.7E-08	2026	MIT	Paving_Vendor	Vendor
PAREA1	PM25	1.5E-09	2026	MIT	Paving_Vendor	Vendor
HAUL	PM25	1.1E-07	2026	MIT	Paving_Worker	Worker
PAREA1	PM25	9.3E-08	2026	MIT	Paving_Worker	Worker
HAUL	PM25	9.9E-08	2026	MIT	Paving_Hauling	Hauling
HAUL	PM25	2.0E-07	2026	MIT	Paving_Vendor	Vendor
HAUL	PM25	4.0E-07	2026	MIT	Paving_Worker	Worker
HAUL	PM25	5.5E-08	2024	MIT	Site Preparation_Worker	Worker
PAREA1	PM25	4.6E-08	2024	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.9E-07	2024	MIT	Site Preparation_Worker	Worker
HAUL	PM25	2.4E-06	2027	MIT	Architectural Coating_Worker	Worker
PAREA2	PM25	2.1E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.3E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.8E-06	2028	MIT	Architectural Coating_Worker	Worker
PAREA2	PM25	3.3E-06	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.6E-05	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.1E-08	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.0E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2026	MIT	Building Construction_Worker	Worker
PAREA2	PM25	1.1E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.0E-07	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.6E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.7E-08	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.3E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA2	PM25	7.1E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.1E-05	2027	MIT	Building Construction_Worker	Worker
PAREA2	PM25	1.8E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	7.4E-07	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.7E-07	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.2E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA2	PM25	1.5E-08	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.2E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA2	PM25	6.3E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.9E-05	2028	MIT	Building Construction_Worker	Worker
PAREA2	PM25	1.7E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	6.6E-07	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.5E-07	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.7E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.5E-07	2025	MIT	Demolition_Hauling	Hauling
PAREA2	PM25	1.2E-08	2025	MIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2025	MIT	Demolition_Vendor	Vendor
PAREA2	PM25	6.0E-09	2025	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2025	MIT	Demolition_Worker	Worker
PAREA2	PM25	1.0E-07	2025	MIT	Demolition_Worker	Worker
HAUL	PM25	5.4E-07	2025	MIT	Demolition_Hauling	Hauling
HAUL	PM25	8.1E-07	2025	MIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2025	MIT	Demolition_Worker	Worker
HAUL	PM25	9.4E-07	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	4.6E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.4E-07	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	7.6E-09	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	7.9E-07	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	6.6E-07	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	2.0E-06	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	1.0E-06	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.7E-06	2025	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.2E-07	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	PM25	2.9E-08	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	8.9E-08	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	PM25	4.9E-09	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	5.5E-07	2026	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA2	PM25	4.7E-07	2026	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	1.3E-06	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	6.6E-07	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.0E-06	2026	MIT	Grading, Shoring, Excavating_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	2.2E-08	2028	MIT	Paving_Hauling	Hauling
PAREA2	PM25	1.0E-09	2028	MIT	Paving_Hauling	Hauling
HAUL	PM25	5.3E-09	2028	MIT	Paving_Vendor	Vendor
PAREA2	PM25	2.8E-10	2028	MIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2028	MIT	Paving_Worker	Worker
PAREA2	PM25	3.1E-08	2028	MIT	Paving_Worker	Worker
HAUL	PM25	4.5E-08	2028	MIT	Paving_Hauling	Hauling
HAUL	PM25	3.9E-08	2028	MIT	Paving_Vendor	Vendor
HAUL	PM25	1.4E-07	2028	MIT	Paving_Worker	Worker
HAUL	PM25	8.6E-08	2025	MIT	Site Preparation_Worker	Worker
PAREA2	PM25	7.2E-08	2025	MIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-07	2025	MIT	Site Preparation_Worker	Worker
HAUL	PM25	6.2E-07	2027	MIT	Architectural Coating_Worker	Worker
PAREA3	PM25	5.3E-07	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.4E-06	2027	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.7E-06	2028	MIT	Architectural Coating_Worker	Worker
PAREA3	PM25	1.5E-06	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	7.1E-06	2028	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	6.4E-08	2026	MIT	Building Construction_Hauling	Hauling
PAREA3	PM25	3.1E-09	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.1E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA3	PM25	1.7E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.6E-06	2026	MIT	Building Construction_Worker	Worker
PAREA3	PM25	4.7E-06	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2026	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.3E-07	2026	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.0E-05	2026	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.4E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA3	PM25	6.5E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.7E-08	2027	MIT	Building Construction_Vendor	Vendor
PAREA3	PM25	3.6E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2027	MIT	Building Construction_Worker	Worker
PAREA3	PM25	1.1E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.9E-07	2027	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.9E-07	2027	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.8E-05	2027	MIT	Building Construction_Worker	Worker
HAUL	PM25	9.7E-08	2028	MIT	Building Construction_Hauling	Hauling
PAREA3	PM25	4.4E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2028	MIT	Building Construction_Vendor	Vendor
PAREA3	PM25	2.5E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	8.9E-06	2028	MIT	Building Construction_Worker	Worker
PAREA3	PM25	7.8E-06	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.0E-07	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.6E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	7.3E-08	2026	MIT	Demolition_Hauling	Hauling
PAREA3	PM25	3.5E-09	2026	MIT	Demolition_Hauling	Hauling
HAUL	PM25	3.3E-08	2026	MIT	Demolition_Vendor	Vendor
PAREA3	PM25	1.8E-09	2026	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.2E-07	2026	MIT	Demolition_Worker	Worker
PAREA3	PM25	1.0E-07	2026	MIT	Demolition_Worker	Worker
HAUL	PM25	1.5E-07	2026	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.4E-07	2026	MIT	Demolition_Vendor	Vendor
HAUL	PM25	4.3E-07	2026	MIT	Demolition_Worker	Worker
HAUL	PM25	1.6E-07	2026	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	7.8E-09	2026	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.4E-08	2026	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	2.4E-09	2026	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	4.6E-07	2026	MIT	Grading and Shoring_Worker	Worker
PAREA3	PM25	3.9E-07	2026	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-07	2026	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	3.2E-07	2026	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	1.7E-06	2026	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	2.2E-07	2027	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	PM25	1.0E-08	2027	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	5.9E-08	2027	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	PM25	3.2E-09	2027	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	6.5E-07	2027	MIT	Grading and Shoring_Worker	Worker
PAREA3	PM25	5.6E-07	2027	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	4.6E-07	2027	MIT	Grading and Shoring_Hauling	Hauling
HAUL	PM25	4.3E-07	2027	MIT	Grading and Shoring_Vendor	Vendor
HAUL	PM25	2.5E-06	2027	MIT	Grading and Shoring_Worker	Worker
HAUL	PM25	3.4E-08	2027	MIT	Paving_Hauling	Hauling
PAREA3	PM25	1.6E-09	2027	MIT	Paving_Hauling	Hauling
HAUL	PM25	1.1E-08	2027	MIT	Paving_Vendor	Vendor
PAREA3	PM25	5.9E-10	2027	MIT	Paving_Vendor	Vendor
HAUL	PM25	3.5E-08	2027	MIT	Paving_Worker	Worker
PAREA3	PM25	3.0E-08	2027	MIT	Paving_Worker	Worker
HAUL	PM25	7.1E-08	2027	MIT	Paving_Hauling	Hauling
HAUL	PM25	7.9E-08	2027	MIT	Paving_Vendor	Vendor
HAUL	PM25	1.3E-07	2027	MIT	Paving_Worker	Worker
HAUL	PM25	2.2E-08	2026	MIT	Site Preparation_Worker	Worker

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3	PM25	1.9E-08	2026	MIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2026	MIT	Site Preparation_Worker	Worker
HAUL	PM25	3.0E-06	2029	MIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.6E-06	2029	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.3E-05	2029	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	3.1E-06	2030	MIT	Architectural Coating_Worker	Worker
PAREA4V	PM25	2.7E-06	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-05	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.4E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.3E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.5E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2028	MIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.8E-07	2028	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2028	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.6E-05	2028	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.5E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	6.9E-09	2029	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	MIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	6.0E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.8E-05	2029	MIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.6E-05	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.1E-07	2029	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-07	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.9E-05	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.3E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA4V	PM25	5.9E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	9.5E-08	2030	MIT	Building Construction_Vendor	Vendor
PAREA4V	PM25	5.1E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.6E-05	2030	MIT	Building Construction_Worker	Worker
PAREA4V	PM25	1.4E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.7E-07	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	6.9E-07	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	7.3E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.1E-07	2027	MIT	Demolition_Hauling	Hauling
PAREA4V	PM25	2.4E-08	2027	MIT	Demolition_Hauling	Hauling
HAUL	PM25	3.7E-08	2027	MIT	Demolition_Vendor	Vendor
PAREA4V	PM25	2.0E-09	2027	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.4E-07	2027	MIT	Demolition_Worker	Worker
PAREA4V	PM25	1.2E-07	2027	MIT	Demolition_Worker	Worker
HAUL	PM25	1.1E-06	2027	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.7E-07	2027	MIT	Demolition_Vendor	Vendor
HAUL	PM25	5.4E-07	2027	MIT	Demolition_Worker	Worker
HAUL	PM25	3.4E-07	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.6E-08	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	6.6E-08	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	3.6E-09	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	5.8E-07	2027	MIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	5.0E-07	2027	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	7.1E-07	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	4.8E-07	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	2.2E-06	2027	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	4.2E-07	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	PM25	1.9E-08	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	8.0E-08	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	PM25	4.3E-09	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	7.3E-07	2028	MIT	Grading, Shoring, Excavate_Worker	Worker
PAREA4V	PM25	6.3E-07	2028	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	8.6E-07	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	PM25	5.8E-07	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	PM25	3.0E-06	2028	MIT	Grading, Shoring, Excavate_Worker	Worker
HAUL	PM25	2.8E-08	2030	MIT	Paving_Hauling	Hauling
PAREA4V	PM25	1.3E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	8.5E-09	2030	MIT	Paving_Vendor	Vendor
PAREA4V	PM25	4.5E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	5.9E-08	2030	MIT	Paving_Worker	Worker
PAREA4V	PM25	5.2E-08	2030	MIT	Paving_Worker	Worker
HAUL	PM25	5.7E-08	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	6.1E-08	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	2.7E-07	2030	MIT	Paving_Worker	Worker
HAUL	PM25	4.3E-08	2027	MIT	Site Preparation_Worker	Worker
PAREA4V	PM25	3.7E-08	2027	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-07	2027	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.7E-06	2030	MIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.5E-06	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	8.0E-06	2030	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.0E-06	2031	MIT	Architectural Coating_Worker	Worker
PAREA5	PM25	1.7E-06	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	9.6E-06	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	1.9E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.6E-09	2029	MIT	Building Construction_Hauling	Hauling

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	7.8E-08	2029	MIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.2E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	9.4E-06	2029	MIT	Building Construction_Worker	Worker
PAREA5	PM25	8.3E-06	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	3.9E-07	2029	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.7E-07	2029	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.1E-05	2029	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.6E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA5	PM25	1.1E-08	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.0E-07	2030	MIT	Building Construction_Vendor	Vendor
PAREA5	PM25	5.5E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.3E-05	2030	MIT	Building Construction_Worker	Worker
PAREA5	PM25	1.1E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-07	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	7.5E-07	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.8E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.1E-07	2031	MIT	Building Construction_Hauling	Hauling
PAREA5	PM25	8.9E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	8.1E-08	2031	MIT	Building Construction_Vendor	Vendor
PAREA5	PM25	4.3E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.0E-05	2031	MIT	Building Construction_Worker	Worker
PAREA5	PM25	8.9E-06	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.1E-07	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	5.8E-07	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	4.9E-05	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	9.1E-08	2028	MIT	Demolition_Hauling	Hauling
PAREA5	PM25	4.2E-09	2028	MIT	Demolition_Hauling	Hauling
HAUL	PM25	4.0E-08	2028	MIT	Demolition_Vendor	Vendor
PAREA5	PM25	2.2E-09	2028	MIT	Demolition_Vendor	Vendor
HAUL	PM25	1.1E-07	2028	MIT	Demolition_Worker	Worker
PAREA5	PM25	9.3E-08	2028	MIT	Demolition_Worker	Worker
HAUL	PM25	1.9E-07	2028	MIT	Demolition_Hauling	Hauling
HAUL	PM25	2.9E-07	2028	MIT	Demolition_Vendor	Vendor
HAUL	PM25	4.4E-07	2028	MIT	Demolition_Worker	Worker
HAUL	PM25	5.8E-07	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.7E-08	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.6E-08	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	5.2E-09	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.2E-07	2028	MIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2028	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	7.0E-07	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.5E-06	2028	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	5.7E-07	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	PM25	2.5E-08	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	9.2E-08	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	PM25	4.9E-09	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	6.1E-07	2029	MIT	Grading, Shoring, Excavation_Worker	Worker
PAREA5	PM25	5.4E-07	2029	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	1.2E-06	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	PM25	6.7E-07	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	PM25	2.6E-06	2029	MIT	Grading, Shoring, Excavation_Worker	Worker
HAUL	PM25	2.8E-08	2030	MIT	Paving_Hauling	Hauling
PAREA5	PM25	1.2E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	8.7E-09	2030	MIT	Paving_Vendor	Vendor
PAREA5	PM25	4.6E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	6.0E-08	2030	MIT	Paving_Worker	Worker
PAREA5	PM25	5.3E-08	2030	MIT	Paving_Worker	Worker
HAUL	PM25	5.6E-08	2030	MIT	Paving_Hauling	Hauling
HAUL	PM25	6.2E-08	2030	MIT	Paving_Vendor	Vendor
HAUL	PM25	2.8E-07	2030	MIT	Paving_Worker	Worker
HAUL	PM25	4.0E-08	2028	MIT	Site Preparation_Worker	Worker
PAREA5	PM25	3.5E-08	2028	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.6E-07	2028	MIT	Site Preparation_Worker	Worker
HAUL	PM25	1.1E-06	2031	MIT	Architectural Coating_Worker	Worker
PAREA6	PM25	9.8E-07	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.4E-06	2031	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	5.6E-07	2032	MIT	Architectural Coating_Worker	Worker
PAREA6	PM25	5.0E-07	2032	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	2.9E-06	2032	MIT	Architectural Coating_Worker	Worker
HAUL	PM25	4.9E-08	2030	MIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.2E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.6E-08	2030	MIT	Building Construction_Vendor	Vendor
PAREA6	PM25	2.4E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	5.7E-06	2030	MIT	Building Construction_Worker	Worker
PAREA6	PM25	5.1E-06	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2030	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.3E-07	2030	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.7E-05	2030	MIT	Building Construction_Worker	Worker
HAUL	PM25	5.2E-08	2031	MIT	Building Construction_Hauling	Hauling
PAREA6	PM25	2.3E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	4.8E-08	2031	MIT	Building Construction_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	PM25	2.5E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	6.1E-06	2031	MIT	Building Construction_Worker	Worker
PAREA6	PM25	5.4E-06	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.0E-07	2031	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	3.4E-07	2031	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	3.0E-05	2031	MIT	Building Construction_Worker	Worker
HAUL	PM25	2.3E-08	2032	MIT	Building Construction_Hauling	Hauling
PAREA6	PM25	9.7E-10	2032	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	2.1E-08	2032	MIT	Building Construction_Vendor	Vendor
PAREA6	PM25	1.1E-09	2032	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	2.6E-06	2032	MIT	Building Construction_Worker	Worker
PAREA6	PM25	2.3E-06	2032	MIT	Building Construction_Worker	Worker
HAUL	PM25	4.5E-08	2032	MIT	Building Construction_Hauling	Hauling
HAUL	PM25	1.5E-07	2032	MIT	Building Construction_Vendor	Vendor
HAUL	PM25	1.4E-05	2032	MIT	Building Construction_Worker	Worker
HAUL	PM25	1.6E-07	2029	MIT	Demolition_Hauling	Hauling
PAREA6	PM25	7.3E-09	2029	MIT	Demolition_Hauling	Hauling
HAUL	PM25	1.5E-08	2029	MIT	Demolition_Vendor	Vendor
PAREA6	PM25	8.1E-10	2029	MIT	Demolition_Vendor	Vendor
HAUL	PM25	6.2E-08	2029	MIT	Demolition_Worker	Worker
PAREA6	PM25	5.4E-08	2029	MIT	Demolition_Worker	Worker
HAUL	PM25	3.3E-07	2029	MIT	Demolition_Hauling	Hauling
HAUL	PM25	1.1E-07	2029	MIT	Demolition_Vendor	Vendor
HAUL	PM25	2.7E-07	2029	MIT	Demolition_Worker	Worker
HAUL	PM25	2.1E-07	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	9.6E-09	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	1.7E-09	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	6.7E-07	2029	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	5.9E-07	2029	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	4.4E-07	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	2.2E-07	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	2.9E-06	2029	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	3.0E-08	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	PM25	1.3E-09	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	4.3E-09	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	PM25	2.3E-10	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	9.4E-08	2030	MIT	Grading, Shoring, Excavating_Worker	Worker
PAREA6	PM25	8.4E-08	2030	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	6.1E-08	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	PM25	3.1E-08	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	PM25	4.4E-07	2030	MIT	Grading, Shoring, Excavating_Worker	Worker
HAUL	PM25	8.0E-09	2031	MIT	Paving_Hauling	Hauling
PAREA6	PM25	3.5E-10	2031	MIT	Paving_Hauling	Hauling
HAUL	PM25	9.8E-09	2031	MIT	Paving_Vendor	Vendor
PAREA6	PM25	5.2E-10	2031	MIT	Paving_Vendor	Vendor
HAUL	PM25	6.9E-08	2031	MIT	Paving_Worker	Worker
PAREA6	PM25	6.1E-08	2031	MIT	Paving_Worker	Worker
HAUL	PM25	1.6E-08	2031	MIT	Paving_Hauling	Hauling
HAUL	PM25	7.0E-08	2031	MIT	Paving_Vendor	Vendor
HAUL	PM25	3.4E-07	2031	MIT	Paving_Worker	Worker
HAUL	PM25	1.8E-08	2029	MIT	Site Preparation_Worker	Worker
PAREA6	PM25	1.6E-08	2029	MIT	Site Preparation_Worker	Worker
HAUL	PM25	8.0E-08	2029	MIT	Site Preparation_Worker	Worker
HAUL	PM25	4.6E-06	2024	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	9.3E-07	2024	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	4.9E-05	2024	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.2E-06	2025	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.0E-05	2024	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2025	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2026	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2027	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.3E-06	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	5.0E-06	2026	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	3.8E-06	2025	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2026	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2027	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.3E-06	2028	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2025	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	1.5E-06	2025	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.6E-05	2025	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.5E-04	2026	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2027	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.0E-04	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.7E-06	2028	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	4.6E-05	2027	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.7E-05	2028	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.1E-06	2026	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2026	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	1.4E-05	2026	UNMIT	Grading and Shoring_Road Dust	Grading and Shoring
HAUL	PM25	2.2E-05	2027	UNMIT	Grading and Shoring_Road Dust	Grading and Shoring

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	PM25	1.0E-04	2026	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.5E-04	2027	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.9E-04	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.3E-06	2027	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	1.2E-05	2027	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	3.5E-05	2028	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2027	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.2E-07	2027	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.0E-05	2028	UNMIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.4E-04	2028	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2029	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.8E-04	2030	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	6.5E-05	2029	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.1E-05	2030	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	8.0E-06	2028	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.1E-07	2028	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.3E-05	2028	UNMIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	3.4E-05	2029	UNMIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	2.2E-04	2029	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-04	2030	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.6E-04	2031	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	4.0E-05	2030	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.8E-05	2031	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.0E-06	2029	UNMIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2029	UNMIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.2E-05	2029	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.3E-06	2030	UNMIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	1.4E-04	2030	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.5E-04	2031	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.0E-05	2032	UNMIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-06	2031	UNMIT	Paving_Road Dust	Paving
HAUL	PM25	2.7E-05	2031	UNMIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.5E-05	2032	UNMIT	Architectural Coating_Road Dust	Architectural Coating
PAREA1FD	PM25	6.7E-05	2024	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA2FD	PM25	9.0E-04	2025	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA3FD	PM25	5.7E-04	2026	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA4VF	PM25	8.1E-04	2027	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA5FD	PM25	4.2E-04	2028	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA6FD	PM25	8.2E-04	2029	UNMIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA1FD	PM25	2.4E-04	2024	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.5E-05	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	2.2E-04	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.6E-04	2026	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	7.5E-05	2026	UNMIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.1E-04	2027	UNMIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	8.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.1E-04	2028	UNMIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	9.4E-05	2028	UNMIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.9E-05	2029	UNMIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	5.8E-05	2029	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	8.7E-06	2030	UNMIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	3.0E-07	2024	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA1FD	PM25	1.4E-05	2024	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	9.2E-07	2025	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.0E-06	2025	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA2FD	PM25	6.0E-06	2025	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.4E-06	2026	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	2.5E-06	2026	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA3FD	PM25	2.8E-06	2026	UNMIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	4.1E-06	2027	UNMIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	3.6E-06	2027	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA4VF	PM25	5.5E-06	2027	UNMIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	7.3E-06	2028	UNMIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	1.9E-06	2028	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA5FD	PM25	9.4E-06	2028	UNMIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.8E-06	2029	UNMIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	3.6E-06	2029	UNMIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA6FD	PM25	9.1E-06	2029	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	1.4E-06	2030	UNMIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	7.3E-04	2024	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA1FD	PM25	5.1E-04	2024	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA1FD	PM25	2.1E-04	2024	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.4E-05	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	0.0010	2025	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA2FD	PM25	8.2E-04	2025	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA2FD	PM25	1.4E-04	2025	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.0E-04	2026	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	0.0011	2026	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA3FD	PM25	2.2E-04	2026	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3FD	PM25	9.6E-05	2026	UNMIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.4E-04	2027	UNMIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	0.0013	2027	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA4VF	PM25	4.6E-04	2027	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA4VF	PM25	1.2E-04	2027	UNMIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.6E-04	2028	UNMIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	0.0011	2028	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA5FD	PM25	4.5E-04	2028	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA5FD	PM25	1.4E-04	2028	UNMIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	1.4E-04	2029	UNMIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	6.5E-04	2029	UNMIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA6FD	PM25	2.2E-04	2029	UNMIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA6FD	PM25	1.7E-04	2029	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	2.5E-05	2030	UNMIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
HAUL	PM25	4.6E-06	2024	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	9.3E-07	2024	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	4.9E-05	2024	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.2E-06	2025	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.0E-05	2024	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2025	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2026	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.4E-04	2027	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.3E-06	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	5.0E-06	2026	MIT	Paving_Road Dust	Paving
HAUL	PM25	3.8E-06	2025	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2026	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.4E-05	2027	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.3E-06	2028	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2025	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	1.5E-06	2025	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.6E-05	2025	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.6E-05	2026	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	2.5E-04	2026	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2027	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.0E-04	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.7E-06	2028	MIT	Paving_Road Dust	Paving
HAUL	PM25	4.6E-05	2027	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.7E-05	2028	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.1E-06	2026	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2026	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	1.4E-05	2026	MIT	Grading and Shoring_Road Dust	Grading and Shoring
HAUL	PM25	2.2E-05	2027	MIT	Grading and Shoring_Road Dust	Grading and Shoring
HAUL	PM25	1.0E-04	2026	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.5E-04	2027	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.9E-04	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.3E-06	2027	MIT	Paving_Road Dust	Paving
HAUL	PM25	1.2E-05	2027	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	3.5E-05	2028	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.4E-05	2027	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.2E-07	2027	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.3E-05	2027	MIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.0E-05	2028	MIT	Grading, Shoring, Excavate_Road Dust	Grading, Shoring, Excavate
HAUL	PM25	3.4E-04	2028	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	4.1E-04	2029	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.8E-04	2030	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	MIT	Paving_Road Dust	Paving
HAUL	PM25	6.5E-05	2029	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	7.1E-05	2030	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	8.0E-06	2028	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	8.1E-07	2028	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	3.3E-05	2028	MIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	3.4E-05	2029	MIT	Grading, Shoring, Excavation_Road Dust	Grading, Shoring, Excavation
HAUL	PM25	2.2E-04	2029	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-04	2030	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	2.6E-04	2031	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.0E-06	2030	MIT	Paving_Road Dust	Paving
HAUL	PM25	4.0E-05	2030	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	4.8E-05	2031	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	6.0E-06	2029	MIT	Demolition_Road Dust	Demolition
HAUL	PM25	4.0E-07	2029	MIT	Site Preparation_Road Dust	Site Preparation
HAUL	PM25	2.2E-05	2029	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	3.3E-06	2030	MIT	Grading, Shoring, Excavating_Road Dust	Grading, Shoring, Excavating
HAUL	PM25	1.4E-04	2030	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	1.5E-04	2031	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	7.0E-05	2032	MIT	Building Construction_Road Dust	Building Construction
HAUL	PM25	3.1E-06	2031	MIT	Paving_Road Dust	Paving
HAUL	PM25	2.7E-05	2031	MIT	Architectural Coating_Road Dust	Architectural Coating
HAUL	PM25	1.5E-05	2032	MIT	Architectural Coating_Road Dust	Architectural Coating
PAREA1FD	PM25	6.7E-05	2024	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA2FD	PM25	9.0E-04	2025	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA3FD	PM25	5.7E-04	2026	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA4VF	PM25	8.1E-04	2027	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA5FD	PM25	4.2E-04	2028	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA6FD	PM25	8.2E-04	2029	MIT	Demolition_Building Demolition Waste Fugitive Dust	Demolition
PAREA1FD	PM25	2.4E-04	2024	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.5E-05	2025	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	2.2E-04	2025	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.6E-04	2026	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	7.5E-05	2026	MIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.1E-04	2027	MIT	Grading and Shoring_Off-Road Grading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	8.3E-05	2027	MIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.1E-04	2028	MIT	Grading, Shoring, Excavate_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	9.4E-05	2028	MIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.9E-05	2029	MIT	Grading, Shoring, Excavation_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	5.8E-05	2029	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	8.7E-06	2030	MIT	Grading, Shoring, Excavating_Off-Road Grading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	3.0E-07	2024	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA1FD	PM25	1.4E-05	2024	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	9.2E-07	2025	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.0E-06	2025	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA2FD	PM25	6.0E-06	2025	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	4.4E-06	2026	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	2.5E-06	2026	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA3FD	PM25	2.8E-06	2026	MIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	4.1E-06	2027	MIT	Grading and Shoring_Truck Loading Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	3.6E-06	2027	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA4VF	PM25	5.5E-06	2027	MIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	7.3E-06	2028	MIT	Grading, Shoring, Excavate_Truck Loading Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	1.9E-06	2028	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA5FD	PM25	9.4E-06	2028	MIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	9.8E-06	2029	MIT	Grading, Shoring, Excavation_Truck Loading Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	3.6E-06	2029	MIT	Demolition_Truck Loading Fugitive Dust	Demolition
PAREA6FD	PM25	9.1E-06	2029	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	1.4E-06	2030	MIT	Grading, Shoring, Excavating_Truck Loading Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	7.3E-04	2024	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA1FD	PM25	5.1E-04	2024	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA1FD	PM25	2.1E-04	2024	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA1FD	PM25	1.4E-05	2025	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	0.0010	2025	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA2FD	PM25	8.2E-04	2025	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA2FD	PM25	1.4E-04	2025	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA2FD	PM25	1.0E-04	2026	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA3FD	PM25	0.0011	2026	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA3FD	PM25	2.2E-04	2026	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA3FD	PM25	9.6E-05	2026	MIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA3FD	PM25	1.4E-04	2027	MIT	Grading and Shoring_Off-Road Bulldozing Fugitive Dust	Grading and Shoring
PAREA4VF	PM25	0.0013	2027	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA4VF	PM25	4.6E-04	2027	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA4VF	PM25	1.2E-04	2027	MIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA4VF	PM25	1.6E-04	2028	MIT	Grading, Shoring, Excavate_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavate
PAREA5FD	PM25	0.0011	2028	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA5FD	PM25	4.5E-04	2028	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA5FD	PM25	1.4E-04	2028	MIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA5FD	PM25	1.4E-04	2029	MIT	Grading, Shoring, Excavation_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavation
PAREA6FD	PM25	6.5E-04	2029	MIT	Demolition_Off-Road Bulldozing Fugitive Dust	Demolition
PAREA6FD	PM25	2.2E-04	2029	MIT	Site Preparation_Off-Road Bulldozing Fugitive Dust	Site Preparation
PAREA6FD	PM25	1.7E-04	2029	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA6FD	PM25	2.5E-05	2030	MIT	Grading, Shoring, Excavating_Off-Road Bulldozing Fugitive Dust	Grading, Shoring, Excavating
PAREA1	DPM	2.0E-05	2025	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	2.0E-04	2026	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	1.6E-04	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	4.0E-06	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	1.1E-05	2024	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.3E-05	2024	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	1.9E-06	2024	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.5E-06	2024	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.2E-05	2024	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.3E-06	2024	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	1.2E-04	2025	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.4E-04	2025	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	2.3E-05	2025	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-05	2025	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.2E-04	2025	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.4E-05	2025	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	9.5E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.2E-04	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	2.1E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.1E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	9.5E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-05	2026	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	7.9E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	9.8E-05	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	2.0E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	2.6E-05	2027	UNMIT	Building Construction_Pumps	Pumps

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA1	DPM	8.2E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	9.8E-06	2027	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	2.0E-06	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	2.4E-06	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	5.6E-07	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	6.4E-07	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA1	DPM	2.2E-06	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	2.4E-07	2028	UNMIT	Building Construction_Welders	Welders
PAREA1	DPM	2.6E-05	2024	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	DPM	7.5E-05	2024	UNMIT	Demolition_Excavators	Excavators
PAREA1	DPM	3.8E-04	2024	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	1.7E-05	2024	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	1.7E-04	2024	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	6.5E-05	2024	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	1.5E-05	2024	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	1.1E-04	2024	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	6.8E-05	2024	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	9.1E-05	2024	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	9.6E-06	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	3.5E-06	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	9.0E-07	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	5.5E-06	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	3.6E-06	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	4.6E-06	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	4.8E-05	2026	UNMIT	Paving_Pavers	Pavers
PAREA1	DPM	8.5E-05	2026	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA1	DPM	4.2E-05	2026	UNMIT	Paving_Rollers	Rollers
PAREA1	DPM	2.7E-04	2024	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	9.0E-05	2024	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	9.8E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	1.3E-04	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	2.3E-04	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA2	DPM	6.0E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	7.4E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	1.2E-05	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.0E-05	2026	UNMIT	Building Construction_Pumps	Pumps
PAREA2	DPM	6.0E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	7.4E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA2	DPM	3.4E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA2	DPM	8.0E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	1.0E-04	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	1.8E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.7E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA2	DPM	8.3E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.0E-05	2027	UNMIT	Building Construction_Welders	Welders
PAREA2	DPM	3.1E-04	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA2	DPM	6.7E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	7.9E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	1.6E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.1E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA2	DPM	7.2E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	7.9E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA2	DPM	3.2E-05	2025	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	DPM	9.2E-05	2025	UNMIT	Demolition_Excavators	Excavators
PAREA2	DPM	4.2E-04	2025	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.1E-05	2025	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	9.8E-05	2025	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	3.6E-05	2025	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	8.1E-06	2025	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	5.7E-05	2025	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	3.2E-05	2025	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	1.0E-04	2025	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	8.1E-06	2026	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	6.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	2.3E-05	2026	UNMIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	5.5E-06	2026	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	4.6E-05	2026	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	2.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	6.1E-05	2026	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.4E-05	2028	UNMIT	Paving_Pavers	Pavers
PAREA2	DPM	2.9E-05	2028	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA2	DPM	1.2E-05	2028	UNMIT	Paving_Rollers	Rollers
PAREA2	DPM	3.3E-04	2025	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.1E-04	2025	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	4.2E-05	2027	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	1.0E-04	2028	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	6.4E-05	2026	UNMIT	Building Construction_Cranes	Cranes
PAREA3	DPM	4.2E-05	2026	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	5.1E-05	2026	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	6.2E-06	2026	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.4E-05	2026	UNMIT	Building Construction_Pumps	Pumps

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA3	DPM	4.2E-05	2026	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	5.2E-06	2026	UNMIT	Building Construction_Welders	Welders
PAREA3	DPM	1.4E-04	2027	UNMIT	Building Construction_Cranes	Cranes
PAREA3	DPM	8.2E-05	2027	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	1.0E-04	2027	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	1.4E-05	2027	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	2.7E-05	2027	UNMIT	Building Construction_Pumps	Pumps
PAREA3	DPM	8.5E-05	2027	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.0E-05	2027	UNMIT	Building Construction_Welders	Welders
PAREA3	DPM	9.7E-05	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA3	DPM	5.3E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	6.2E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	9.7E-06	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.7E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA3	DPM	5.6E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	6.2E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA3	DPM	2.7E-05	2026	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	DPM	8.0E-05	2026	UNMIT	Demolition_Excavators	Excavators
PAREA3	DPM	4.9E-04	2026	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	7.7E-06	2026	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	5.7E-05	2026	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	2.1E-05	2026	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	5.2E-06	2026	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	4.4E-05	2026	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	2.7E-05	2026	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.1E-05	2027	UNMIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	7.9E-05	2027	UNMIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	2.8E-05	2027	UNMIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	7.4E-06	2027	UNMIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	6.0E-05	2027	UNMIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	3.5E-05	2027	UNMIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.5E-05	2027	UNMIT	Paving_Pavers	Pavers
PAREA3	DPM	2.6E-05	2027	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA3	DPM	1.3E-05	2027	UNMIT	Paving_Rollers	Rollers
PAREA3	DPM	1.0E-04	2026	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	2.5E-05	2026	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	9.4E-05	2029	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	8.8E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	1.1E-04	2028	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	5.8E-05	2028	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	6.9E-05	2028	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	1.1E-05	2028	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	1.8E-05	2028	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	6.3E-05	2028	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	6.9E-06	2028	UNMIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.3E-04	2029	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	6.2E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	6.9E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	1.1E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	1.8E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	6.8E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	6.9E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.1E-04	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	5.2E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	5.4E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	9.3E-06	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	1.4E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	5.8E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	5.4E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA4V	DPM	2.9E-05	2027	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	DPM	9.1E-05	2027	UNMIT	Demolition_Excavators	Excavators
PAREA4V	DPM	5.5E-04	2027	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	9.3E-06	2027	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	6.6E-05	2027	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	2.3E-05	2027	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	6.3E-06	2027	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	5.0E-05	2027	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	5.7E-05	2027	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.2E-05	2028	UNMIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	7.9E-05	2028	UNMIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	2.9E-05	2028	UNMIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	7.7E-06	2028	UNMIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	6.5E-05	2028	UNMIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	6.7E-05	2028	UNMIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	2.4E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA4V	DPM	5.2E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	DPM	2.1E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA4V	DPM	1.9E-04	2027	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	4.5E-05	2027	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	6.7E-05	2030	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	6.9E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	2.2E-04	2029	UNMIT	Building Construction_Cranes	Cranes

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA5	DPM	4.3E-05	2029	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	4.8E-05	2029	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.5E-05	2029	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	1.3E-05	2029	UNMIT	Building Construction_Pumps	Pumps
PAREA5	DPM	4.7E-05	2029	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	4.8E-06	2029	UNMIT	Building Construction_Welders	Welders
PAREA5	DPM	2.9E-04	2030	UNMIT	Building Construction_Cranes	Cranes
PAREA5	DPM	5.7E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	5.9E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	2.0E-05	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	1.6E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA5	DPM	6.3E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	5.9E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA5	DPM	2.4E-04	2031	UNMIT	Building Construction_Cranes	Cranes
PAREA5	DPM	4.2E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	4.2E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.6E-05	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	1.1E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA5	DPM	4.8E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	4.2E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA5	DPM	1.9E-05	2028	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	DPM	6.6E-05	2028	UNMIT	Demolition_Excavators	Excavators
PAREA5	DPM	4.3E-04	2028	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.0E-05	2028	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	6.7E-05	2028	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	2.5E-05	2028	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	6.6E-06	2028	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	5.5E-05	2028	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	5.8E-05	2028	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.0E-05	2029	UNMIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	6.7E-05	2029	UNMIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	2.4E-05	2029	UNMIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	5.9E-06	2029	UNMIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	5.8E-05	2029	UNMIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	5.5E-05	2029	UNMIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	2.5E-05	2030	UNMIT	Paving_Pavers	Pavers
PAREA5	DPM	5.3E-05	2030	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA5	DPM	2.1E-05	2030	UNMIT	Paving_Rollers	Rollers
PAREA5	DPM	1.8E-04	2028	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	3.9E-05	2028	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	7.5E-05	2031	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	3.5E-05	2032	UNMIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	5.0E-05	2030	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	5.2E-05	2030	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	9.0E-06	2030	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	1.4E-05	2030	UNMIT	Building Construction_Pumps	Pumps
PAREA6	DPM	5.6E-05	2030	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	5.2E-06	2030	UNMIT	Building Construction_Welders	Welders
PAREA6	DPM	5.0E-05	2031	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	5.0E-05	2031	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	9.3E-06	2031	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	1.3E-05	2031	UNMIT	Building Construction_Pumps	Pumps
PAREA6	DPM	5.6E-05	2031	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	4.9E-06	2031	UNMIT	Building Construction_Welders	Welders
PAREA6	DPM	2.1E-05	2032	UNMIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	2.0E-05	2032	UNMIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	4.0E-06	2032	UNMIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	5.2E-06	2032	UNMIT	Building Construction_Pumps	Pumps
PAREA6	DPM	2.4E-05	2032	UNMIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.9E-06	2032	UNMIT	Building Construction_Welders	Welders
PAREA6	DPM	9.7E-06	2029	UNMIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	DPM	3.8E-05	2029	UNMIT	Demolition_Excavators	Excavators
PAREA6	DPM	2.7E-04	2029	UNMIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.2E-05	2029	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	7.9E-05	2029	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	4.0E-06	2029	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	6.8E-05	2029	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	3.2E-05	2029	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.7E-06	2030	UNMIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	1.1E-05	2030	UNMIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	5.6E-07	2030	UNMIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	7.5E-06	2030	UNMIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	4.4E-06	2030	UNMIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	2.7E-05	2031	UNMIT	Paving_Pavers	Pavers
PAREA6	DPM	5.7E-05	2031	UNMIT	Paving_Paving Equipment	Paving Equipment
PAREA6	DPM	2.4E-05	2031	UNMIT	Paving_Rollers	Rollers
PAREA6	DPM	9.0E-05	2029	UNMIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.7E-05	2029	UNMIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	DPM	2.2E-08	2024	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-09	2024	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.5E-08	2024	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-09	2024	UNMIT	Building Construction_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	2.3E-07	2025	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-08	2025	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.6E-07	2025	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-08	2025	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.1E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.0E-08	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.3E-07	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.2E-08	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.9E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	8.9E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.0E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.1E-08	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-09	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA1	DPM	2.4E-10	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA1	DPM	3.0E-10	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.1E-07	2024	UNMIT	Demolition_Hauling	Hauling
PAREA1	DPM	5.4E-09	2024	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	3.2E-08	2024	UNMIT	Demolition_Vendor	Vendor
PAREA1	DPM	1.7E-09	2024	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	1.5E-06	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	7.5E-08	2024	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	2.2E-07	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	1.2E-08	2024	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.5E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	4.1E-09	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.2E-08	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	6.5E-10	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	5.0E-08	2026	UNMIT	Paving_Hauling	Hauling
PAREA1	DPM	2.4E-09	2026	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	2.8E-08	2026	UNMIT	Paving_Vendor	Vendor
PAREA1	DPM	1.5E-09	2026	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	2.5E-07	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.2E-08	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	9.4E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.7E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.7E-08	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.4E-07	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA2	DPM	7.5E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.4E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.5E-08	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA2	DPM	6.6E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2025	UNMIT	Demolition_Hauling	Hauling
PAREA2	DPM	1.3E-08	2025	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	1.1E-07	2025	UNMIT	Demolition_Vendor	Vendor
PAREA2	DPM	6.3E-09	2025	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	9.8E-07	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	4.8E-08	2025	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.5E-07	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	8.0E-09	2025	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	6.4E-07	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	3.1E-08	2026	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	9.3E-08	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	2.3E-08	2028	UNMIT	Paving_Hauling	Hauling
PAREA2	DPM	1.1E-09	2028	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	UNMIT	Paving_Vendor	Vendor
PAREA2	DPM	3.0E-10	2028	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	6.7E-08	2026	UNMIT	Building Construction_Hauling	Hauling
PAREA3	DPM	3.2E-09	2026	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	3.3E-08	2026	UNMIT	Building Construction_Vendor	Vendor
PAREA3	DPM	1.8E-09	2026	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.5E-07	2027	UNMIT	Building Construction_Hauling	Hauling
PAREA3	DPM	6.8E-09	2027	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	7.0E-08	2027	UNMIT	Building Construction_Vendor	Vendor
PAREA3	DPM	3.8E-09	2027	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.0E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA3	DPM	4.6E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA3	DPM	2.6E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	7.7E-08	2026	UNMIT	Demolition_Hauling	Hauling
PAREA3	DPM	3.6E-09	2026	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	3.4E-08	2026	UNMIT	Demolition_Vendor	Vendor
PAREA3	DPM	1.9E-09	2026	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	1.7E-07	2026	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	8.1E-09	2026	UNMIT	Grading and Shoring_Hauling	Hauling
HAUL	DPM	4.6E-08	2026	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	2.5E-09	2026	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	2.3E-07	2027	UNMIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	1.1E-08	2027	UNMIT	Grading and Shoring_Hauling	Hauling

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	6.2E-08	2027	UNMIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	3.4E-09	2027	UNMIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	3.6E-08	2027	UNMIT	Paving_Hauling	Hauling
PAREA3	DPM	1.7E-09	2027	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	1.1E-08	2027	UNMIT	Paving_Vendor	Vendor
PAREA3	DPM	6.1E-10	2027	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	1.4E-07	2028	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.6E-09	2028	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2028	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.8E-09	2028	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.6E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	7.2E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	6.3E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.4E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.1E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.0E-07	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.3E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-07	2027	UNMIT	Demolition_Hauling	Hauling
PAREA4V	DPM	2.5E-08	2027	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	3.8E-08	2027	UNMIT	Demolition_Vendor	Vendor
PAREA4V	DPM	2.1E-09	2027	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	3.6E-07	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	1.7E-08	2027	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	6.9E-08	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	3.7E-09	2027	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	4.4E-07	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	2.0E-08	2028	UNMIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	8.4E-08	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	4.5E-09	2028	UNMIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	3.0E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA4V	DPM	1.3E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	8.9E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA4V	DPM	4.7E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	2.0E-07	2029	UNMIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.0E-09	2029	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.2E-08	2029	UNMIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.4E-09	2029	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA5	DPM	1.2E-08	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA5	DPM	5.8E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.2E-07	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.4E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.5E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.5E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	9.5E-08	2028	UNMIT	Demolition_Hauling	Hauling
PAREA5	DPM	4.3E-09	2028	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	4.2E-08	2028	UNMIT	Demolition_Vendor	Vendor
PAREA5	DPM	2.3E-09	2028	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	6.1E-07	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.8E-08	2028	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	1.0E-07	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.4E-09	2028	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	5.9E-07	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.7E-08	2029	UNMIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	9.6E-08	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.2E-09	2029	UNMIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	2.9E-08	2030	UNMIT	Paving_Hauling	Hauling
PAREA5	DPM	1.3E-09	2030	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	9.1E-09	2030	UNMIT	Paving_Vendor	Vendor
PAREA5	DPM	4.8E-10	2030	UNMIT	Paving_Vendor	Vendor
HAUL	DPM	5.1E-08	2030	UNMIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.3E-09	2030	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2030	UNMIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2030	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.4E-08	2031	UNMIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.4E-09	2031	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.0E-08	2031	UNMIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2031	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.4E-08	2032	UNMIT	Building Construction_Hauling	Hauling
PAREA6	DPM	1.0E-09	2032	UNMIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.1E-08	2032	UNMIT	Building Construction_Vendor	Vendor
PAREA6	DPM	1.1E-09	2032	UNMIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.7E-07	2029	UNMIT	Demolition_Hauling	Hauling
PAREA6	DPM	7.6E-09	2029	UNMIT	Demolition_Hauling	Hauling
HAUL	DPM	1.6E-08	2029	UNMIT	Demolition_Vendor	Vendor
PAREA6	DPM	8.4E-10	2029	UNMIT	Demolition_Vendor	Vendor
HAUL	DPM	2.2E-07	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.0E-08	2029	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	3.2E-08	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	1.7E-09	2029	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	3.1E-08	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.4E-09	2030	UNMIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	4.5E-09	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	2.4E-10	2030	UNMIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.3E-09	2031	UNMIT	Paving_Hauling	Hauling
PAREA6	DPM	3.6E-10	2031	UNMIT	Paving_Hauling	Hauling
HAUL	DPM	1.0E-08	2031	UNMIT	Paving_Vendor	Vendor
PAREA6	DPM	5.4E-10	2031	UNMIT	Paving_Vendor	Vendor
PAREA1	DPM	1.7E-06	2025	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	2.0E-05	2026	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	2.0E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	6.1E-07	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA1	DPM	7.0E-07	2024	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.2E-06	2024	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	3.5E-07	2024	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.1E-07	2024	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.2E-06	2024	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.0E-07	2024	MIT	Building Construction_Welders	Welders
PAREA1	DPM	8.5E-06	2025	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.5E-05	2025	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	4.3E-06	2025	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-06	2025	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.5E-05	2025	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-06	2025	MIT	Building Construction_Welders	Welders
PAREA1	DPM	8.5E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.5E-05	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	4.3E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.5E-05	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-06	2026	MIT	Building Construction_Welders	Welders
PAREA1	DPM	8.5E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	4.3E-06	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	3.7E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.2E-06	2027	MIT	Building Construction_Welders	Welders
PAREA1	DPM	2.6E-07	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA1	DPM	4.5E-07	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA1	DPM	1.3E-07	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	1.1E-07	2028	MIT	Building Construction_Pumps	Pumps
PAREA1	DPM	4.5E-07	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	3.7E-08	2028	MIT	Building Construction_Welders	Welders
PAREA1	DPM	2.2E-06	2024	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA1	DPM	1.1E-05	2024	MIT	Demolition_Excavators	Excavators
PAREA1	DPM	1.5E-05	2024	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	1.7E-05	2024	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	2.6E-05	2024	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	6.7E-06	2024	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	2.7E-06	2024	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	4.3E-06	2024	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	7.6E-06	2024	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	9.3E-06	2024	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	1.1E-06	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA1	DPM	1.7E-06	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA1	DPM	4.3E-07	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA1	DPM	1.7E-07	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA1	DPM	2.8E-07	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	4.9E-07	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA1	DPM	6.0E-07	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA1	DPM	6.5E-06	2026	MIT	Paving_Pavers	Pavers
PAREA1	DPM	1.1E-05	2026	MIT	Paving_Paving Equipment	Paving Equipment
PAREA1	DPM	3.6E-06	2026	MIT	Paving_Rollers	Rollers
PAREA1	DPM	1.0E-05	2024	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA1	DPM	9.2E-06	2024	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.2E-05	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	2.0E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA2	DPM	2.0E-04	2026	MIT	Building Construction_Cranes	Cranes
PAREA2	DPM	5.3E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	9.3E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	2.4E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.3E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA2	DPM	9.4E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	7.8E-07	2026	MIT	Building Construction_Welders	Welders
PAREA2	DPM	3.2E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA2	DPM	8.7E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA2	DPM	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	3.9E-06	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	3.8E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA2	DPM	1.5E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA2	DPM	3.1E-04	2028	MIT	Building Construction_Cranes	Cranes
PAREA2	DPM	8.5E-06	2028	MIT	Building Construction_Forklifts	Forklifts

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA2	DPM	1.5E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA2	DPM	3.8E-06	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	3.7E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA2	DPM	1.5E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	1.2E-06	2028	MIT	Building Construction_Welders	Welders
PAREA2	DPM	3.2E-06	2025	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA2	DPM	1.6E-05	2025	MIT	Demolition_Excavators	Excavators
PAREA2	DPM	2.1E-05	2025	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.1E-05	2025	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	1.7E-05	2025	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	4.4E-06	2025	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	1.5E-06	2025	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.8E-06	2025	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	4.3E-06	2025	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	1.3E-05	2025	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	8.1E-06	2026	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA2	DPM	1.2E-05	2026	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA2	DPM	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Graders	Graders
PAREA2	DPM	1.1E-06	2026	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA2	DPM	2.0E-06	2026	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	3.2E-06	2026	MIT	Grading, Shoring, Excavating_Scrapers	Scrapers
PAREA2	DPM	9.5E-06	2026	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA2	DPM	2.4E-06	2028	MIT	Paving_Pavers	Pavers
PAREA2	DPM	4.1E-06	2028	MIT	Paving_Paving Equipment	Paving Equipment
PAREA2	DPM	1.3E-06	2028	MIT	Paving_Rollers	Rollers
PAREA2	DPM	1.7E-05	2025	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA2	DPM	1.5E-05	2025	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	5.2E-06	2027	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	1.5E-05	2028	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA3	DPM	5.5E-05	2026	MIT	Building Construction_Cranes	Cranes
PAREA3	DPM	3.7E-06	2026	MIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	6.5E-06	2026	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	1.2E-06	2026	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.6E-06	2026	MIT	Building Construction_Pumps	Pumps
PAREA3	DPM	6.5E-06	2026	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	5.4E-07	2026	MIT	Building Construction_Welders	Welders
PAREA3	DPM	1.3E-04	2027	MIT	Building Construction_Cranes	Cranes
PAREA3	DPM	8.9E-06	2027	MIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	1.5E-05	2027	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	2.9E-06	2027	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	3.9E-06	2027	MIT	Building Construction_Pumps	Pumps
PAREA3	DPM	1.6E-05	2027	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.3E-06	2027	MIT	Building Construction_Welders	Welders
PAREA3	DPM	9.7E-05	2028	MIT	Building Construction_Cranes	Cranes
PAREA3	DPM	6.7E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA3	DPM	1.2E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA3	DPM	2.2E-06	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	2.9E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA3	DPM	1.2E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	9.7E-07	2028	MIT	Building Construction_Welders	Welders
PAREA3	DPM	3.2E-06	2026	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA3	DPM	1.6E-05	2026	MIT	Demolition_Excavators	Excavators
PAREA3	DPM	2.2E-05	2026	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	7.7E-06	2026	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	1.2E-05	2026	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	3.0E-06	2026	MIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	1.0E-06	2026	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	1.9E-06	2026	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	4.2E-06	2026	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	1.1E-05	2027	MIT	Grading and Shoring_Bore/Drill Rigs	Bore/Drill Rigs
PAREA3	DPM	1.8E-05	2027	MIT	Grading and Shoring_Excavators	Excavators
PAREA3	DPM	4.5E-06	2027	MIT	Grading and Shoring_Graders	Graders
PAREA3	DPM	1.6E-06	2027	MIT	Grading and Shoring_Off-Highway Trucks	Off-Highway Trucks
PAREA3	DPM	2.9E-06	2027	MIT	Grading and Shoring_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	6.4E-06	2027	MIT	Grading and Shoring_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA3	DPM	2.2E-06	2027	MIT	Paving_Pavers	Pavers
PAREA3	DPM	3.8E-06	2027	MIT	Paving_Paving Equipment	Paving Equipment
PAREA3	DPM	1.2E-06	2027	MIT	Paving_Rollers	Rollers
PAREA3	DPM	4.5E-06	2026	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA3	DPM	4.0E-06	2026	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.7E-05	2029	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	1.9E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA4V	DPM	1.1E-04	2028	MIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	7.4E-06	2028	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	1.3E-05	2028	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	1.3E-06	2028	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.2E-06	2028	MIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	1.3E-05	2028	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.1E-06	2028	MIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.3E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	8.9E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	1.5E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	DPM	1.7E-06	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.9E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	1.6E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.3E-06	2029	MIT	Building Construction_Welders	Welders
PAREA4V	DPM	1.1E-04	2030	MIT	Building Construction_Cranes	Cranes
PAREA4V	DPM	8.1E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA4V	DPM	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA4V	DPM	2.3E-06	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.5E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA4V	DPM	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.2E-06	2030	MIT	Building Construction_Welders	Welders
PAREA4V	DPM	4.0E-06	2027	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA4V	DPM	2.0E-05	2027	MIT	Demolition_Excavators	Excavators
PAREA4V	DPM	2.7E-05	2027	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	9.3E-06	2027	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	1.5E-05	2027	MIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	3.8E-06	2027	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	2.6E-06	2027	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	2.4E-06	2027	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	1.1E-05	2027	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	1.2E-05	2028	MIT	Grading, Shoring, Excavate_Bore/Drill Rigs	Bore/Drill Rigs
PAREA4V	DPM	2.0E-05	2028	MIT	Grading, Shoring, Excavate_Excavators	Excavators
PAREA4V	DPM	5.0E-06	2028	MIT	Grading, Shoring, Excavate_Graders	Graders
PAREA4V	DPM	2.4E-06	2028	MIT	Grading, Shoring, Excavate_Off-Highway Trucks	Off-Highway Trucks
PAREA4V	DPM	3.2E-06	2028	MIT	Grading, Shoring, Excavate_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	1.4E-05	2028	MIT	Grading, Shoring, Excavate_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA4V	DPM	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA4V	DPM	7.8E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA4V	DPM	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA4V	DPM	9.3E-06	2027	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA4V	DPM	8.2E-06	2027	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.4E-05	2030	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	1.7E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA5	DPM	2.2E-04	2029	MIT	Building Construction_Cranes	Cranes
PAREA5	DPM	6.2E-06	2029	MIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	1.1E-05	2029	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.4E-06	2029	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	2.7E-06	2029	MIT	Building Construction_Pumps	Pumps
PAREA5	DPM	1.1E-05	2029	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	9.0E-07	2029	MIT	Building Construction_Welders	Welders
PAREA5	DPM	2.9E-04	2030	MIT	Building Construction_Cranes	Cranes
PAREA5	DPM	8.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	1.5E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	1.4E-06	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	3.9E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA5	DPM	1.6E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.3E-06	2030	MIT	Building Construction_Welders	Welders
PAREA5	DPM	2.4E-04	2031	MIT	Building Construction_Cranes	Cranes
PAREA5	DPM	7.4E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA5	DPM	1.3E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA5	DPM	3.6E-06	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	3.2E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA5	DPM	1.3E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.1E-06	2031	MIT	Building Construction_Welders	Welders
PAREA5	DPM	3.2E-06	2028	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA5	DPM	1.6E-05	2028	MIT	Demolition_Excavators	Excavators
PAREA5	DPM	2.2E-05	2028	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.0E-05	2028	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	1.7E-05	2028	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	4.3E-06	2028	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	5.2E-06	2028	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	2.8E-06	2028	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.2E-05	2028	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	1.0E-05	2029	MIT	Grading, Shoring, Excavation_Bore/Drill Rigs	Bore/Drill Rigs
PAREA5	DPM	1.8E-05	2029	MIT	Grading, Shoring, Excavation_Excavators	Excavators
PAREA5	DPM	4.5E-06	2029	MIT	Grading, Shoring, Excavation_Graders	Graders
PAREA5	DPM	4.3E-06	2029	MIT	Grading, Shoring, Excavation_Off-Highway Trucks	Off-Highway Trucks
PAREA5	DPM	2.9E-06	2029	MIT	Grading, Shoring, Excavation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	1.3E-05	2029	MIT	Grading, Shoring, Excavation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA5	DPM	4.5E-06	2030	MIT	Paving_Pavers	Pavers
PAREA5	DPM	7.9E-06	2030	MIT	Paving_Paving Equipment	Paving Equipment
PAREA5	DPM	2.5E-06	2030	MIT	Paving_Rollers	Rollers
PAREA5	DPM	9.1E-06	2028	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA5	DPM	8.1E-06	2028	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.9E-05	2031	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	1.0E-05	2032	MIT	Architectural Coating_Air Compressors	Air Compressors
PAREA6	DPM	7.9E-06	2030	MIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	1.4E-05	2030	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	9.6E-07	2030	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	3.4E-06	2030	MIT	Building Construction_Pumps	Pumps
PAREA6	DPM	1.4E-05	2030	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.1E-06	2030	MIT	Building Construction_Welders	Welders

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA6	DPM	8.7E-06	2031	MIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	1.5E-05	2031	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	1.4E-07	2031	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	3.8E-06	2031	MIT	Building Construction_Pumps	Pumps
PAREA6	DPM	1.5E-05	2031	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.3E-06	2031	MIT	Building Construction_Welders	Welders
PAREA6	DPM	4.0E-06	2032	MIT	Building Construction_Forklifts	Forklifts
PAREA6	DPM	6.9E-06	2032	MIT	Building Construction_Generator Sets	Generator Sets
PAREA6	DPM	2.3E-06	2032	MIT	Building Construction_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	1.7E-06	2032	MIT	Building Construction_Pumps	Pumps
PAREA6	DPM	7.0E-06	2032	MIT	Building Construction_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	5.8E-07	2032	MIT	Building Construction_Welders	Welders
PAREA6	DPM	2.0E-06	2029	MIT	Demolition_Concrete/Industrial Saws	Concrete/Industrial Saws
PAREA6	DPM	1.0E-05	2029	MIT	Demolition_Excavators	Excavators
PAREA6	DPM	1.3E-05	2029	MIT	Demolition_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.2E-05	2029	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	2.1E-05	2029	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	2.5E-06	2029	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	3.4E-06	2029	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	7.4E-06	2029	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	1.7E-06	2030	MIT	Grading, Shoring, Excavating_Bore/Drill Rigs	Bore/Drill Rigs
PAREA6	DPM	3.1E-06	2030	MIT	Grading, Shoring, Excavating_Excavators	Excavators
PAREA6	DPM	1.2E-06	2030	MIT	Grading, Shoring, Excavating_Off-Highway Trucks	Off-Highway Trucks
PAREA6	DPM	5.1E-07	2030	MIT	Grading, Shoring, Excavating_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	1.1E-06	2030	MIT	Grading, Shoring, Excavating_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
PAREA6	DPM	5.5E-06	2031	MIT	Paving_Pavers	Pavers
PAREA6	DPM	9.5E-06	2031	MIT	Paving_Paving Equipment	Paving Equipment
PAREA6	DPM	3.1E-06	2031	MIT	Paving_Rollers	Rollers
PAREA6	DPM	4.5E-06	2029	MIT	Site Preparation_Rubber Tired Dozers	Rubber Tired Dozers
PAREA6	DPM	4.0E-06	2029	MIT	Site Preparation_Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes
HAUL	DPM	2.2E-08	2024	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-09	2024	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.5E-08	2024	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-09	2024	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.3E-07	2025	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.1E-08	2025	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.6E-07	2025	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.4E-08	2025	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.1E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	1.0E-08	2026	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.3E-07	2026	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.2E-08	2026	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.9E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	8.9E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.0E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	1.1E-08	2027	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-09	2028	MIT	Building Construction_Hauling	Hauling
PAREA1	DPM	2.4E-10	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	MIT	Building Construction_Vendor	Vendor
PAREA1	DPM	3.0E-10	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.1E-07	2024	MIT	Demolition_Hauling	Hauling
PAREA1	DPM	5.4E-09	2024	MIT	Demolition_Hauling	Hauling
HAUL	DPM	3.2E-08	2024	MIT	Demolition_Vendor	Vendor
PAREA1	DPM	1.7E-09	2024	MIT	Demolition_Vendor	Vendor
HAUL	DPM	1.5E-06	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	7.5E-08	2024	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	2.2E-07	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	1.2E-08	2024	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.5E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA1	DPM	4.1E-09	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.2E-08	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA1	DPM	6.5E-10	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	5.0E-08	2026	MIT	Paving_Hauling	Hauling
PAREA1	DPM	2.4E-09	2026	MIT	Paving_Hauling	Hauling
HAUL	DPM	2.8E-08	2026	MIT	Paving_Vendor	Vendor
PAREA1	DPM	1.5E-09	2026	MIT	Paving_Vendor	Vendor
HAUL	DPM	2.5E-07	2026	MIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.2E-08	2026	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	9.4E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.7E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.7E-08	2027	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.4E-07	2027	MIT	Building Construction_Vendor	Vendor
PAREA2	DPM	7.5E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	3.4E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA2	DPM	1.5E-08	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA2	DPM	6.6E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2025	MIT	Demolition_Hauling	Hauling
PAREA2	DPM	1.3E-08	2025	MIT	Demolition_Hauling	Hauling
HAUL	DPM	1.1E-07	2025	MIT	Demolition_Vendor	Vendor
PAREA2	DPM	6.3E-09	2025	MIT	Demolition_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
HAUL	DPM	9.8E-07	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	4.8E-08	2025	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	1.5E-07	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	8.0E-09	2025	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	6.4E-07	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA2	DPM	3.1E-08	2026	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	9.3E-08	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA2	DPM	5.1E-09	2026	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	2.3E-08	2028	MIT	Paving_Hauling	Hauling
PAREA2	DPM	1.1E-09	2028	MIT	Paving_Hauling	Hauling
HAUL	DPM	5.5E-09	2028	MIT	Paving_Vendor	Vendor
PAREA2	DPM	3.0E-10	2028	MIT	Paving_Vendor	Vendor
HAUL	DPM	6.7E-08	2026	MIT	Building Construction_Hauling	Hauling
PAREA3	DPM	3.2E-09	2026	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	3.3E-08	2026	MIT	Building Construction_Vendor	Vendor
PAREA3	DPM	1.8E-09	2026	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.5E-07	2027	MIT	Building Construction_Hauling	Hauling
PAREA3	DPM	6.8E-09	2027	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	7.0E-08	2027	MIT	Building Construction_Vendor	Vendor
PAREA3	DPM	3.8E-09	2027	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.0E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA3	DPM	4.6E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2028	MIT	Building Construction_Vendor	Vendor
PAREA3	DPM	2.6E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	7.7E-08	2026	MIT	Demolition_Hauling	Hauling
PAREA3	DPM	3.6E-09	2026	MIT	Demolition_Hauling	Hauling
HAUL	DPM	3.4E-08	2026	MIT	Demolition_Vendor	Vendor
PAREA3	DPM	1.9E-09	2026	MIT	Demolition_Vendor	Vendor
HAUL	DPM	1.7E-07	2026	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	8.1E-09	2026	MIT	Grading and Shoring_Hauling	Hauling
HAUL	DPM	4.6E-08	2026	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	2.5E-09	2026	MIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	2.3E-07	2027	MIT	Grading and Shoring_Hauling	Hauling
PAREA3	DPM	1.1E-08	2027	MIT	Grading and Shoring_Hauling	Hauling
HAUL	DPM	6.2E-08	2027	MIT	Grading and Shoring_Vendor	Vendor
PAREA3	DPM	3.4E-09	2027	MIT	Grading and Shoring_Vendor	Vendor
HAUL	DPM	3.6E-08	2027	MIT	Paving_Hauling	Hauling
PAREA3	DPM	1.7E-09	2027	MIT	Paving_Hauling	Hauling
HAUL	DPM	1.1E-08	2027	MIT	Paving_Vendor	Vendor
PAREA3	DPM	6.1E-10	2027	MIT	Paving_Vendor	Vendor
HAUL	DPM	1.4E-07	2028	MIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.6E-09	2028	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2028	MIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.8E-09	2028	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.6E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	7.2E-09	2029	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.2E-07	2029	MIT	Building Construction_Vendor	Vendor

Modeled Revised Variant Construction Emissions before Scaling

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO	DETAIL	EQUIPMENT
PAREA4V	DPM	6.3E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.4E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA4V	DPM	6.1E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.0E-07	2030	MIT	Building Construction_Vendor	Vendor
PAREA4V	DPM	5.3E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.3E-07	2027	MIT	Demolition_Hauling	Hauling
PAREA4V	DPM	2.5E-08	2027	MIT	Demolition_Hauling	Hauling
HAUL	DPM	3.8E-08	2027	MIT	Demolition_Vendor	Vendor
PAREA4V	DPM	2.1E-09	2027	MIT	Demolition_Vendor	Vendor
HAUL	DPM	3.6E-07	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	1.7E-08	2027	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	6.9E-08	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	3.7E-09	2027	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	4.4E-07	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
PAREA4V	DPM	2.0E-08	2028	MIT	Grading, Shoring, Excavate_Hauling	Hauling
HAUL	DPM	8.4E-08	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
PAREA4V	DPM	4.5E-09	2028	MIT	Grading, Shoring, Excavate_Vendor	Vendor
HAUL	DPM	3.0E-08	2030	MIT	Paving_Hauling	Hauling
PAREA4V	DPM	1.3E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	DPM	8.9E-09	2030	MIT	Paving_Vendor	Vendor
PAREA4V	DPM	4.7E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	DPM	2.0E-07	2029	MIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.0E-09	2029	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.2E-08	2029	MIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.4E-09	2029	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.7E-07	2030	MIT	Building Construction_Hauling	Hauling
PAREA5	DPM	1.2E-08	2030	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	1.1E-07	2030	MIT	Building Construction_Vendor	Vendor
PAREA5	DPM	5.8E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.2E-07	2031	MIT	Building Construction_Hauling	Hauling
PAREA5	DPM	9.4E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	8.5E-08	2031	MIT	Building Construction_Vendor	Vendor
PAREA5	DPM	4.5E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	9.5E-08	2028	MIT	Demolition_Hauling	Hauling
PAREA5	DPM	4.3E-09	2028	MIT	Demolition_Hauling	Hauling
HAUL	DPM	4.2E-08	2028	MIT	Demolition_Vendor	Vendor
PAREA5	DPM	2.3E-09	2028	MIT	Demolition_Vendor	Vendor
HAUL	DPM	6.1E-07	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.8E-08	2028	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	1.0E-07	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.4E-09	2028	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	5.9E-07	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
PAREA5	DPM	2.7E-08	2029	MIT	Grading, Shoring, Excavation_Hauling	Hauling
HAUL	DPM	9.6E-08	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
PAREA5	DPM	5.2E-09	2029	MIT	Grading, Shoring, Excavation_Vendor	Vendor
HAUL	DPM	2.9E-08	2030	MIT	Paving_Hauling	Hauling
PAREA5	DPM	1.3E-09	2030	MIT	Paving_Hauling	Hauling
HAUL	DPM	9.1E-09	2030	MIT	Paving_Vendor	Vendor
PAREA5	DPM	4.8E-10	2030	MIT	Paving_Vendor	Vendor
HAUL	DPM	5.1E-08	2030	MIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.3E-09	2030	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	4.8E-08	2030	MIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2030	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	5.4E-08	2031	MIT	Building Construction_Hauling	Hauling
PAREA6	DPM	2.4E-09	2031	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	5.0E-08	2031	MIT	Building Construction_Vendor	Vendor
PAREA6	DPM	2.6E-09	2031	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	2.4E-08	2032	MIT	Building Construction_Hauling	Hauling
PAREA6	DPM	1.0E-09	2032	MIT	Building Construction_Hauling	Hauling
HAUL	DPM	2.1E-08	2032	MIT	Building Construction_Vendor	Vendor
PAREA6	DPM	1.1E-09	2032	MIT	Building Construction_Vendor	Vendor
HAUL	DPM	1.7E-07	2029	MIT	Demolition_Hauling	Hauling
PAREA6	DPM	7.6E-09	2029	MIT	Demolition_Hauling	Hauling
HAUL	DPM	1.6E-08	2029	MIT	Demolition_Vendor	Vendor
PAREA6	DPM	8.4E-10	2029	MIT	Demolition_Vendor	Vendor
HAUL	DPM	2.2E-07	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.0E-08	2029	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	3.2E-08	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	1.7E-09	2029	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	3.1E-08	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
PAREA6	DPM	1.4E-09	2030	MIT	Grading, Shoring, Excavating_Hauling	Hauling
HAUL	DPM	4.5E-09	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
PAREA6	DPM	2.4E-10	2030	MIT	Grading, Shoring, Excavating_Vendor	Vendor
HAUL	DPM	8.3E-09	2031	MIT	Paving_Hauling	Hauling
PAREA6	DPM	3.6E-10	2031	MIT	Paving_Hauling	Hauling
HAUL	DPM	1.0E-08	2031	MIT	Paving_Vendor	Vendor
PAREA6	DPM	5.4E-10	2031	MIT	Paving_Vendor	Vendor

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
NW1	DPM	1.1E-04	2028	UNMIT
NW2	DPM	1.1E-04	2028	UNMIT
NW3	DPM	1.1E-04	2028	UNMIT
W1	DPM	2.4E-06	2028	UNMIT
W3	DPM	2.0E-07	2028	UNMIT
W4	DPM	2.0E-07	2028	UNMIT
S3	DPM	3.2E-05	2028	UNMIT
E1	DPM	2.4E-06	2028	UNMIT
NW1	PM25	1.1E-04	2028	UNMIT
NW2	PM25	1.1E-04	2028	UNMIT
NW3	PM25	1.1E-04	2028	UNMIT
W1	PM25	2.4E-06	2028	UNMIT
W3	PM25	2.0E-07	2028	UNMIT
W4	PM25	2.0E-07	2028	UNMIT
S3	PM25	3.2E-05	2028	UNMIT
E1	PM25	2.4E-06	2028	UNMIT
NW1	DPM	1.1E-05	2028	MIT
NW2	DPM	1.1E-05	2028	MIT
NW3	DPM	1.1E-05	2028	MIT
W1	DPM	2.4E-07	2028	MIT
W3	DPM	2.0E-07	2028	MIT
W4	DPM	2.0E-07	2028	MIT
S3	DPM	3.2E-05	2028	MIT
E1	DPM	2.4E-07	2028	MIT
NW1	PM25	1.1E-05	2028	MIT
NW2	PM25	1.1E-05	2028	MIT
NW3	PM25	1.1E-05	2028	MIT
W1	PM25	2.4E-07	2028	MIT
W3	PM25	2.0E-07	2028	MIT
W4	PM25	2.0E-07	2028	MIT
S3	PM25	3.2E-05	2028	MIT
E1	PM25	2.4E-07	2028	MIT
NW1	DPM	1.1E-04	2029	UNMIT
NW2	DPM	1.1E-04	2029	UNMIT
NW3	DPM	1.1E-04	2029	UNMIT
W1	DPM	1.8E-05	2029	UNMIT
W3	DPM	8.0E-06	2029	UNMIT
W4	DPM	8.0E-06	2029	UNMIT
S3	DPM	3.2E-05	2029	UNMIT
E1	DPM	1.8E-05	2029	UNMIT
NW1	PM25	1.1E-04	2029	UNMIT
NW2	PM25	1.1E-04	2029	UNMIT
NW3	PM25	1.1E-04	2029	UNMIT
W1	PM25	1.8E-05	2029	UNMIT
W3	PM25	8.0E-06	2029	UNMIT
W4	PM25	8.0E-06	2029	UNMIT
S3	PM25	3.2E-05	2029	UNMIT
E1	PM25	1.8E-05	2029	UNMIT
NW1	DPM	1.1E-05	2029	MIT
NW2	DPM	1.1E-05	2029	MIT
NW3	DPM	1.1E-05	2029	MIT
W1	DPM	1.8E-06	2029	MIT
W3	DPM	8.0E-06	2029	MIT
W4	DPM	8.0E-06	2029	MIT
S3	DPM	3.2E-05	2029	MIT
E1	DPM	1.8E-06	2029	MIT
NW1	PM25	1.1E-05	2029	MIT
NW2	PM25	1.1E-05	2029	MIT
NW3	PM25	1.1E-05	2029	MIT
W1	PM25	1.8E-06	2029	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	8.0E-06	2029	MIT
W4	PM25	8.0E-06	2029	MIT
S3	PM25	3.2E-05	2029	MIT
E1	PM25	1.8E-06	2029	MIT
NW1	DPM	1.1E-04	2030	UNMIT
NW2	DPM	1.1E-04	2030	UNMIT
NW3	DPM	1.1E-04	2030	UNMIT
W1	DPM	4.9E-05	2030	UNMIT
W3	DPM	8.0E-06	2030	UNMIT
W4	DPM	8.0E-06	2030	UNMIT
S3	DPM	3.2E-05	2030	UNMIT
E1	DPM	4.9E-05	2030	UNMIT
E3	DPM	4.9E-05	2030	UNMIT
E4	DPM	4.9E-05	2030	UNMIT
NW1	PM25	1.1E-04	2030	UNMIT
NW2	PM25	1.1E-04	2030	UNMIT
NW3	PM25	1.1E-04	2030	UNMIT
W1	PM25	4.9E-05	2030	UNMIT
W3	PM25	8.0E-06	2030	UNMIT
W4	PM25	8.0E-06	2030	UNMIT
S3	PM25	3.2E-05	2030	UNMIT
E1	PM25	4.9E-05	2030	UNMIT
E3	PM25	4.9E-05	2030	UNMIT
E4	PM25	4.9E-05	2030	UNMIT
NW1	DPM	1.1E-05	2030	MIT
NW2	DPM	1.1E-05	2030	MIT
NW3	DPM	1.1E-05	2030	MIT
W1	DPM	4.9E-06	2030	MIT
W3	DPM	8.0E-06	2030	MIT
W4	DPM	8.0E-06	2030	MIT
S3	DPM	3.2E-05	2030	MIT
E1	DPM	4.9E-06	2030	MIT
E3	DPM	4.9E-06	2030	MIT
E4	DPM	4.9E-06	2030	MIT
NW1	PM25	1.1E-05	2030	MIT
NW2	PM25	1.1E-05	2030	MIT
NW3	PM25	1.1E-05	2030	MIT
W1	PM25	4.9E-06	2030	MIT
W3	PM25	8.0E-06	2030	MIT
W4	PM25	8.0E-06	2030	MIT
S3	PM25	3.2E-05	2030	MIT
E1	PM25	4.9E-06	2030	MIT
E3	PM25	4.9E-06	2030	MIT
E4	PM25	4.9E-06	2030	MIT
NW1	DPM	1.1E-04	2031	UNMIT
NW2	DPM	1.1E-04	2031	UNMIT
NW3	DPM	1.1E-04	2031	UNMIT
W1	DPM	9.2E-05	2031	UNMIT
W3	DPM	1.3E-05	2031	UNMIT
W4	DPM	1.3E-05	2031	UNMIT
S1	DPM	9.2E-05	2031	UNMIT
S2	DPM	1.3E-05	2031	UNMIT
S3	DPM	3.2E-05	2031	UNMIT
E1	DPM	9.2E-05	2031	UNMIT
E3	DPM	9.2E-05	2031	UNMIT
E4	DPM	9.2E-05	2031	UNMIT
NW1	PM25	1.1E-04	2031	UNMIT
NW2	PM25	1.1E-04	2031	UNMIT
NW3	PM25	1.1E-04	2031	UNMIT
W1	PM25	9.2E-05	2031	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	1.3E-05	2031	UNMIT
W4	PM25	1.3E-05	2031	UNMIT
S1	PM25	9.2E-05	2031	UNMIT
S2	PM25	1.3E-05	2031	UNMIT
S3	PM25	3.2E-05	2031	UNMIT
E1	PM25	9.2E-05	2031	UNMIT
E3	PM25	9.2E-05	2031	UNMIT
E4	PM25	9.2E-05	2031	UNMIT
NW1	DPM	1.1E-05	2031	MIT
NW2	DPM	1.1E-05	2031	MIT
NW3	DPM	1.1E-05	2031	MIT
W1	DPM	9.2E-06	2031	MIT
W3	DPM	1.3E-05	2031	MIT
W4	DPM	1.3E-05	2031	MIT
S1	DPM	9.2E-06	2031	MIT
S2	DPM	1.3E-05	2031	MIT
S3	DPM	3.2E-05	2031	MIT
E1	DPM	9.2E-06	2031	MIT
E3	DPM	9.2E-06	2031	MIT
E4	DPM	9.2E-06	2031	MIT
NW1	PM25	1.1E-05	2031	MIT
NW2	PM25	1.1E-05	2031	MIT
NW3	PM25	1.1E-05	2031	MIT
W1	PM25	9.2E-06	2031	MIT
W3	PM25	1.3E-05	2031	MIT
W4	PM25	1.3E-05	2031	MIT
S1	PM25	9.2E-06	2031	MIT
S2	PM25	1.3E-05	2031	MIT
S3	PM25	3.2E-05	2031	MIT
E1	PM25	9.2E-06	2031	MIT
E3	PM25	9.2E-06	2031	MIT
E4	PM25	9.2E-06	2031	MIT
NW1	DPM	1.1E-04	2032	UNMIT
NW2	DPM	1.1E-04	2032	UNMIT
NW3	DPM	1.1E-04	2032	UNMIT
W1	DPM	1.5E-04	2032	UNMIT
W3	DPM	2.8E-05	2032	UNMIT
W4	DPM	2.8E-05	2032	UNMIT
S1	DPM	1.5E-04	2032	UNMIT
S2	DPM	2.8E-05	2032	UNMIT
S3	DPM	1.8E-04	2032	UNMIT
E1	DPM	1.5E-04	2032	UNMIT
E3	DPM	1.5E-04	2032	UNMIT
E4	DPM	1.5E-04	2032	UNMIT
NW1	PM25	1.1E-04	2032	UNMIT
NW2	PM25	1.1E-04	2032	UNMIT
NW3	PM25	1.1E-04	2032	UNMIT
W1	PM25	1.5E-04	2032	UNMIT
W3	PM25	2.8E-05	2032	UNMIT
W4	PM25	2.8E-05	2032	UNMIT
S1	PM25	1.5E-04	2032	UNMIT
S2	PM25	2.8E-05	2032	UNMIT
S3	PM25	1.8E-04	2032	UNMIT
E1	PM25	1.5E-04	2032	UNMIT
E3	PM25	1.5E-04	2032	UNMIT
E4	PM25	1.5E-04	2032	UNMIT
NW1	DPM	1.1E-05	2032	MIT
NW2	DPM	1.1E-05	2032	MIT
NW3	DPM	1.1E-05	2032	MIT
W1	DPM	1.5E-05	2032	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	2.8E-05	2032	MIT
W4	DPM	2.8E-05	2032	MIT
S1	DPM	1.5E-05	2032	MIT
S2	DPM	2.8E-05	2032	MIT
S3	DPM	4.3E-05	2032	MIT
E1	DPM	1.5E-05	2032	MIT
E3	DPM	1.5E-05	2032	MIT
E4	DPM	1.5E-05	2032	MIT
NW1	PM25	1.1E-05	2032	MIT
NW2	PM25	1.1E-05	2032	MIT
NW3	PM25	1.1E-05	2032	MIT
W1	PM25	1.5E-05	2032	MIT
W3	PM25	2.8E-05	2032	MIT
W4	PM25	2.8E-05	2032	MIT
S1	PM25	1.5E-05	2032	MIT
S2	PM25	2.8E-05	2032	MIT
S3	PM25	4.3E-05	2032	MIT
E1	PM25	1.5E-05	2032	MIT
E3	PM25	1.5E-05	2032	MIT
E4	PM25	1.5E-05	2032	MIT
NW1	DPM	1.1E-04	2033	UNMIT
NW2	DPM	1.1E-04	2033	UNMIT
NW3	DPM	1.1E-04	2033	UNMIT
W1	DPM	1.6E-04	2033	UNMIT
W3	DPM	3.2E-05	2033	UNMIT
W4	DPM	3.2E-05	2033	UNMIT
S1	DPM	1.6E-04	2033	UNMIT
S2	DPM	3.2E-05	2033	UNMIT
S3	DPM	1.9E-04	2033	UNMIT
E1	DPM	1.6E-04	2033	UNMIT
E3	DPM	1.6E-04	2033	UNMIT
E4	DPM	1.6E-04	2033	UNMIT
NW1	PM25	1.1E-04	2033	UNMIT
NW2	PM25	1.1E-04	2033	UNMIT
NW3	PM25	1.1E-04	2033	UNMIT
W1	PM25	1.6E-04	2033	UNMIT
W3	PM25	3.2E-05	2033	UNMIT
W4	PM25	3.2E-05	2033	UNMIT
S1	PM25	1.6E-04	2033	UNMIT
S2	PM25	3.2E-05	2033	UNMIT
S3	PM25	1.9E-04	2033	UNMIT
E1	PM25	1.6E-04	2033	UNMIT
E3	PM25	1.6E-04	2033	UNMIT
E4	PM25	1.6E-04	2033	UNMIT
NW1	DPM	1.1E-05	2033	MIT
NW2	DPM	1.1E-05	2033	MIT
NW3	DPM	1.1E-05	2033	MIT
W1	DPM	1.6E-05	2033	MIT
W3	DPM	3.2E-05	2033	MIT
W4	DPM	3.2E-05	2033	MIT
S1	DPM	1.6E-05	2033	MIT
S2	DPM	3.2E-05	2033	MIT
S3	DPM	4.8E-05	2033	MIT
E1	DPM	1.6E-05	2033	MIT
E3	DPM	1.6E-05	2033	MIT
E4	DPM	1.6E-05	2033	MIT
NW1	PM25	1.1E-05	2033	MIT
NW2	PM25	1.1E-05	2033	MIT
NW3	PM25	1.1E-05	2033	MIT
W1	PM25	1.6E-05	2033	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2033	MIT
W4	PM25	3.2E-05	2033	MIT
S1	PM25	1.6E-05	2033	MIT
S2	PM25	3.2E-05	2033	MIT
S3	PM25	4.8E-05	2033	MIT
E1	PM25	1.6E-05	2033	MIT
E3	PM25	1.6E-05	2033	MIT
E4	PM25	1.6E-05	2033	MIT
NW1	DPM	1.1E-04	2034	UNMIT
NW2	DPM	1.1E-04	2034	UNMIT
NW3	DPM	1.1E-04	2034	UNMIT
W1	DPM	1.6E-04	2034	UNMIT
W3	DPM	3.2E-05	2034	UNMIT
W4	DPM	3.2E-05	2034	UNMIT
S1	DPM	1.6E-04	2034	UNMIT
S2	DPM	3.2E-05	2034	UNMIT
S3	DPM	1.9E-04	2034	UNMIT
E1	DPM	1.6E-04	2034	UNMIT
E3	DPM	1.6E-04	2034	UNMIT
E4	DPM	1.6E-04	2034	UNMIT
NW1	PM25	1.1E-04	2034	UNMIT
NW2	PM25	1.1E-04	2034	UNMIT
NW3	PM25	1.1E-04	2034	UNMIT
W1	PM25	1.6E-04	2034	UNMIT
W3	PM25	3.2E-05	2034	UNMIT
W4	PM25	3.2E-05	2034	UNMIT
S1	PM25	1.6E-04	2034	UNMIT
S2	PM25	3.2E-05	2034	UNMIT
S3	PM25	1.9E-04	2034	UNMIT
E1	PM25	1.6E-04	2034	UNMIT
E3	PM25	1.6E-04	2034	UNMIT
E4	PM25	1.6E-04	2034	UNMIT
NW1	DPM	1.1E-05	2034	MIT
NW2	DPM	1.1E-05	2034	MIT
NW3	DPM	1.1E-05	2034	MIT
W1	DPM	1.6E-05	2034	MIT
W3	DPM	3.2E-05	2034	MIT
W4	DPM	3.2E-05	2034	MIT
S1	DPM	1.6E-05	2034	MIT
S2	DPM	3.2E-05	2034	MIT
S3	DPM	4.8E-05	2034	MIT
E1	DPM	1.6E-05	2034	MIT
E3	DPM	1.6E-05	2034	MIT
E4	DPM	1.6E-05	2034	MIT
NW1	PM25	1.1E-05	2034	MIT
NW2	PM25	1.1E-05	2034	MIT
NW3	PM25	1.1E-05	2034	MIT
W1	PM25	1.6E-05	2034	MIT
W3	PM25	3.2E-05	2034	MIT
W4	PM25	3.2E-05	2034	MIT
S1	PM25	1.6E-05	2034	MIT
S2	PM25	3.2E-05	2034	MIT
S3	PM25	4.8E-05	2034	MIT
E1	PM25	1.6E-05	2034	MIT
E3	PM25	1.6E-05	2034	MIT
E4	PM25	1.6E-05	2034	MIT
NW1	DPM	1.1E-04	2035	UNMIT
NW2	DPM	1.1E-04	2035	UNMIT
NW3	DPM	1.1E-04	2035	UNMIT
W1	DPM	1.6E-04	2035	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2035	UNMIT
W4	DPM	3.2E-05	2035	UNMIT
S1	DPM	1.6E-04	2035	UNMIT
S2	DPM	3.2E-05	2035	UNMIT
S3	DPM	1.9E-04	2035	UNMIT
E1	DPM	1.6E-04	2035	UNMIT
E3	DPM	1.6E-04	2035	UNMIT
E4	DPM	1.6E-04	2035	UNMIT
NW1	PM25	1.1E-04	2035	UNMIT
NW2	PM25	1.1E-04	2035	UNMIT
NW3	PM25	1.1E-04	2035	UNMIT
W1	PM25	1.6E-04	2035	UNMIT
W3	PM25	3.2E-05	2035	UNMIT
W4	PM25	3.2E-05	2035	UNMIT
S1	PM25	1.6E-04	2035	UNMIT
S2	PM25	3.2E-05	2035	UNMIT
S3	PM25	1.9E-04	2035	UNMIT
E1	PM25	1.6E-04	2035	UNMIT
E3	PM25	1.6E-04	2035	UNMIT
E4	PM25	1.6E-04	2035	UNMIT
NW1	DPM	1.1E-05	2035	MIT
NW2	DPM	1.1E-05	2035	MIT
NW3	DPM	1.1E-05	2035	MIT
W1	DPM	1.6E-05	2035	MIT
W3	DPM	3.2E-05	2035	MIT
W4	DPM	3.2E-05	2035	MIT
S1	DPM	1.6E-05	2035	MIT
S2	DPM	3.2E-05	2035	MIT
S3	DPM	4.8E-05	2035	MIT
E1	DPM	1.6E-05	2035	MIT
E3	DPM	1.6E-05	2035	MIT
E4	DPM	1.6E-05	2035	MIT
NW1	PM25	1.1E-05	2035	MIT
NW2	PM25	1.1E-05	2035	MIT
NW3	PM25	1.1E-05	2035	MIT
W1	PM25	1.6E-05	2035	MIT
W3	PM25	3.2E-05	2035	MIT
W4	PM25	3.2E-05	2035	MIT
S1	PM25	1.6E-05	2035	MIT
S2	PM25	3.2E-05	2035	MIT
S3	PM25	4.8E-05	2035	MIT
E1	PM25	1.6E-05	2035	MIT
E3	PM25	1.6E-05	2035	MIT
E4	PM25	1.6E-05	2035	MIT
NW1	DPM	1.1E-04	2036	UNMIT
NW2	DPM	1.1E-04	2036	UNMIT
NW3	DPM	1.1E-04	2036	UNMIT
W1	DPM	1.6E-04	2036	UNMIT
W3	DPM	3.2E-05	2036	UNMIT
W4	DPM	3.2E-05	2036	UNMIT
S1	DPM	1.6E-04	2036	UNMIT
S2	DPM	3.2E-05	2036	UNMIT
S3	DPM	1.9E-04	2036	UNMIT
E1	DPM	1.6E-04	2036	UNMIT
E3	DPM	1.6E-04	2036	UNMIT
E4	DPM	1.6E-04	2036	UNMIT
NW1	PM25	1.1E-04	2036	UNMIT
NW2	PM25	1.1E-04	2036	UNMIT
NW3	PM25	1.1E-04	2036	UNMIT
W1	PM25	1.6E-04	2036	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2036	UNMIT
W4	PM25	3.2E-05	2036	UNMIT
S1	PM25	1.6E-04	2036	UNMIT
S2	PM25	3.2E-05	2036	UNMIT
S3	PM25	1.9E-04	2036	UNMIT
E1	PM25	1.6E-04	2036	UNMIT
E3	PM25	1.6E-04	2036	UNMIT
E4	PM25	1.6E-04	2036	UNMIT
NW1	DPM	1.1E-05	2036	MIT
NW2	DPM	1.1E-05	2036	MIT
NW3	DPM	1.1E-05	2036	MIT
W1	DPM	1.6E-05	2036	MIT
W3	DPM	3.2E-05	2036	MIT
W4	DPM	3.2E-05	2036	MIT
S1	DPM	1.6E-05	2036	MIT
S2	DPM	3.2E-05	2036	MIT
S3	DPM	4.8E-05	2036	MIT
E1	DPM	1.6E-05	2036	MIT
E3	DPM	1.6E-05	2036	MIT
E4	DPM	1.6E-05	2036	MIT
NW1	PM25	1.1E-05	2036	MIT
NW2	PM25	1.1E-05	2036	MIT
NW3	PM25	1.1E-05	2036	MIT
W1	PM25	1.6E-05	2036	MIT
W3	PM25	3.2E-05	2036	MIT
W4	PM25	3.2E-05	2036	MIT
S1	PM25	1.6E-05	2036	MIT
S2	PM25	3.2E-05	2036	MIT
S3	PM25	4.8E-05	2036	MIT
E1	PM25	1.6E-05	2036	MIT
E3	PM25	1.6E-05	2036	MIT
E4	PM25	1.6E-05	2036	MIT
NW1	DPM	1.1E-04	2037	UNMIT
NW2	DPM	1.1E-04	2037	UNMIT
NW3	DPM	1.1E-04	2037	UNMIT
W1	DPM	1.6E-04	2037	UNMIT
W3	DPM	3.2E-05	2037	UNMIT
W4	DPM	3.2E-05	2037	UNMIT
S1	DPM	1.6E-04	2037	UNMIT
S2	DPM	3.2E-05	2037	UNMIT
S3	DPM	1.9E-04	2037	UNMIT
E1	DPM	1.6E-04	2037	UNMIT
E3	DPM	1.6E-04	2037	UNMIT
E4	DPM	1.6E-04	2037	UNMIT
NW1	PM25	1.1E-04	2037	UNMIT
NW2	PM25	1.1E-04	2037	UNMIT
NW3	PM25	1.1E-04	2037	UNMIT
W1	PM25	1.6E-04	2037	UNMIT
W3	PM25	3.2E-05	2037	UNMIT
W4	PM25	3.2E-05	2037	UNMIT
S1	PM25	1.6E-04	2037	UNMIT
S2	PM25	3.2E-05	2037	UNMIT
S3	PM25	1.9E-04	2037	UNMIT
E1	PM25	1.6E-04	2037	UNMIT
E3	PM25	1.6E-04	2037	UNMIT
E4	PM25	1.6E-04	2037	UNMIT
NW1	DPM	1.1E-05	2037	MIT
NW2	DPM	1.1E-05	2037	MIT
NW3	DPM	1.1E-05	2037	MIT
W1	DPM	1.6E-05	2037	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2037	MIT
W4	DPM	3.2E-05	2037	MIT
S1	DPM	1.6E-05	2037	MIT
S2	DPM	3.2E-05	2037	MIT
S3	DPM	4.8E-05	2037	MIT
E1	DPM	1.6E-05	2037	MIT
E3	DPM	1.6E-05	2037	MIT
E4	DPM	1.6E-05	2037	MIT
NW1	PM25	1.1E-05	2037	MIT
NW2	PM25	1.1E-05	2037	MIT
NW3	PM25	1.1E-05	2037	MIT
W1	PM25	1.6E-05	2037	MIT
W3	PM25	3.2E-05	2037	MIT
W4	PM25	3.2E-05	2037	MIT
S1	PM25	1.6E-05	2037	MIT
S2	PM25	3.2E-05	2037	MIT
S3	PM25	4.8E-05	2037	MIT
E1	PM25	1.6E-05	2037	MIT
E3	PM25	1.6E-05	2037	MIT
E4	PM25	1.6E-05	2037	MIT
NW1	DPM	1.1E-04	2038	UNMIT
NW2	DPM	1.1E-04	2038	UNMIT
NW3	DPM	1.1E-04	2038	UNMIT
W1	DPM	1.6E-04	2038	UNMIT
W3	DPM	3.2E-05	2038	UNMIT
W4	DPM	3.2E-05	2038	UNMIT
S1	DPM	1.6E-04	2038	UNMIT
S2	DPM	3.2E-05	2038	UNMIT
S3	DPM	1.9E-04	2038	UNMIT
E1	DPM	1.6E-04	2038	UNMIT
E3	DPM	1.6E-04	2038	UNMIT
E4	DPM	1.6E-04	2038	UNMIT
NW1	PM25	1.1E-04	2038	UNMIT
NW2	PM25	1.1E-04	2038	UNMIT
NW3	PM25	1.1E-04	2038	UNMIT
W1	PM25	1.6E-04	2038	UNMIT
W3	PM25	3.2E-05	2038	UNMIT
W4	PM25	3.2E-05	2038	UNMIT
S1	PM25	1.6E-04	2038	UNMIT
S2	PM25	3.2E-05	2038	UNMIT
S3	PM25	1.9E-04	2038	UNMIT
E1	PM25	1.6E-04	2038	UNMIT
E3	PM25	1.6E-04	2038	UNMIT
E4	PM25	1.6E-04	2038	UNMIT
NW1	DPM	1.1E-05	2038	MIT
NW2	DPM	1.1E-05	2038	MIT
NW3	DPM	1.1E-05	2038	MIT
W1	DPM	1.6E-05	2038	MIT
W3	DPM	3.2E-05	2038	MIT
W4	DPM	3.2E-05	2038	MIT
S1	DPM	1.6E-05	2038	MIT
S2	DPM	3.2E-05	2038	MIT
S3	DPM	4.8E-05	2038	MIT
E1	DPM	1.6E-05	2038	MIT
E3	DPM	1.6E-05	2038	MIT
E4	DPM	1.6E-05	2038	MIT
NW1	PM25	1.1E-05	2038	MIT
NW2	PM25	1.1E-05	2038	MIT
NW3	PM25	1.1E-05	2038	MIT
W1	PM25	1.6E-05	2038	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2038	MIT
W4	PM25	3.2E-05	2038	MIT
S1	PM25	1.6E-05	2038	MIT
S2	PM25	3.2E-05	2038	MIT
S3	PM25	4.8E-05	2038	MIT
E1	PM25	1.6E-05	2038	MIT
E3	PM25	1.6E-05	2038	MIT
E4	PM25	1.6E-05	2038	MIT
NW1	DPM	1.1E-04	2039	UNMIT
NW2	DPM	1.1E-04	2039	UNMIT
NW3	DPM	1.1E-04	2039	UNMIT
W1	DPM	1.6E-04	2039	UNMIT
W3	DPM	3.2E-05	2039	UNMIT
W4	DPM	3.2E-05	2039	UNMIT
S1	DPM	1.6E-04	2039	UNMIT
S2	DPM	3.2E-05	2039	UNMIT
S3	DPM	1.9E-04	2039	UNMIT
E1	DPM	1.6E-04	2039	UNMIT
E3	DPM	1.6E-04	2039	UNMIT
E4	DPM	1.6E-04	2039	UNMIT
NW1	PM25	1.1E-04	2039	UNMIT
NW2	PM25	1.1E-04	2039	UNMIT
NW3	PM25	1.1E-04	2039	UNMIT
W1	PM25	1.6E-04	2039	UNMIT
W3	PM25	3.2E-05	2039	UNMIT
W4	PM25	3.2E-05	2039	UNMIT
S1	PM25	1.6E-04	2039	UNMIT
S2	PM25	3.2E-05	2039	UNMIT
S3	PM25	1.9E-04	2039	UNMIT
E1	PM25	1.6E-04	2039	UNMIT
E3	PM25	1.6E-04	2039	UNMIT
E4	PM25	1.6E-04	2039	UNMIT
NW1	DPM	1.1E-05	2039	MIT
NW2	DPM	1.1E-05	2039	MIT
NW3	DPM	1.1E-05	2039	MIT
W1	DPM	1.6E-05	2039	MIT
W3	DPM	3.2E-05	2039	MIT
W4	DPM	3.2E-05	2039	MIT
S1	DPM	1.6E-05	2039	MIT
S2	DPM	3.2E-05	2039	MIT
S3	DPM	4.8E-05	2039	MIT
E1	DPM	1.6E-05	2039	MIT
E3	DPM	1.6E-05	2039	MIT
E4	DPM	1.6E-05	2039	MIT
NW1	PM25	1.1E-05	2039	MIT
NW2	PM25	1.1E-05	2039	MIT
NW3	PM25	1.1E-05	2039	MIT
W1	PM25	1.6E-05	2039	MIT
W3	PM25	3.2E-05	2039	MIT
W4	PM25	3.2E-05	2039	MIT
S1	PM25	1.6E-05	2039	MIT
S2	PM25	3.2E-05	2039	MIT
S3	PM25	4.8E-05	2039	MIT
E1	PM25	1.6E-05	2039	MIT
E3	PM25	1.6E-05	2039	MIT
E4	PM25	1.6E-05	2039	MIT
NW1	DPM	1.1E-04	2040	UNMIT
NW2	DPM	1.1E-04	2040	UNMIT
NW3	DPM	1.1E-04	2040	UNMIT
W1	DPM	1.6E-04	2040	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2040	UNMIT
W4	DPM	3.2E-05	2040	UNMIT
S1	DPM	1.6E-04	2040	UNMIT
S2	DPM	3.2E-05	2040	UNMIT
S3	DPM	1.9E-04	2040	UNMIT
E1	DPM	1.6E-04	2040	UNMIT
E3	DPM	1.6E-04	2040	UNMIT
E4	DPM	1.6E-04	2040	UNMIT
NW1	PM25	1.1E-04	2040	UNMIT
NW2	PM25	1.1E-04	2040	UNMIT
NW3	PM25	1.1E-04	2040	UNMIT
W1	PM25	1.6E-04	2040	UNMIT
W3	PM25	3.2E-05	2040	UNMIT
W4	PM25	3.2E-05	2040	UNMIT
S1	PM25	1.6E-04	2040	UNMIT
S2	PM25	3.2E-05	2040	UNMIT
S3	PM25	1.9E-04	2040	UNMIT
E1	PM25	1.6E-04	2040	UNMIT
E3	PM25	1.6E-04	2040	UNMIT
E4	PM25	1.6E-04	2040	UNMIT
NW1	DPM	1.1E-05	2040	MIT
NW2	DPM	1.1E-05	2040	MIT
NW3	DPM	1.1E-05	2040	MIT
W1	DPM	1.6E-05	2040	MIT
W3	DPM	3.2E-05	2040	MIT
W4	DPM	3.2E-05	2040	MIT
S1	DPM	1.6E-05	2040	MIT
S2	DPM	3.2E-05	2040	MIT
S3	DPM	4.8E-05	2040	MIT
E1	DPM	1.6E-05	2040	MIT
E3	DPM	1.6E-05	2040	MIT
E4	DPM	1.6E-05	2040	MIT
NW1	PM25	1.1E-05	2040	MIT
NW2	PM25	1.1E-05	2040	MIT
NW3	PM25	1.1E-05	2040	MIT
W1	PM25	1.6E-05	2040	MIT
W3	PM25	3.2E-05	2040	MIT
W4	PM25	3.2E-05	2040	MIT
S1	PM25	1.6E-05	2040	MIT
S2	PM25	3.2E-05	2040	MIT
S3	PM25	4.8E-05	2040	MIT
E1	PM25	1.6E-05	2040	MIT
E3	PM25	1.6E-05	2040	MIT
E4	PM25	1.6E-05	2040	MIT
NW1	DPM	1.1E-04	2041	UNMIT
NW2	DPM	1.1E-04	2041	UNMIT
NW3	DPM	1.1E-04	2041	UNMIT
W1	DPM	1.6E-04	2041	UNMIT
W3	DPM	3.2E-05	2041	UNMIT
W4	DPM	3.2E-05	2041	UNMIT
S1	DPM	1.6E-04	2041	UNMIT
S2	DPM	3.2E-05	2041	UNMIT
S3	DPM	1.9E-04	2041	UNMIT
E1	DPM	1.6E-04	2041	UNMIT
E3	DPM	1.6E-04	2041	UNMIT
E4	DPM	1.6E-04	2041	UNMIT
NW1	PM25	1.1E-04	2041	UNMIT
NW2	PM25	1.1E-04	2041	UNMIT
NW3	PM25	1.1E-04	2041	UNMIT
W1	PM25	1.6E-04	2041	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2041	UNMIT
W4	PM25	3.2E-05	2041	UNMIT
S1	PM25	1.6E-04	2041	UNMIT
S2	PM25	3.2E-05	2041	UNMIT
S3	PM25	1.9E-04	2041	UNMIT
E1	PM25	1.6E-04	2041	UNMIT
E3	PM25	1.6E-04	2041	UNMIT
E4	PM25	1.6E-04	2041	UNMIT
NW1	DPM	1.1E-05	2041	MIT
NW2	DPM	1.1E-05	2041	MIT
NW3	DPM	1.1E-05	2041	MIT
W1	DPM	1.6E-05	2041	MIT
W3	DPM	3.2E-05	2041	MIT
W4	DPM	3.2E-05	2041	MIT
S1	DPM	1.6E-05	2041	MIT
S2	DPM	3.2E-05	2041	MIT
S3	DPM	4.8E-05	2041	MIT
E1	DPM	1.6E-05	2041	MIT
E3	DPM	1.6E-05	2041	MIT
E4	DPM	1.6E-05	2041	MIT
NW1	PM25	1.1E-05	2041	MIT
NW2	PM25	1.1E-05	2041	MIT
NW3	PM25	1.1E-05	2041	MIT
W1	PM25	1.6E-05	2041	MIT
W3	PM25	3.2E-05	2041	MIT
W4	PM25	3.2E-05	2041	MIT
S1	PM25	1.6E-05	2041	MIT
S2	PM25	3.2E-05	2041	MIT
S3	PM25	4.8E-05	2041	MIT
E1	PM25	1.6E-05	2041	MIT
E3	PM25	1.6E-05	2041	MIT
E4	PM25	1.6E-05	2041	MIT
NW1	DPM	1.1E-04	2042	UNMIT
NW2	DPM	1.1E-04	2042	UNMIT
NW3	DPM	1.1E-04	2042	UNMIT
W1	DPM	1.6E-04	2042	UNMIT
W3	DPM	3.2E-05	2042	UNMIT
W4	DPM	3.2E-05	2042	UNMIT
S1	DPM	1.6E-04	2042	UNMIT
S2	DPM	3.2E-05	2042	UNMIT
S3	DPM	1.9E-04	2042	UNMIT
E1	DPM	1.6E-04	2042	UNMIT
E3	DPM	1.6E-04	2042	UNMIT
E4	DPM	1.6E-04	2042	UNMIT
NW1	PM25	1.1E-04	2042	UNMIT
NW2	PM25	1.1E-04	2042	UNMIT
NW3	PM25	1.1E-04	2042	UNMIT
W1	PM25	1.6E-04	2042	UNMIT
W3	PM25	3.2E-05	2042	UNMIT
W4	PM25	3.2E-05	2042	UNMIT
S1	PM25	1.6E-04	2042	UNMIT
S2	PM25	3.2E-05	2042	UNMIT
S3	PM25	1.9E-04	2042	UNMIT
E1	PM25	1.6E-04	2042	UNMIT
E3	PM25	1.6E-04	2042	UNMIT
E4	PM25	1.6E-04	2042	UNMIT
NW1	DPM	1.1E-05	2042	MIT
NW2	DPM	1.1E-05	2042	MIT
NW3	DPM	1.1E-05	2042	MIT
W1	DPM	1.6E-05	2042	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2042	MIT
W4	DPM	3.2E-05	2042	MIT
S1	DPM	1.6E-05	2042	MIT
S2	DPM	3.2E-05	2042	MIT
S3	DPM	4.8E-05	2042	MIT
E1	DPM	1.6E-05	2042	MIT
E3	DPM	1.6E-05	2042	MIT
E4	DPM	1.6E-05	2042	MIT
NW1	PM25	1.1E-05	2042	MIT
NW2	PM25	1.1E-05	2042	MIT
NW3	PM25	1.1E-05	2042	MIT
W1	PM25	1.6E-05	2042	MIT
W3	PM25	3.2E-05	2042	MIT
W4	PM25	3.2E-05	2042	MIT
S1	PM25	1.6E-05	2042	MIT
S2	PM25	3.2E-05	2042	MIT
S3	PM25	4.8E-05	2042	MIT
E1	PM25	1.6E-05	2042	MIT
E3	PM25	1.6E-05	2042	MIT
E4	PM25	1.6E-05	2042	MIT
NW1	DPM	1.1E-04	2043	UNMIT
NW2	DPM	1.1E-04	2043	UNMIT
NW3	DPM	1.1E-04	2043	UNMIT
W1	DPM	1.6E-04	2043	UNMIT
W3	DPM	3.2E-05	2043	UNMIT
W4	DPM	3.2E-05	2043	UNMIT
S1	DPM	1.6E-04	2043	UNMIT
S2	DPM	3.2E-05	2043	UNMIT
S3	DPM	1.9E-04	2043	UNMIT
E1	DPM	1.6E-04	2043	UNMIT
E3	DPM	1.6E-04	2043	UNMIT
E4	DPM	1.6E-04	2043	UNMIT
NW1	PM25	1.1E-04	2043	UNMIT
NW2	PM25	1.1E-04	2043	UNMIT
NW3	PM25	1.1E-04	2043	UNMIT
W1	PM25	1.6E-04	2043	UNMIT
W3	PM25	3.2E-05	2043	UNMIT
W4	PM25	3.2E-05	2043	UNMIT
S1	PM25	1.6E-04	2043	UNMIT
S2	PM25	3.2E-05	2043	UNMIT
S3	PM25	1.9E-04	2043	UNMIT
E1	PM25	1.6E-04	2043	UNMIT
E3	PM25	1.6E-04	2043	UNMIT
E4	PM25	1.6E-04	2043	UNMIT
NW1	DPM	1.1E-05	2043	MIT
NW2	DPM	1.1E-05	2043	MIT
NW3	DPM	1.1E-05	2043	MIT
W1	DPM	1.6E-05	2043	MIT
W3	DPM	3.2E-05	2043	MIT
W4	DPM	3.2E-05	2043	MIT
S1	DPM	1.6E-05	2043	MIT
S2	DPM	3.2E-05	2043	MIT
S3	DPM	4.8E-05	2043	MIT
E1	DPM	1.6E-05	2043	MIT
E3	DPM	1.6E-05	2043	MIT
E4	DPM	1.6E-05	2043	MIT
NW1	PM25	1.1E-05	2043	MIT
NW2	PM25	1.1E-05	2043	MIT
NW3	PM25	1.1E-05	2043	MIT
W1	PM25	1.6E-05	2043	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2043	MIT
W4	PM25	3.2E-05	2043	MIT
S1	PM25	1.6E-05	2043	MIT
S2	PM25	3.2E-05	2043	MIT
S3	PM25	4.8E-05	2043	MIT
E1	PM25	1.6E-05	2043	MIT
E3	PM25	1.6E-05	2043	MIT
E4	PM25	1.6E-05	2043	MIT
NW1	DPM	1.1E-04	2044	UNMIT
NW2	DPM	1.1E-04	2044	UNMIT
NW3	DPM	1.1E-04	2044	UNMIT
W1	DPM	1.6E-04	2044	UNMIT
W3	DPM	3.2E-05	2044	UNMIT
W4	DPM	3.2E-05	2044	UNMIT
S1	DPM	1.6E-04	2044	UNMIT
S2	DPM	3.2E-05	2044	UNMIT
S3	DPM	1.9E-04	2044	UNMIT
E1	DPM	1.6E-04	2044	UNMIT
E3	DPM	1.6E-04	2044	UNMIT
E4	DPM	1.6E-04	2044	UNMIT
NW1	PM25	1.1E-04	2044	UNMIT
NW2	PM25	1.1E-04	2044	UNMIT
NW3	PM25	1.1E-04	2044	UNMIT
W1	PM25	1.6E-04	2044	UNMIT
W3	PM25	3.2E-05	2044	UNMIT
W4	PM25	3.2E-05	2044	UNMIT
S1	PM25	1.6E-04	2044	UNMIT
S2	PM25	3.2E-05	2044	UNMIT
S3	PM25	1.9E-04	2044	UNMIT
E1	PM25	1.6E-04	2044	UNMIT
E3	PM25	1.6E-04	2044	UNMIT
E4	PM25	1.6E-04	2044	UNMIT
NW1	DPM	1.1E-05	2044	MIT
NW2	DPM	1.1E-05	2044	MIT
NW3	DPM	1.1E-05	2044	MIT
W1	DPM	1.6E-05	2044	MIT
W3	DPM	3.2E-05	2044	MIT
W4	DPM	3.2E-05	2044	MIT
S1	DPM	1.6E-05	2044	MIT
S2	DPM	3.2E-05	2044	MIT
S3	DPM	4.8E-05	2044	MIT
E1	DPM	1.6E-05	2044	MIT
E3	DPM	1.6E-05	2044	MIT
E4	DPM	1.6E-05	2044	MIT
NW1	PM25	1.1E-05	2044	MIT
NW2	PM25	1.1E-05	2044	MIT
NW3	PM25	1.1E-05	2044	MIT
W1	PM25	1.6E-05	2044	MIT
W3	PM25	3.2E-05	2044	MIT
W4	PM25	3.2E-05	2044	MIT
S1	PM25	1.6E-05	2044	MIT
S2	PM25	3.2E-05	2044	MIT
S3	PM25	4.8E-05	2044	MIT
E1	PM25	1.6E-05	2044	MIT
E3	PM25	1.6E-05	2044	MIT
E4	PM25	1.6E-05	2044	MIT
NW1	DPM	1.1E-04	2045	UNMIT
NW2	DPM	1.1E-04	2045	UNMIT
NW3	DPM	1.1E-04	2045	UNMIT
W1	DPM	1.6E-04	2045	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2045	UNMIT
W4	DPM	3.2E-05	2045	UNMIT
S1	DPM	1.6E-04	2045	UNMIT
S2	DPM	3.2E-05	2045	UNMIT
S3	DPM	1.9E-04	2045	UNMIT
E1	DPM	1.6E-04	2045	UNMIT
E3	DPM	1.6E-04	2045	UNMIT
E4	DPM	1.6E-04	2045	UNMIT
NW1	PM25	1.1E-04	2045	UNMIT
NW2	PM25	1.1E-04	2045	UNMIT
NW3	PM25	1.1E-04	2045	UNMIT
W1	PM25	1.6E-04	2045	UNMIT
W3	PM25	3.2E-05	2045	UNMIT
W4	PM25	3.2E-05	2045	UNMIT
S1	PM25	1.6E-04	2045	UNMIT
S2	PM25	3.2E-05	2045	UNMIT
S3	PM25	1.9E-04	2045	UNMIT
E1	PM25	1.6E-04	2045	UNMIT
E3	PM25	1.6E-04	2045	UNMIT
E4	PM25	1.6E-04	2045	UNMIT
NW1	DPM	1.1E-05	2045	MIT
NW2	DPM	1.1E-05	2045	MIT
NW3	DPM	1.1E-05	2045	MIT
W1	DPM	1.6E-05	2045	MIT
W3	DPM	3.2E-05	2045	MIT
W4	DPM	3.2E-05	2045	MIT
S1	DPM	1.6E-05	2045	MIT
S2	DPM	3.2E-05	2045	MIT
S3	DPM	4.8E-05	2045	MIT
E1	DPM	1.6E-05	2045	MIT
E3	DPM	1.6E-05	2045	MIT
E4	DPM	1.6E-05	2045	MIT
NW1	PM25	1.1E-05	2045	MIT
NW2	PM25	1.1E-05	2045	MIT
NW3	PM25	1.1E-05	2045	MIT
W1	PM25	1.6E-05	2045	MIT
W3	PM25	3.2E-05	2045	MIT
W4	PM25	3.2E-05	2045	MIT
S1	PM25	1.6E-05	2045	MIT
S2	PM25	3.2E-05	2045	MIT
S3	PM25	4.8E-05	2045	MIT
E1	PM25	1.6E-05	2045	MIT
E3	PM25	1.6E-05	2045	MIT
E4	PM25	1.6E-05	2045	MIT
NW1	DPM	1.1E-04	2046	UNMIT
NW2	DPM	1.1E-04	2046	UNMIT
NW3	DPM	1.1E-04	2046	UNMIT
W1	DPM	1.6E-04	2046	UNMIT
W3	DPM	3.2E-05	2046	UNMIT
W4	DPM	3.2E-05	2046	UNMIT
S1	DPM	1.6E-04	2046	UNMIT
S2	DPM	3.2E-05	2046	UNMIT
S3	DPM	1.9E-04	2046	UNMIT
E1	DPM	1.6E-04	2046	UNMIT
E3	DPM	1.6E-04	2046	UNMIT
E4	DPM	1.6E-04	2046	UNMIT
NW1	PM25	1.1E-04	2046	UNMIT
NW2	PM25	1.1E-04	2046	UNMIT
NW3	PM25	1.1E-04	2046	UNMIT
W1	PM25	1.6E-04	2046	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2046	UNMIT
W4	PM25	3.2E-05	2046	UNMIT
S1	PM25	1.6E-04	2046	UNMIT
S2	PM25	3.2E-05	2046	UNMIT
S3	PM25	1.9E-04	2046	UNMIT
E1	PM25	1.6E-04	2046	UNMIT
E3	PM25	1.6E-04	2046	UNMIT
E4	PM25	1.6E-04	2046	UNMIT
NW1	DPM	1.1E-05	2046	MIT
NW2	DPM	1.1E-05	2046	MIT
NW3	DPM	1.1E-05	2046	MIT
W1	DPM	1.6E-05	2046	MIT
W3	DPM	3.2E-05	2046	MIT
W4	DPM	3.2E-05	2046	MIT
S1	DPM	1.6E-05	2046	MIT
S2	DPM	3.2E-05	2046	MIT
S3	DPM	4.8E-05	2046	MIT
E1	DPM	1.6E-05	2046	MIT
E3	DPM	1.6E-05	2046	MIT
E4	DPM	1.6E-05	2046	MIT
NW1	PM25	1.1E-05	2046	MIT
NW2	PM25	1.1E-05	2046	MIT
NW3	PM25	1.1E-05	2046	MIT
W1	PM25	1.6E-05	2046	MIT
W3	PM25	3.2E-05	2046	MIT
W4	PM25	3.2E-05	2046	MIT
S1	PM25	1.6E-05	2046	MIT
S2	PM25	3.2E-05	2046	MIT
S3	PM25	4.8E-05	2046	MIT
E1	PM25	1.6E-05	2046	MIT
E3	PM25	1.6E-05	2046	MIT
E4	PM25	1.6E-05	2046	MIT
NW1	DPM	1.1E-04	2047	UNMIT
NW2	DPM	1.1E-04	2047	UNMIT
NW3	DPM	1.1E-04	2047	UNMIT
W1	DPM	1.6E-04	2047	UNMIT
W3	DPM	3.2E-05	2047	UNMIT
W4	DPM	3.2E-05	2047	UNMIT
S1	DPM	1.6E-04	2047	UNMIT
S2	DPM	3.2E-05	2047	UNMIT
S3	DPM	1.9E-04	2047	UNMIT
E1	DPM	1.6E-04	2047	UNMIT
E3	DPM	1.6E-04	2047	UNMIT
E4	DPM	1.6E-04	2047	UNMIT
NW1	PM25	1.1E-04	2047	UNMIT
NW2	PM25	1.1E-04	2047	UNMIT
NW3	PM25	1.1E-04	2047	UNMIT
W1	PM25	1.6E-04	2047	UNMIT
W3	PM25	3.2E-05	2047	UNMIT
W4	PM25	3.2E-05	2047	UNMIT
S1	PM25	1.6E-04	2047	UNMIT
S2	PM25	3.2E-05	2047	UNMIT
S3	PM25	1.9E-04	2047	UNMIT
E1	PM25	1.6E-04	2047	UNMIT
E3	PM25	1.6E-04	2047	UNMIT
E4	PM25	1.6E-04	2047	UNMIT
NW1	DPM	1.1E-05	2047	MIT
NW2	DPM	1.1E-05	2047	MIT
NW3	DPM	1.1E-05	2047	MIT
W1	DPM	1.6E-05	2047	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2047	MIT
W4	DPM	3.2E-05	2047	MIT
S1	DPM	1.6E-05	2047	MIT
S2	DPM	3.2E-05	2047	MIT
S3	DPM	4.8E-05	2047	MIT
E1	DPM	1.6E-05	2047	MIT
E3	DPM	1.6E-05	2047	MIT
E4	DPM	1.6E-05	2047	MIT
NW1	PM25	1.1E-05	2047	MIT
NW2	PM25	1.1E-05	2047	MIT
NW3	PM25	1.1E-05	2047	MIT
W1	PM25	1.6E-05	2047	MIT
W3	PM25	3.2E-05	2047	MIT
W4	PM25	3.2E-05	2047	MIT
S1	PM25	1.6E-05	2047	MIT
S2	PM25	3.2E-05	2047	MIT
S3	PM25	4.8E-05	2047	MIT
E1	PM25	1.6E-05	2047	MIT
E3	PM25	1.6E-05	2047	MIT
E4	PM25	1.6E-05	2047	MIT
NW1	DPM	1.1E-04	2048	UNMIT
NW2	DPM	1.1E-04	2048	UNMIT
NW3	DPM	1.1E-04	2048	UNMIT
W1	DPM	1.6E-04	2048	UNMIT
W3	DPM	3.2E-05	2048	UNMIT
W4	DPM	3.2E-05	2048	UNMIT
S1	DPM	1.6E-04	2048	UNMIT
S2	DPM	3.2E-05	2048	UNMIT
S3	DPM	1.9E-04	2048	UNMIT
E1	DPM	1.6E-04	2048	UNMIT
E3	DPM	1.6E-04	2048	UNMIT
E4	DPM	1.6E-04	2048	UNMIT
NW1	PM25	1.1E-04	2048	UNMIT
NW2	PM25	1.1E-04	2048	UNMIT
NW3	PM25	1.1E-04	2048	UNMIT
W1	PM25	1.6E-04	2048	UNMIT
W3	PM25	3.2E-05	2048	UNMIT
W4	PM25	3.2E-05	2048	UNMIT
S1	PM25	1.6E-04	2048	UNMIT
S2	PM25	3.2E-05	2048	UNMIT
S3	PM25	1.9E-04	2048	UNMIT
E1	PM25	1.6E-04	2048	UNMIT
E3	PM25	1.6E-04	2048	UNMIT
E4	PM25	1.6E-04	2048	UNMIT
NW1	DPM	1.1E-05	2048	MIT
NW2	DPM	1.1E-05	2048	MIT
NW3	DPM	1.1E-05	2048	MIT
W1	DPM	1.6E-05	2048	MIT
W3	DPM	3.2E-05	2048	MIT
W4	DPM	3.2E-05	2048	MIT
S1	DPM	1.6E-05	2048	MIT
S2	DPM	3.2E-05	2048	MIT
S3	DPM	4.8E-05	2048	MIT
E1	DPM	1.6E-05	2048	MIT
E3	DPM	1.6E-05	2048	MIT
E4	DPM	1.6E-05	2048	MIT
NW1	PM25	1.1E-05	2048	MIT
NW2	PM25	1.1E-05	2048	MIT
NW3	PM25	1.1E-05	2048	MIT
W1	PM25	1.6E-05	2048	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2048	MIT
W4	PM25	3.2E-05	2048	MIT
S1	PM25	1.6E-05	2048	MIT
S2	PM25	3.2E-05	2048	MIT
S3	PM25	4.8E-05	2048	MIT
E1	PM25	1.6E-05	2048	MIT
E3	PM25	1.6E-05	2048	MIT
E4	PM25	1.6E-05	2048	MIT
NW1	DPM	1.1E-04	2049	UNMIT
NW2	DPM	1.1E-04	2049	UNMIT
NW3	DPM	1.1E-04	2049	UNMIT
W1	DPM	1.6E-04	2049	UNMIT
W3	DPM	3.2E-05	2049	UNMIT
W4	DPM	3.2E-05	2049	UNMIT
S1	DPM	1.6E-04	2049	UNMIT
S2	DPM	3.2E-05	2049	UNMIT
S3	DPM	1.9E-04	2049	UNMIT
E1	DPM	1.6E-04	2049	UNMIT
E3	DPM	1.6E-04	2049	UNMIT
E4	DPM	1.6E-04	2049	UNMIT
NW1	PM25	1.1E-04	2049	UNMIT
NW2	PM25	1.1E-04	2049	UNMIT
NW3	PM25	1.1E-04	2049	UNMIT
W1	PM25	1.6E-04	2049	UNMIT
W3	PM25	3.2E-05	2049	UNMIT
W4	PM25	3.2E-05	2049	UNMIT
S1	PM25	1.6E-04	2049	UNMIT
S2	PM25	3.2E-05	2049	UNMIT
S3	PM25	1.9E-04	2049	UNMIT
E1	PM25	1.6E-04	2049	UNMIT
E3	PM25	1.6E-04	2049	UNMIT
E4	PM25	1.6E-04	2049	UNMIT
NW1	DPM	1.1E-05	2049	MIT
NW2	DPM	1.1E-05	2049	MIT
NW3	DPM	1.1E-05	2049	MIT
W1	DPM	1.6E-05	2049	MIT
W3	DPM	3.2E-05	2049	MIT
W4	DPM	3.2E-05	2049	MIT
S1	DPM	1.6E-05	2049	MIT
S2	DPM	3.2E-05	2049	MIT
S3	DPM	4.8E-05	2049	MIT
E1	DPM	1.6E-05	2049	MIT
E3	DPM	1.6E-05	2049	MIT
E4	DPM	1.6E-05	2049	MIT
NW1	PM25	1.1E-05	2049	MIT
NW2	PM25	1.1E-05	2049	MIT
NW3	PM25	1.1E-05	2049	MIT
W1	PM25	1.6E-05	2049	MIT
W3	PM25	3.2E-05	2049	MIT
W4	PM25	3.2E-05	2049	MIT
S1	PM25	1.6E-05	2049	MIT
S2	PM25	3.2E-05	2049	MIT
S3	PM25	4.8E-05	2049	MIT
E1	PM25	1.6E-05	2049	MIT
E3	PM25	1.6E-05	2049	MIT
E4	PM25	1.6E-05	2049	MIT
NW1	DPM	1.1E-04	2050	UNMIT
NW2	DPM	1.1E-04	2050	UNMIT
NW3	DPM	1.1E-04	2050	UNMIT
W1	DPM	1.6E-04	2050	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2050	UNMIT
W4	DPM	3.2E-05	2050	UNMIT
S1	DPM	1.6E-04	2050	UNMIT
S2	DPM	3.2E-05	2050	UNMIT
S3	DPM	1.9E-04	2050	UNMIT
E1	DPM	1.6E-04	2050	UNMIT
E3	DPM	1.6E-04	2050	UNMIT
E4	DPM	1.6E-04	2050	UNMIT
NW1	PM25	1.1E-04	2050	UNMIT
NW2	PM25	1.1E-04	2050	UNMIT
NW3	PM25	1.1E-04	2050	UNMIT
W1	PM25	1.6E-04	2050	UNMIT
W3	PM25	3.2E-05	2050	UNMIT
W4	PM25	3.2E-05	2050	UNMIT
S1	PM25	1.6E-04	2050	UNMIT
S2	PM25	3.2E-05	2050	UNMIT
S3	PM25	1.9E-04	2050	UNMIT
E1	PM25	1.6E-04	2050	UNMIT
E3	PM25	1.6E-04	2050	UNMIT
E4	PM25	1.6E-04	2050	UNMIT
NW1	DPM	1.1E-05	2050	MIT
NW2	DPM	1.1E-05	2050	MIT
NW3	DPM	1.1E-05	2050	MIT
W1	DPM	1.6E-05	2050	MIT
W3	DPM	3.2E-05	2050	MIT
W4	DPM	3.2E-05	2050	MIT
S1	DPM	1.6E-05	2050	MIT
S2	DPM	3.2E-05	2050	MIT
S3	DPM	4.8E-05	2050	MIT
E1	DPM	1.6E-05	2050	MIT
E3	DPM	1.6E-05	2050	MIT
E4	DPM	1.6E-05	2050	MIT
NW1	PM25	1.1E-05	2050	MIT
NW2	PM25	1.1E-05	2050	MIT
NW3	PM25	1.1E-05	2050	MIT
W1	PM25	1.6E-05	2050	MIT
W3	PM25	3.2E-05	2050	MIT
W4	PM25	3.2E-05	2050	MIT
S1	PM25	1.6E-05	2050	MIT
S2	PM25	3.2E-05	2050	MIT
S3	PM25	4.8E-05	2050	MIT
E1	PM25	1.6E-05	2050	MIT
E3	PM25	1.6E-05	2050	MIT
E4	PM25	1.6E-05	2050	MIT
NW1	DPM	1.1E-04	2051	UNMIT
NW2	DPM	1.1E-04	2051	UNMIT
NW3	DPM	1.1E-04	2051	UNMIT
W1	DPM	1.6E-04	2051	UNMIT
W3	DPM	3.2E-05	2051	UNMIT
W4	DPM	3.2E-05	2051	UNMIT
S1	DPM	1.6E-04	2051	UNMIT
S2	DPM	3.2E-05	2051	UNMIT
S3	DPM	1.9E-04	2051	UNMIT
E1	DPM	1.6E-04	2051	UNMIT
E3	DPM	1.6E-04	2051	UNMIT
E4	DPM	1.6E-04	2051	UNMIT
NW1	PM25	1.1E-04	2051	UNMIT
NW2	PM25	1.1E-04	2051	UNMIT
NW3	PM25	1.1E-04	2051	UNMIT
W1	PM25	1.6E-04	2051	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2051	UNMIT
W4	PM25	3.2E-05	2051	UNMIT
S1	PM25	1.6E-04	2051	UNMIT
S2	PM25	3.2E-05	2051	UNMIT
S3	PM25	1.9E-04	2051	UNMIT
E1	PM25	1.6E-04	2051	UNMIT
E3	PM25	1.6E-04	2051	UNMIT
E4	PM25	1.6E-04	2051	UNMIT
NW1	DPM	1.1E-05	2051	MIT
NW2	DPM	1.1E-05	2051	MIT
NW3	DPM	1.1E-05	2051	MIT
W1	DPM	1.6E-05	2051	MIT
W3	DPM	3.2E-05	2051	MIT
W4	DPM	3.2E-05	2051	MIT
S1	DPM	1.6E-05	2051	MIT
S2	DPM	3.2E-05	2051	MIT
S3	DPM	4.8E-05	2051	MIT
E1	DPM	1.6E-05	2051	MIT
E3	DPM	1.6E-05	2051	MIT
E4	DPM	1.6E-05	2051	MIT
NW1	PM25	1.1E-05	2051	MIT
NW2	PM25	1.1E-05	2051	MIT
NW3	PM25	1.1E-05	2051	MIT
W1	PM25	1.6E-05	2051	MIT
W3	PM25	3.2E-05	2051	MIT
W4	PM25	3.2E-05	2051	MIT
S1	PM25	1.6E-05	2051	MIT
S2	PM25	3.2E-05	2051	MIT
S3	PM25	4.8E-05	2051	MIT
E1	PM25	1.6E-05	2051	MIT
E3	PM25	1.6E-05	2051	MIT
E4	PM25	1.6E-05	2051	MIT
NW1	DPM	1.1E-04	2052	UNMIT
NW2	DPM	1.1E-04	2052	UNMIT
NW3	DPM	1.1E-04	2052	UNMIT
W1	DPM	1.6E-04	2052	UNMIT
W3	DPM	3.2E-05	2052	UNMIT
W4	DPM	3.2E-05	2052	UNMIT
S1	DPM	1.6E-04	2052	UNMIT
S2	DPM	3.2E-05	2052	UNMIT
S3	DPM	1.9E-04	2052	UNMIT
E1	DPM	1.6E-04	2052	UNMIT
E3	DPM	1.6E-04	2052	UNMIT
E4	DPM	1.6E-04	2052	UNMIT
NW1	PM25	1.1E-04	2052	UNMIT
NW2	PM25	1.1E-04	2052	UNMIT
NW3	PM25	1.1E-04	2052	UNMIT
W1	PM25	1.6E-04	2052	UNMIT
W3	PM25	3.2E-05	2052	UNMIT
W4	PM25	3.2E-05	2052	UNMIT
S1	PM25	1.6E-04	2052	UNMIT
S2	PM25	3.2E-05	2052	UNMIT
S3	PM25	1.9E-04	2052	UNMIT
E1	PM25	1.6E-04	2052	UNMIT
E3	PM25	1.6E-04	2052	UNMIT
E4	PM25	1.6E-04	2052	UNMIT
NW1	DPM	1.1E-05	2052	MIT
NW2	DPM	1.1E-05	2052	MIT
NW3	DPM	1.1E-05	2052	MIT
W1	DPM	1.6E-05	2052	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2052	MIT
W4	DPM	3.2E-05	2052	MIT
S1	DPM	1.6E-05	2052	MIT
S2	DPM	3.2E-05	2052	MIT
S3	DPM	4.8E-05	2052	MIT
E1	DPM	1.6E-05	2052	MIT
E3	DPM	1.6E-05	2052	MIT
E4	DPM	1.6E-05	2052	MIT
NW1	PM25	1.1E-05	2052	MIT
NW2	PM25	1.1E-05	2052	MIT
NW3	PM25	1.1E-05	2052	MIT
W1	PM25	1.6E-05	2052	MIT
W3	PM25	3.2E-05	2052	MIT
W4	PM25	3.2E-05	2052	MIT
S1	PM25	1.6E-05	2052	MIT
S2	PM25	3.2E-05	2052	MIT
S3	PM25	4.8E-05	2052	MIT
E1	PM25	1.6E-05	2052	MIT
E3	PM25	1.6E-05	2052	MIT
E4	PM25	1.6E-05	2052	MIT
NW1	DPM	1.1E-04	2053	UNMIT
NW2	DPM	1.1E-04	2053	UNMIT
NW3	DPM	1.1E-04	2053	UNMIT
W1	DPM	1.6E-04	2053	UNMIT
W3	DPM	3.2E-05	2053	UNMIT
W4	DPM	3.2E-05	2053	UNMIT
S1	DPM	1.6E-04	2053	UNMIT
S2	DPM	3.2E-05	2053	UNMIT
S3	DPM	1.9E-04	2053	UNMIT
E1	DPM	1.6E-04	2053	UNMIT
E3	DPM	1.6E-04	2053	UNMIT
E4	DPM	1.6E-04	2053	UNMIT
NW1	PM25	1.1E-04	2053	UNMIT
NW2	PM25	1.1E-04	2053	UNMIT
NW3	PM25	1.1E-04	2053	UNMIT
W1	PM25	1.6E-04	2053	UNMIT
W3	PM25	3.2E-05	2053	UNMIT
W4	PM25	3.2E-05	2053	UNMIT
S1	PM25	1.6E-04	2053	UNMIT
S2	PM25	3.2E-05	2053	UNMIT
S3	PM25	1.9E-04	2053	UNMIT
E1	PM25	1.6E-04	2053	UNMIT
E3	PM25	1.6E-04	2053	UNMIT
E4	PM25	1.6E-04	2053	UNMIT
NW1	DPM	1.1E-05	2053	MIT
NW2	DPM	1.1E-05	2053	MIT
NW3	DPM	1.1E-05	2053	MIT
W1	DPM	1.6E-05	2053	MIT
W3	DPM	3.2E-05	2053	MIT
W4	DPM	3.2E-05	2053	MIT
S1	DPM	1.6E-05	2053	MIT
S2	DPM	3.2E-05	2053	MIT
S3	DPM	4.8E-05	2053	MIT
E1	DPM	1.6E-05	2053	MIT
E3	DPM	1.6E-05	2053	MIT
E4	DPM	1.6E-05	2053	MIT
NW1	PM25	1.1E-05	2053	MIT
NW2	PM25	1.1E-05	2053	MIT
NW3	PM25	1.1E-05	2053	MIT
W1	PM25	1.6E-05	2053	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2053	MIT
W4	PM25	3.2E-05	2053	MIT
S1	PM25	1.6E-05	2053	MIT
S2	PM25	3.2E-05	2053	MIT
S3	PM25	4.8E-05	2053	MIT
E1	PM25	1.6E-05	2053	MIT
E3	PM25	1.6E-05	2053	MIT
E4	PM25	1.6E-05	2053	MIT
NW1	DPM	1.1E-04	2054	UNMIT
NW2	DPM	1.1E-04	2054	UNMIT
NW3	DPM	1.1E-04	2054	UNMIT
W1	DPM	1.6E-04	2054	UNMIT
W3	DPM	3.2E-05	2054	UNMIT
W4	DPM	3.2E-05	2054	UNMIT
S1	DPM	1.6E-04	2054	UNMIT
S2	DPM	3.2E-05	2054	UNMIT
S3	DPM	1.9E-04	2054	UNMIT
E1	DPM	1.6E-04	2054	UNMIT
E3	DPM	1.6E-04	2054	UNMIT
E4	DPM	1.6E-04	2054	UNMIT
NW1	PM25	1.1E-04	2054	UNMIT
NW2	PM25	1.1E-04	2054	UNMIT
NW3	PM25	1.1E-04	2054	UNMIT
W1	PM25	1.6E-04	2054	UNMIT
W3	PM25	3.2E-05	2054	UNMIT
W4	PM25	3.2E-05	2054	UNMIT
S1	PM25	1.6E-04	2054	UNMIT
S2	PM25	3.2E-05	2054	UNMIT
S3	PM25	1.9E-04	2054	UNMIT
E1	PM25	1.6E-04	2054	UNMIT
E3	PM25	1.6E-04	2054	UNMIT
E4	PM25	1.6E-04	2054	UNMIT
NW1	DPM	1.1E-05	2054	MIT
NW2	DPM	1.1E-05	2054	MIT
NW3	DPM	1.1E-05	2054	MIT
W1	DPM	1.6E-05	2054	MIT
W3	DPM	3.2E-05	2054	MIT
W4	DPM	3.2E-05	2054	MIT
S1	DPM	1.6E-05	2054	MIT
S2	DPM	3.2E-05	2054	MIT
S3	DPM	4.8E-05	2054	MIT
E1	DPM	1.6E-05	2054	MIT
E3	DPM	1.6E-05	2054	MIT
E4	DPM	1.6E-05	2054	MIT
NW1	PM25	1.1E-05	2054	MIT
NW2	PM25	1.1E-05	2054	MIT
NW3	PM25	1.1E-05	2054	MIT
W1	PM25	1.6E-05	2054	MIT
W3	PM25	3.2E-05	2054	MIT
W4	PM25	3.2E-05	2054	MIT
S1	PM25	1.6E-05	2054	MIT
S2	PM25	3.2E-05	2054	MIT
S3	PM25	4.8E-05	2054	MIT
E1	PM25	1.6E-05	2054	MIT
E3	PM25	1.6E-05	2054	MIT
E4	PM25	1.6E-05	2054	MIT
NW1	DPM	1.1E-04	2055	UNMIT
NW2	DPM	1.1E-04	2055	UNMIT
NW3	DPM	1.1E-04	2055	UNMIT
W1	DPM	1.6E-04	2055	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2055	UNMIT
W4	DPM	3.2E-05	2055	UNMIT
S1	DPM	1.6E-04	2055	UNMIT
S2	DPM	3.2E-05	2055	UNMIT
S3	DPM	1.9E-04	2055	UNMIT
E1	DPM	1.6E-04	2055	UNMIT
E3	DPM	1.6E-04	2055	UNMIT
E4	DPM	1.6E-04	2055	UNMIT
NW1	PM25	1.1E-04	2055	UNMIT
NW2	PM25	1.1E-04	2055	UNMIT
NW3	PM25	1.1E-04	2055	UNMIT
W1	PM25	1.6E-04	2055	UNMIT
W3	PM25	3.2E-05	2055	UNMIT
W4	PM25	3.2E-05	2055	UNMIT
S1	PM25	1.6E-04	2055	UNMIT
S2	PM25	3.2E-05	2055	UNMIT
S3	PM25	1.9E-04	2055	UNMIT
E1	PM25	1.6E-04	2055	UNMIT
E3	PM25	1.6E-04	2055	UNMIT
E4	PM25	1.6E-04	2055	UNMIT
NW1	DPM	1.1E-05	2055	MIT
NW2	DPM	1.1E-05	2055	MIT
NW3	DPM	1.1E-05	2055	MIT
W1	DPM	1.6E-05	2055	MIT
W3	DPM	3.2E-05	2055	MIT
W4	DPM	3.2E-05	2055	MIT
S1	DPM	1.6E-05	2055	MIT
S2	DPM	3.2E-05	2055	MIT
S3	DPM	4.8E-05	2055	MIT
E1	DPM	1.6E-05	2055	MIT
E3	DPM	1.6E-05	2055	MIT
E4	DPM	1.6E-05	2055	MIT
NW1	PM25	1.1E-05	2055	MIT
NW2	PM25	1.1E-05	2055	MIT
NW3	PM25	1.1E-05	2055	MIT
W1	PM25	1.6E-05	2055	MIT
W3	PM25	3.2E-05	2055	MIT
W4	PM25	3.2E-05	2055	MIT
S1	PM25	1.6E-05	2055	MIT
S2	PM25	3.2E-05	2055	MIT
S3	PM25	4.8E-05	2055	MIT
E1	PM25	1.6E-05	2055	MIT
E3	PM25	1.6E-05	2055	MIT
E4	PM25	1.6E-05	2055	MIT
NW1	DPM	1.1E-04	2056	UNMIT
NW2	DPM	1.1E-04	2056	UNMIT
NW3	DPM	1.1E-04	2056	UNMIT
W1	DPM	1.6E-04	2056	UNMIT
W3	DPM	3.2E-05	2056	UNMIT
W4	DPM	3.2E-05	2056	UNMIT
S1	DPM	1.6E-04	2056	UNMIT
S2	DPM	3.2E-05	2056	UNMIT
S3	DPM	1.9E-04	2056	UNMIT
E1	DPM	1.6E-04	2056	UNMIT
E3	DPM	1.6E-04	2056	UNMIT
E4	DPM	1.6E-04	2056	UNMIT
NW1	PM25	1.1E-04	2056	UNMIT
NW2	PM25	1.1E-04	2056	UNMIT
NW3	PM25	1.1E-04	2056	UNMIT
W1	PM25	1.6E-04	2056	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2056	UNMIT
W4	PM25	3.2E-05	2056	UNMIT
S1	PM25	1.6E-04	2056	UNMIT
S2	PM25	3.2E-05	2056	UNMIT
S3	PM25	1.9E-04	2056	UNMIT
E1	PM25	1.6E-04	2056	UNMIT
E3	PM25	1.6E-04	2056	UNMIT
E4	PM25	1.6E-04	2056	UNMIT
NW1	DPM	1.1E-05	2056	MIT
NW2	DPM	1.1E-05	2056	MIT
NW3	DPM	1.1E-05	2056	MIT
W1	DPM	1.6E-05	2056	MIT
W3	DPM	3.2E-05	2056	MIT
W4	DPM	3.2E-05	2056	MIT
S1	DPM	1.6E-05	2056	MIT
S2	DPM	3.2E-05	2056	MIT
S3	DPM	4.8E-05	2056	MIT
E1	DPM	1.6E-05	2056	MIT
E3	DPM	1.6E-05	2056	MIT
E4	DPM	1.6E-05	2056	MIT
NW1	PM25	1.1E-05	2056	MIT
NW2	PM25	1.1E-05	2056	MIT
NW3	PM25	1.1E-05	2056	MIT
W1	PM25	1.6E-05	2056	MIT
W3	PM25	3.2E-05	2056	MIT
W4	PM25	3.2E-05	2056	MIT
S1	PM25	1.6E-05	2056	MIT
S2	PM25	3.2E-05	2056	MIT
S3	PM25	4.8E-05	2056	MIT
E1	PM25	1.6E-05	2056	MIT
E3	PM25	1.6E-05	2056	MIT
E4	PM25	1.6E-05	2056	MIT
NW1	DPM	1.1E-04	2057	UNMIT
NW2	DPM	1.1E-04	2057	UNMIT
NW3	DPM	1.1E-04	2057	UNMIT
W1	DPM	1.6E-04	2057	UNMIT
W3	DPM	3.2E-05	2057	UNMIT
W4	DPM	3.2E-05	2057	UNMIT
S1	DPM	1.6E-04	2057	UNMIT
S2	DPM	3.2E-05	2057	UNMIT
S3	DPM	1.9E-04	2057	UNMIT
E1	DPM	1.6E-04	2057	UNMIT
E3	DPM	1.6E-04	2057	UNMIT
E4	DPM	1.6E-04	2057	UNMIT
NW1	PM25	1.1E-04	2057	UNMIT
NW2	PM25	1.1E-04	2057	UNMIT
NW3	PM25	1.1E-04	2057	UNMIT
W1	PM25	1.6E-04	2057	UNMIT
W3	PM25	3.2E-05	2057	UNMIT
W4	PM25	3.2E-05	2057	UNMIT
S1	PM25	1.6E-04	2057	UNMIT
S2	PM25	3.2E-05	2057	UNMIT
S3	PM25	1.9E-04	2057	UNMIT
E1	PM25	1.6E-04	2057	UNMIT
E3	PM25	1.6E-04	2057	UNMIT
E4	PM25	1.6E-04	2057	UNMIT
NW1	DPM	1.1E-05	2057	MIT
NW2	DPM	1.1E-05	2057	MIT
NW3	DPM	1.1E-05	2057	MIT
W1	DPM	1.6E-05	2057	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2057	MIT
W4	DPM	3.2E-05	2057	MIT
S1	DPM	1.6E-05	2057	MIT
S2	DPM	3.2E-05	2057	MIT
S3	DPM	4.8E-05	2057	MIT
E1	DPM	1.6E-05	2057	MIT
E3	DPM	1.6E-05	2057	MIT
E4	DPM	1.6E-05	2057	MIT
NW1	PM25	1.1E-05	2057	MIT
NW2	PM25	1.1E-05	2057	MIT
NW3	PM25	1.1E-05	2057	MIT
W1	PM25	1.6E-05	2057	MIT
W3	PM25	3.2E-05	2057	MIT
W4	PM25	3.2E-05	2057	MIT
S1	PM25	1.6E-05	2057	MIT
S2	PM25	3.2E-05	2057	MIT
S3	PM25	4.8E-05	2057	MIT
E1	PM25	1.6E-05	2057	MIT
E3	PM25	1.6E-05	2057	MIT
E4	PM25	1.6E-05	2057	MIT
NW1	DPM	1.1E-04	2058	UNMIT
NW2	DPM	1.1E-04	2058	UNMIT
NW3	DPM	1.1E-04	2058	UNMIT
W1	DPM	1.6E-04	2058	UNMIT
W3	DPM	3.2E-05	2058	UNMIT
W4	DPM	3.2E-05	2058	UNMIT
S1	DPM	1.6E-04	2058	UNMIT
S2	DPM	3.2E-05	2058	UNMIT
S3	DPM	1.9E-04	2058	UNMIT
E1	DPM	1.6E-04	2058	UNMIT
E3	DPM	1.6E-04	2058	UNMIT
E4	DPM	1.6E-04	2058	UNMIT
NW1	PM25	1.1E-04	2058	UNMIT
NW2	PM25	1.1E-04	2058	UNMIT
NW3	PM25	1.1E-04	2058	UNMIT
W1	PM25	1.6E-04	2058	UNMIT
W3	PM25	3.2E-05	2058	UNMIT
W4	PM25	3.2E-05	2058	UNMIT
S1	PM25	1.6E-04	2058	UNMIT
S2	PM25	3.2E-05	2058	UNMIT
S3	PM25	1.9E-04	2058	UNMIT
E1	PM25	1.6E-04	2058	UNMIT
E3	PM25	1.6E-04	2058	UNMIT
E4	PM25	1.6E-04	2058	UNMIT
NW1	DPM	1.1E-05	2058	MIT
NW2	DPM	1.1E-05	2058	MIT
NW3	DPM	1.1E-05	2058	MIT
W1	DPM	1.6E-05	2058	MIT
W3	DPM	3.2E-05	2058	MIT
W4	DPM	3.2E-05	2058	MIT
S1	DPM	1.6E-05	2058	MIT
S2	DPM	3.2E-05	2058	MIT
S3	DPM	4.8E-05	2058	MIT
E1	DPM	1.6E-05	2058	MIT
E3	DPM	1.6E-05	2058	MIT
E4	DPM	1.6E-05	2058	MIT
NW1	PM25	1.1E-05	2058	MIT
NW2	PM25	1.1E-05	2058	MIT
NW3	PM25	1.1E-05	2058	MIT
W1	PM25	1.6E-05	2058	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2058	MIT
W4	PM25	3.2E-05	2058	MIT
S1	PM25	1.6E-05	2058	MIT
S2	PM25	3.2E-05	2058	MIT
S3	PM25	4.8E-05	2058	MIT
E1	PM25	1.6E-05	2058	MIT
E3	PM25	1.6E-05	2058	MIT
E4	PM25	1.6E-05	2058	MIT
NW1	DPM	1.1E-04	2059	UNMIT
NW2	DPM	1.1E-04	2059	UNMIT
NW3	DPM	1.1E-04	2059	UNMIT
W1	DPM	1.6E-04	2059	UNMIT
W3	DPM	3.2E-05	2059	UNMIT
W4	DPM	3.2E-05	2059	UNMIT
S1	DPM	1.6E-04	2059	UNMIT
S2	DPM	3.2E-05	2059	UNMIT
S3	DPM	1.9E-04	2059	UNMIT
E1	DPM	1.6E-04	2059	UNMIT
E3	DPM	1.6E-04	2059	UNMIT
E4	DPM	1.6E-04	2059	UNMIT
NW1	PM25	1.1E-04	2059	UNMIT
NW2	PM25	1.1E-04	2059	UNMIT
NW3	PM25	1.1E-04	2059	UNMIT
W1	PM25	1.6E-04	2059	UNMIT
W3	PM25	3.2E-05	2059	UNMIT
W4	PM25	3.2E-05	2059	UNMIT
S1	PM25	1.6E-04	2059	UNMIT
S2	PM25	3.2E-05	2059	UNMIT
S3	PM25	1.9E-04	2059	UNMIT
E1	PM25	1.6E-04	2059	UNMIT
E3	PM25	1.6E-04	2059	UNMIT
E4	PM25	1.6E-04	2059	UNMIT
NW1	DPM	1.1E-05	2059	MIT
NW2	DPM	1.1E-05	2059	MIT
NW3	DPM	1.1E-05	2059	MIT
W1	DPM	1.6E-05	2059	MIT
W3	DPM	3.2E-05	2059	MIT
W4	DPM	3.2E-05	2059	MIT
S1	DPM	1.6E-05	2059	MIT
S2	DPM	3.2E-05	2059	MIT
S3	DPM	4.8E-05	2059	MIT
E1	DPM	1.6E-05	2059	MIT
E3	DPM	1.6E-05	2059	MIT
E4	DPM	1.6E-05	2059	MIT
NW1	PM25	1.1E-05	2059	MIT
NW2	PM25	1.1E-05	2059	MIT
NW3	PM25	1.1E-05	2059	MIT
W1	PM25	1.6E-05	2059	MIT
W3	PM25	3.2E-05	2059	MIT
W4	PM25	3.2E-05	2059	MIT
S1	PM25	1.6E-05	2059	MIT
S2	PM25	3.2E-05	2059	MIT
S3	PM25	4.8E-05	2059	MIT
E1	PM25	1.6E-05	2059	MIT
E3	PM25	1.6E-05	2059	MIT
E4	PM25	1.6E-05	2059	MIT
NW1	DPM	1.1E-04	2060	UNMIT
NW2	DPM	1.1E-04	2060	UNMIT
NW3	DPM	1.1E-04	2060	UNMIT
W1	DPM	1.6E-04	2060	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2060	UNMIT
W4	DPM	3.2E-05	2060	UNMIT
S1	DPM	1.6E-04	2060	UNMIT
S2	DPM	3.2E-05	2060	UNMIT
S3	DPM	1.9E-04	2060	UNMIT
E1	DPM	1.6E-04	2060	UNMIT
E3	DPM	1.6E-04	2060	UNMIT
E4	DPM	1.6E-04	2060	UNMIT
NW1	PM25	1.1E-04	2060	UNMIT
NW2	PM25	1.1E-04	2060	UNMIT
NW3	PM25	1.1E-04	2060	UNMIT
W1	PM25	1.6E-04	2060	UNMIT
W3	PM25	3.2E-05	2060	UNMIT
W4	PM25	3.2E-05	2060	UNMIT
S1	PM25	1.6E-04	2060	UNMIT
S2	PM25	3.2E-05	2060	UNMIT
S3	PM25	1.9E-04	2060	UNMIT
E1	PM25	1.6E-04	2060	UNMIT
E3	PM25	1.6E-04	2060	UNMIT
E4	PM25	1.6E-04	2060	UNMIT
NW1	DPM	1.1E-05	2060	MIT
NW2	DPM	1.1E-05	2060	MIT
NW3	DPM	1.1E-05	2060	MIT
W1	DPM	1.6E-05	2060	MIT
W3	DPM	3.2E-05	2060	MIT
W4	DPM	3.2E-05	2060	MIT
S1	DPM	1.6E-05	2060	MIT
S2	DPM	3.2E-05	2060	MIT
S3	DPM	4.8E-05	2060	MIT
E1	DPM	1.6E-05	2060	MIT
E3	DPM	1.6E-05	2060	MIT
E4	DPM	1.6E-05	2060	MIT
NW1	PM25	1.1E-05	2060	MIT
NW2	PM25	1.1E-05	2060	MIT
NW3	PM25	1.1E-05	2060	MIT
W1	PM25	1.6E-05	2060	MIT
W3	PM25	3.2E-05	2060	MIT
W4	PM25	3.2E-05	2060	MIT
S1	PM25	1.6E-05	2060	MIT
S2	PM25	3.2E-05	2060	MIT
S3	PM25	4.8E-05	2060	MIT
E1	PM25	1.6E-05	2060	MIT
E3	PM25	1.6E-05	2060	MIT
E4	PM25	1.6E-05	2060	MIT
NW1	DPM	1.1E-04	2061	UNMIT
NW2	DPM	1.1E-04	2061	UNMIT
NW3	DPM	1.1E-04	2061	UNMIT
W1	DPM	1.6E-04	2061	UNMIT
W3	DPM	3.2E-05	2061	UNMIT
W4	DPM	3.2E-05	2061	UNMIT
S1	DPM	1.6E-04	2061	UNMIT
S2	DPM	3.2E-05	2061	UNMIT
S3	DPM	1.9E-04	2061	UNMIT
E1	DPM	1.6E-04	2061	UNMIT
E3	DPM	1.6E-04	2061	UNMIT
E4	DPM	1.6E-04	2061	UNMIT
NW1	PM25	1.1E-04	2061	UNMIT
NW2	PM25	1.1E-04	2061	UNMIT
NW3	PM25	1.1E-04	2061	UNMIT
W1	PM25	1.6E-04	2061	UNMIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	PM25	3.2E-05	2061	UNMIT
W4	PM25	3.2E-05	2061	UNMIT
S1	PM25	1.6E-04	2061	UNMIT
S2	PM25	3.2E-05	2061	UNMIT
S3	PM25	1.9E-04	2061	UNMIT
E1	PM25	1.6E-04	2061	UNMIT
E3	PM25	1.6E-04	2061	UNMIT
E4	PM25	1.6E-04	2061	UNMIT
NW1	DPM	1.1E-05	2061	MIT
NW2	DPM	1.1E-05	2061	MIT
NW3	DPM	1.1E-05	2061	MIT
W1	DPM	1.6E-05	2061	MIT
W3	DPM	3.2E-05	2061	MIT
W4	DPM	3.2E-05	2061	MIT
S1	DPM	1.6E-05	2061	MIT
S2	DPM	3.2E-05	2061	MIT
S3	DPM	4.8E-05	2061	MIT
E1	DPM	1.6E-05	2061	MIT
E3	DPM	1.6E-05	2061	MIT
E4	DPM	1.6E-05	2061	MIT
NW1	PM25	1.1E-05	2061	MIT
NW2	PM25	1.1E-05	2061	MIT
NW3	PM25	1.1E-05	2061	MIT
W1	PM25	1.6E-05	2061	MIT
W3	PM25	3.2E-05	2061	MIT
W4	PM25	3.2E-05	2061	MIT
S1	PM25	1.6E-05	2061	MIT
S2	PM25	3.2E-05	2061	MIT
S3	PM25	4.8E-05	2061	MIT
E1	PM25	1.6E-05	2061	MIT
E3	PM25	1.6E-05	2061	MIT
E4	PM25	1.6E-05	2061	MIT
NW1	DPM	1.1E-04	2062	UNMIT
NW2	DPM	1.1E-04	2062	UNMIT
NW3	DPM	1.1E-04	2062	UNMIT
W1	DPM	1.6E-04	2062	UNMIT
W3	DPM	3.2E-05	2062	UNMIT
W4	DPM	3.2E-05	2062	UNMIT
S1	DPM	1.6E-04	2062	UNMIT
S2	DPM	3.2E-05	2062	UNMIT
S3	DPM	1.9E-04	2062	UNMIT
E1	DPM	1.6E-04	2062	UNMIT
E3	DPM	1.6E-04	2062	UNMIT
E4	DPM	1.6E-04	2062	UNMIT
NW1	PM25	1.1E-04	2062	UNMIT
NW2	PM25	1.1E-04	2062	UNMIT
NW3	PM25	1.1E-04	2062	UNMIT
W1	PM25	1.6E-04	2062	UNMIT
W3	PM25	3.2E-05	2062	UNMIT
W4	PM25	3.2E-05	2062	UNMIT
S1	PM25	1.6E-04	2062	UNMIT
S2	PM25	3.2E-05	2062	UNMIT
S3	PM25	1.9E-04	2062	UNMIT
E1	PM25	1.6E-04	2062	UNMIT
E3	PM25	1.6E-04	2062	UNMIT
E4	PM25	1.6E-04	2062	UNMIT
NW1	DPM	1.1E-05	2062	MIT
NW2	DPM	1.1E-05	2062	MIT
NW3	DPM	1.1E-05	2062	MIT
W1	DPM	1.6E-05	2062	MIT

Modeling Revised Variant Generator Emissions

SOURCE GROUP	POLLUTANT	EMISSIONS_G_S	YEAR	CONTROL SCENARIO
W3	DPM	3.2E-05	2062	MIT
W4	DPM	3.2E-05	2062	MIT
S1	DPM	1.6E-05	2062	MIT
S2	DPM	3.2E-05	2062	MIT
S3	DPM	4.8E-05	2062	MIT
E1	DPM	1.6E-05	2062	MIT
E3	DPM	1.6E-05	2062	MIT
E4	DPM	1.6E-05	2062	MIT
NW1	PM25	1.1E-05	2062	MIT
NW2	PM25	1.1E-05	2062	MIT
NW3	PM25	1.1E-05	2062	MIT
W1	PM25	1.6E-05	2062	MIT
W3	PM25	3.2E-05	2062	MIT
W4	PM25	3.2E-05	2062	MIT
S1	PM25	1.6E-05	2062	MIT
S2	PM25	3.2E-05	2062	MIT
S3	PM25	4.8E-05	2062	MIT
E1	PM25	1.6E-05	2062	MIT
E3	PM25	1.6E-05	2062	MIT
E4	PM25	1.6E-05	2062	MIT

APPENDIX D
TRANSPORTATION DATA

Table 1
Trips, VMT and Traffic Volumes
Stonestone Redevelopment
San Francisco, CA

Instructions
Please provide information on trip rates and distances travelled by land use and time period.

2/14/2023: Kittelson has updated ONLY HIGHLIGHTED CELLS. Assume the other quantities and rates are unchanged. Roadway Volumes TBD

Land Use	Fleet Type / Land Use		Unit	Land Use Amounts used for Trips and VMT	Daily Project Trip Rates		Daily Project Vehicle Miles Traveled		If known, please provide:	
					Weekday	Weekend	Weekday	Weekend	Percent Passenger Vehicles	Percent Trucks
					Trips		Miles			
Existing Conditions	Retail	Shopping Center	per 1,000 s.f.		Not estimated	Not estimated			not estimated	not estimated
Proposed Project	Residential	Mid-rise Apartments	per d.u.	3491	1.52	Not estimated	12.5	not estimated	not estimated	not estimated
	Retail	Retail Stores	per 1,000 s.f.	160	37.23	Not estimated	7.6	not estimated	not estimated	not estimated
	Commercial	Office, Medical, & R&D Space	per 1,000 s.f.	96	10.01	Not estimated	10.2	not estimated	not estimated	not estimated
	Recreational	Parks, Plazas, and Open Space	per acre		-	Not estimated	not estimated	not estimated	not estimated	not estimated
	Hotel		per room	0	-	Not estimated	not estimated	not estimated	not estimated	not estimated
	Institutional (incl. childcare)		per 1,000 s.f.	53	33.02	Not estimated	not estimated	not estimated	not estimated	not estimated
	Instutional (excl. childcare)		per 1,000 s.f.	38	37.24	Not estimated	Not estimated	Not estimated	Not estimated	Not estimated
	Childcare		per 1,000 s.f.	15	22.33	Not estimated	not estimated	not estimated	not estimated	not estimated
	Religious Institution		per 1,000 s.f.	0	-	Not estimated	not estimated	not estimated	not estimated	not estimated

Instructions
Please provide segment limits for each link location with net new traffic volumes for the project. If available, please provide the fleet make-up of the traffic. If this is not analyzed previously, we will use default information. Please add additional link locations and rows

Roadway	Segment Limits[1]		Traffic Volumes (Vehicles/day)	Percent Passenger Vehicles, if known	Percent Trucks, if known	Vehicles, Weekday PM Peak Hour
Eucalyptus	Middlefield	25th	0			0
Eucalyptus	25th	19th	0			0
Eucalyptus	19th	Junipero Serra Blvd	2300			226
19th	Sloat	Eucalyptus	2789			274
19th	Eucalyptus	Buckingham	2256			222
19th	Buckingham	Holloway	1967			188
19th	Holloway	Junipero Serra Blvd	1967			188
Holloway	Font	19th	0			0
Holloway	19th	Junipero Serra Blvd	0			0
Winston	LMB	Buckingham	2900			290
Winston	Buckingham	19th	2478			247
Winston	19th	Junipero Serra Blvd	2245			233
Buckingham	Winston	19th	4011			395
Lake Merced Blvd	Sunset	Winston	1256			126
20th	Ocean	Eucalyptus	411			43
Lake Merced	Winston	Font	1656			164
Sunset	Lake Merced	Sloat	1267			126
Lake Merced	Sunset	Skyline	0			0
Lake Merced	Font	Higuera	1656			164
Junipero Serra Blvd	19th	Font	2811			276
19th	Santiago	Taraval	2400			238
19th	Ulloa	Taraval	2400			238
19th	Vicente	Ulloa	2400			238
19th	Wawona	Vicente	2400			238
19th	Sloat	Wawona	2411			238
Sloat	19th	Junipero Serra Blvd	0			0
Portola	15th	Sloat	1388			139
Junipero Serra Blvd	Eucalyptus	Sloat	1388			139
Ocean	19th	Aptos	3100			311
Ocean	Aptos	Westgate	3100			311

Notes
[1] Segment limits are the cross streets on each link. Please add additional rows to include all necessary segment limits.

Instructions
Please provide any information on diurnal patterns of net new traffic. If unknown, we can use default information.

Diurnal Patterns	
Weekday	1164
Weekend	802

Kittelson notes in red.
Total external vehicle trips in weekday p.m. peak hour
Total external vehicle trips in Sunday p.m. peak hour
The following ratio is ONLY applicable for the peak patterns, and we have not estimated the weekend peak in relation to is daily. We advise you may use assumptions for diurnal patterns if you need them on a daily basis.

RAMBOLL

ATTACHMENT F

CEQA Air Quality and Health Risk Assessment Methodology

Prepared for
Josh Pollak
San Francisco Planning Department
49 S Van Ness Ave Suite 1400
San Francisco, CA 94103

Prepared by
Ramboll US Consulting, Inc.
San Francisco, California

Project Number
1690018084-001

Date
May 2022

CEQA AIR QUALITY AND HEALTH RISK ASSESSMENT METHODOLOGY

STONESTOWN DEVELOPMENT

SAN FRANCISCO, CALIFORNIA

RAMBOLL

CONTENTS

1. INTRODUCTION AND PROJECT DESCRIPTION 1
1.1 Project Description 1
1.1.1 Project Variant 1
1.2 Objective and Methodology 2
1.3 Document Organization 3

2. PROJECT EMISSIONS ESTIMATION 4
2.1 Construction Sources 4
2.1.1 Off-road Equipment 4
2.1.2 Construction On-road Mobile Sources 4
2.2 Operational Sources 5
2.2.1 Operational On-road Mobile Sources 5
2.2.2 Operational On-Site Generators 6
2.2.3 Architectural Coating 6
2.2.4 Consumer Products 7
2.2.5 Energy Use 7
2.2.6 Landscaping Equipment 7
2.3 Combined Construction and Operational Emissions 7
2.4 Control Measures 8

3. ESTIMATED AIR CONCENTRATIONS 9
3.1 Chemical Selection 9
3.2 Sources 9
3.2.1 AERMOD Modeling 9
3.2.2 Meteorological Data 9
3.2.3 Terrain and Land Use Considerations 10
3.2.4 Emission Rates 10
3.2.5 Source Parameters 11
3.2.6 Receptors 11

4. RISK CHARACTERIZATION METHODS 12
4.1 Project Sources Evaluated 12
4.1.1 Exposure Assessment 12
4.1.2 Toxicity Assessment 14
4.1.3 Age Sensitivity Factors 14
4.2 Risk Characterization 15
4.2.1 Estimation of Cancer Risks 15
4.2.2 Estimation of Project Health Risks 15
4.2.3 Estimation of Existing Plus Project Health Risks 15

5. CUMULATIVE ANALYSIS 16

6. REFERENCES 17

TABLES

Table 1: Land Use Descriptions

Table 2: Emissions Calculation Methodology

Table 3: Modeling Parameters

Table 4: Exposure Parameters

Table 5: Toxicity Values

Table 6: Age Sensitivity Factors

FIGURES

Figure 1: Construction Schedule

ACRONYMS AND ABBREVIATIONS

AERMOD	USEPA's Atmospheric Dispersion Modeling System
APEZ	Air Pollution Exposure Zone
ARB	(California) Air Resources Board
ASF	Age Sensitivity Factor
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
Cal/EPA	California Environmental Protection Agency
CalEEMod®	California Emissions Estimator Model
CAP	Criteria Air Pollutant
CEQA	California Environmental Quality Act
CPF	Cancer Potency Factor
Citywide HRA	San Francisco Citywide Health Risk Analysis Database
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
ESA	Environmental Science Associates
g/s	gram per second
HHDT	Heavy-Heavy Duty Trucks
HI	Hazard Index
HQ	Hazard Quotient
HRA	Health Risk Assessment
LDA	Light-Duty Auto
LDT1	Light-Duty Truck 1
MEIR	Maximally Exposed Individual Receptor
mg/kg-day	milligram per kilogram per day
MHDT	Medium-Heavy Duty Trucks
OEHHA	Office Of Environmental Health Hazard Assessment
$PM_{2.5}$	Fine Particulate Matter Less Than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Particulate Matter with An Aerodynamic Diameter Less Than 10 Micrometers
Ramboll	Ramboll US Consulting, Inc.
RELs	Reference Exposure Levels
ROG	Reactive Organic Gases
SF DPH	San Francisco Department of Public Health
Planning Department	San Francisco Planning Department Environmental Planning Division
TAC	Toxic Air Contaminant
TOG	Total Organic Gases
$\mu g/m^3$	microgram per cubic meter

USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
χ/Q	"chi over q"

1. INTRODUCTION AND PROJECT DESCRIPTION

At the request of Environmental Science Associates (ESA), Ramboll US Consulting, Inc. (Ramboll) will conduct a California Environmental Quality Act (CEQA) analysis of criteria air pollutants (CAPs) and precursors and local air quality and health impacts associated with the construction and operation of the Stonestown Development Project in San Francisco (referred to hereafter as "Proposed Project" or "Project") on sensitive receptors. This emissions and Health Risk Assessment (HRA) methodology describes the scope and methodology for evaluation of air quality and health impacts from construction and operational sources and cumulative off-site sources at on-site and nearby off-site sensitive receptors. This analysis will be performed to support the Project's CEQA documentation at the request of the San Francisco Planning Department's Environmental Planning Division (planning department).

1.1 Project Description

The Project site is 40.9 acres of privately-owned land and includes the existing Stonestown Galleria, a multi-level indoor shopping mall currently comprised of 775,000 square feet of retail space surrounded primarily by surface parking lots on the western side of San Francisco. The Project Sponsor proposes to renovate the parking lots and some existing development into a master-planned, multi-phased mixed residential, retail, and commercial office community. The existing mall would remain, with changes to the façade, entrances and exits.

The Proposed Project would replace the surface parking lots and 348,455 square feet of existing development, including a structured parking garage, a combined total of 27 acres of the total Project site with approximately 4,700,000 gross square-feet of new building area. This includes approximately up to 2,930 residential dwelling units, up to 4,250 parking spaces, approximately 160,000 square feet of retail in addition to the existing shopping center, up to approximately 200,000 square feet of neighborhood-serving offices and commercial, up to 200 room hotel, and approximately 53,000 square feet of cultural, institutional, and educational uses. In addition, the Project would include six acres of new landscaped parks, plazas, and open space. The Project also proposes to modernize and reconfigure parking to improve efficiency and convenience, including expanding the existing underground garage west, adding new retail parking adjacent to retailers, implementing a clear wayfinding system with automated sensors and parking smart apps, and increasing EV charging stations. The Proposed Project would include transportation and circulation improvements and utilities infrastructure improvements. The roadway network changes would be designed to be accessible for all modes of transportation, including vehicular, bicycle, and pedestrian improvements.

The Project would be built in six overlapping phases, as shown in **Table A** below and **Table 1** attached. The estimated construction schedule and phasing are shown in **Figure 1a**. If phasing or massing change, a revised analysis may be necessary. A childcare facility would be included in the Cultural, Institutional, and Educational space. The Project would also include site circulation improvements, which would be considered in the construction assessment.

1.1.1 Project Variant

There will be one variant to the Proposed Project which would include the development of the Authentic Church parcel. Under the Authentic Church Variant, the Authentic Church parcel would also be developed with an additional 150 residential units; up to approximately 10,000 square feet of cultural, institutional, and educational uses; and 200 parking spaces. This additional construction would occur in Phase 4. The estimated construction schedule and phasing for the Authentic Church Variant are shown in **Figure 1b**. If phasing or massing change, a revised analysis may be necessary.

Table A: Estimated Land Use Descriptions

Land Use Type	Estimated Land Use Quantity							
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Total	Units
Mid-rise Apartments	473	831	465	413	557	190	2,930	DU
Retail Stores	8.0	30	17	52	32	0	160	ksf
Office, Medical, & R&D Space	0	0	56	45	90	0	200	ksf
Hotel	0	0	0	200	0	0	200	rooms
Cultural, Institutional, and Educational	13	0	12	28	0	0	53	ksf
Parks, Plazas, and Open Space	1.0	1.4	1.0	0.70	1.0	0.90	6.0	acres
Parking Lot	1,030	590	660	720	630	340	4,250	spaces

1.2 Objective and Methodology

The purpose of the air quality analysis is to assess potential CAP emissions and health risks and hazards that would result from the construction and operation of the proposed Project consistent with guidelines and methodologies from air quality agencies, specifically, the San Francisco Planning Department, the Bay Area Air Quality Management District (BAAQMD), the California Air Resources Board (ARB), the California Office of Environmental Health Hazard Assessment (OEHHA), and the US Environmental Protection Agency (USEPA). The BAAQMD is in the process of updating their CEQA Guidelines. When released, Ramboll will review these updates and work with the planning department to determine how these should be incorporated into the analysis.

Consistent with the requirements of the planning department, which draw on the guidelines and recommended methods from these agencies, the HRA will evaluate the estimated incremental increase in cancer risk from toxic air contaminants (TACs), including diesel particulate matter (DPM) and gasoline speciated total organic gases (TOG), as well as fine PM concentrations (specifically particulate matter less than 2.5 microns in aerodynamic diameter [$PM_{2.5}$]). The regional criteria air pollutant analysis will qualitatively describe potential short-term construction impacts and long-term operational impacts that could be generated by the proposed Project. The construction and operational emission sources included in the HRA for the Project include diesel-powered construction equipment, on-road haul trucks, and Project-related traffic, including diesel trucks and passenger vehicles. The BAAQMD is in the process of updating the recommended greenhouse gas thresholds and guidance for health risk assessments. As these thresholds and guidance are released, Ramboll will evaluate their applicability to the Project and work with the planning department to determine if updates are appropriate for this scope.

In addition to estimating the air quality and health risk impacts for the Project, Ramboll will conduct an existing plus project HRA of cancer risk and $PM_{2.5}$ concentrations at on- and off-site receptors resulting from other sources of stationary, area, and mobile emissions as calculated in the San

Francisco Citywide Health Risk Analysis database (Citywide HRA) in addition to health impacts from the Project construction and operation on both off-site and on-site receptors. Ramboll will use the Citywide HRA database to determine the existing cancer risk and $PM_{2.5}$ concentrations at on- and off-site sensitive receptors within 1-kilometer of the Project and will add Project operational impacts to determine the cumulative impact. Additionally, impacts from construction projects and new stationary sources within the vicinity of the Project may not be included in the Citywide HRA and will be estimated in a cumulative analysis.

The results of the analysis will be documented in a summary results memo to be presented to ESA and the planning department before being incorporated into the Draft Environmental Impact Report (EIR) as applicable chapter text and technical appendices.

1.3 Document Organization

This scope of work is divided into seven sections as follows:

Section 1.0 – Introduction and Project Description: describes the purpose and scope of the air quality analysis, the objectives and methodology to be used, and outlines the document organization;

Section 2.0 – Emission Estimation Methods: describes the methods that will be used to estimate CAP and TAC emissions from various sources for the Project;

Section 3.0 – Estimated Air Concentrations Methods: discusses the air dispersion modeling, the selection of the dispersion models, the data to be used in the dispersion models (*e.g.*, terrain, meteorology, source characterization), and the identification of receptor locations evaluated in the HRA;

Section 4.0 – Risk Characterization Methods: provides an overview of the methodology for conducting the HRA;

Section 5.0 – Cumulative Analysis Methods: summarizes the approach to be used in the HRA cumulative analysis.

Section 6.0 – References: includes a listing of all references cited in this report.

2. PROJECT EMISSIONS ESTIMATION

In order to determine the incremental CAP and TAC emissions associated with construction and operation of the Project, Ramboll will estimate the baseline operational CAP emissions associated with the project site and the buildout of the Proposed Project. Methodologies to be used to calculate CAP and TAC emissions are summarized below.

2.1 Construction Sources

Construction emission calculation methodologies cover off-road equipment (primarily diesel-fueled) and on-road vehicles (both diesel- and gasoline-fueled).

Ramboll will rely on project-specific data provided by the Project Sponsor, including a detailed construction equipment list, a detailed construction schedule, including phasing, and site map. Where project-specific construction data is not available, the equipment list and/or activity (horsepower-hours) will be estimated using California Emissions Estimator Model (CalEEMod®) defaults based on building size and site acreage. For purposes of this analysis, Ramboll will assume that all construction off-road equipment is diesel powered, and that all off-road equipment emissions of PM with an aerodynamic diameter less than 10 microns (PM_{10}) are DPM, which is a TAC. Emissions will be estimated using CalEEMod® or equivalent methods, as summarized in **Table 2**.

Construction emissions will be converted from annual emissions to average daily emissions assuming 260 work days per year. However, this is a conservative assumption as there will be some construction activity during weekends.

Ramboll will analyze the construction associated with the Proposed Project and the Authentic Church Variant separately based on information provided by the Project Sponsor.

2.1.1 Off-road Equipment

For diesel-powered off-road construction equipment, Ramboll will use CalEEMod® and methodologies consistent with CalEEMod® to estimate emissions. The CalEEMod® emissions methodology for off-road construction equipment relies on the ARB In-Use Off-Road Equipment model (OFFROAD2011), which incorporates statewide survey data to develop emission factors based on the fleet average for each year of construction.[1] The OFFROAD2011 model also identifies average horsepower and load factor for each type of equipment; Ramboll will request the equipment horsepower and load factors from the Project Sponsor, however, if this information is not available, default data in OFFROAD2011, which are included in CalEEMod®, can be used. The methodology to be used to calculate emissions from off-road equipment is presented in **Table 2**.

Emissions without control measures will be calculated assuming fleet average equipment, meaning the emission factors used reflect the fleet predicted to be in use in the OFFROAD2011 model.

2.1.2 Construction On-road Mobile Sources

On-road mobile sources include vehicle trips associated with workers, vendors, and demolition and excavation hauling trips.

The emission factors for running emissions of criteria pollutants in CalEEMod® are from EMFAC2017, the ARB Emission Factors model for on-road emissions. Since the last release of CalEEMod®, ARB

[1] Although ARB has released an updated model as OFFROAD2017, the newer version does not generate "default" fleet data the way OFFROAD2011 does. As such, OFFROAD2011 is still used in CalEEMod® version 2020.4.0. Until ARB updates default fleet mix data, OFFROAD2011 will continue to be used.

released a new version of its model for on-road emissions, EMFAC2021, which will be used in this assessment. Emission factors vary by vehicle type, fuel type, and calendar year. Consistent with CalEEMod® methodology, Ramboll will assume that construction worker trips are 50% Light-Duty Auto (LDA), 25% Light-Duty Truck 1 (LDT1) and 25% LDT2 vehicle classes, vendor trips are 100% diesel Medium-Heavy Duty Trucks (MHDT), and haul trips are 100% diesel Heavy-Heavy Duty Trucks (HHDT) unless additional information is known. EMFAC2021 incorporates the Pavley Clean Car Standards and the Advanced Clean Cars program.

For HRA purposes, Ramboll will only consider DPM and $PM_{2.5}$ emissions from vendor and hauling trucks because construction worker vehicle trips from construction required for the Project is not expected to exceed an average of 5,000 worker trips per day. The BAAQMD recommends a traffic screening criteria of 10,000 vehicles per day for lifetime cancer risk exposure analyses (BAAQMD 2011). This screening criteria was derived from 2003 OEHHA Guidance, which has since been updated. The current OEHHA Guidance roughly increases lifetime cancer risk exposure by a factor of 40%. To be conservative, Ramboll has established a revised screening criteria of 5,000 vehicles per day, consistent with a 100% increase in lifetime exposure. This is especially conservative for construction analyses as the actual exposure period would be much shorter.

The methodology used to calculate emissions from on-road sources is presented in **Table 2**.

2.2 Operational Sources

Ramboll will evaluate the CAP operational emissions for the Project. The analysis will assume that 32 acres of the existing surface parking lots and 348,455 square feet of the existing development on the site would be demolished and replaced with new construction, while the majority of the existing development will remain. Thus, Ramboll will calculate net new emissions as a result of the Project, which will be the difference between the emissions from the proposed land uses and the emissions from the existing sources that will be removed. Sources of operational emissions from the Project and existing conditions include emergency diesel generators, on-road vehicles, energy use, and area sources. Based on information from the Project Sponsor, the first phase of the Project will become operational in 2028 and full buildout will occur in 2032. Therefore, full buildout operational emissions will be based on 2032 emission factors. For interim years for the analysis of combined construction and operational impacts, 2028 emission factors will be used to be conservative. Operational emissions occurring beyond years 2032 would likely be lower due to reductions in vehicle emissions due to vehicle turnover and increasingly stringent regulatory requirements.

In contrast to the analysis for construction, Ramboll will analyze the operational emissions of the Proposed Project explicitly. Emissions for the Authentic Church Variant will also be calculated by scaling Project emissions based on the increase in land uses.

2.2.1 Operational On-road Mobile Sources

On-road mobile sources include vehicle trips associated with residents, retail customers, employees, and vendor deliveries. Vehicles on the roadway emit TACs in their exhaust and CAPs through exhaust, tire wear, and brake wear. In addition, gasoline vehicles emit CAPs and TACs through fuel evaporation. To estimate operational vehicle emissions for the Project, Ramboll will rely on Project-generated trip rates (weekday and weekend) and truck trip estimates from the Transportation Engineer and Project Sponsor, respectively. For trip distances, Ramboll will rely on information provided by the Transportation Engineer. Mobile source emissions from the existing site will be calculated based on information provided by the Transportation Engineer.

Consistent with CalEEMod® methodology, Ramboll will assume that resident, retail customer and employee trips are 50% LDA, 25% LDT1 and 25% LDT2 vehicle classes. Vendor trips are assumed to be entirely MHDT. If information on fleet of existing vehicle trips to the site are known, this would instead be used to determine the fleet for the project uses.

Vehicles on the roadway emit TACs in their exhaust and CAPs through exhaust, tire wear, and brake wear. In addition, gasoline vehicles emit CAPs and TACs through fuel evaporation. To estimate on-road vehicle emissions for the Project, Ramboll will rely on trip generation and VMT data from the Transportation Engineer.

As mentioned above, ARB released a new version of its on-road emissions model (EMFAC2021) after the development of the latest version of CalEEMod®, so the latest on-road emissions model (EMFAC2021) will be used in this assessment. The emission factors used for operation of the Project will be provided from EMFAC2021 for operational year 2032 for full build out and 2028 for interim years.

For HRA purposes, Ramboll will consider DPM and $PM_{2.5}$ emissions from operational vehicle trips for the Project separately because the Project is not expected to result in an average of 5,000 trips per day or more and are therefore below the screening level requiring to be included in a health risk analysis.

The methodology used to calculate emissions from on-road sources is presented in **Table 2**.

2.2.2 Operational On-Site Generators

Operational emissions for the emergency generators will be calculated assuming a maximum of 50 hours per year of non-emergency operation, consistent with the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, CCR).[2] CAP emissions will be calculated assuming the engine complies with air district's Best Available Control Technology (BACT) limits, which at this time requires all generators 1,000 horsepower or greater to be Tier 4 compliant and all generators less than 1,000 horsepower to be Tier 2 compliant. Emissions will be based on the anticipated generator number and size, provided by the Project Sponsor. We understand the Project will have three 470 HP generators, six 670 HP generators, and three 1,005 HP generators.

Existing buildings in the Phase 2 area have existing generators (i.e., two generators with 100 HP and one generator with 536 HP) that are currently operational. However, we understand these generators will either remain or replaced with similar generators. Therefore, the emissions of these generators will not be considered.

2.2.3 Architectural Coating

Operational architectural coatings account for the reapplication of paint and coatings on interior and exterior surfaces, which would result in emissions of volatile organic compounds (VOCs). Ramboll will use the total building square footage provided by the Project Sponsor and the CalEEMod® default values of architectural coatings per square footage. Ramboll will use CalEEMod®, or equivalent methodology, combined with CalEEMod® default assumptions to estimate emissions from architectural coatings.

[2] California Air Resources Board, Final Regulation Order: Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines, https://ww3.arb.ca.gov/diesel/documents/finalreg2011.pdf, accessed October 29, 2021

Consistent with CalEEMod, existing emissions of re-application of architectural coating will also be calculated based on the square footage being removed.

2.2.4 Consumer Products

Consumer product emissions come from various non-industrial solvents, including cleaning supplies, kitchen aerosols, cosmetics and toiletries, which emit VOCs during their use. Using the estimated building square footage for the Project, Ramboll will use CalEEMod® or equivalent methodology to estimate emissions from consumer products, except the emission factor will be updated to reflect a San Francisco-specific Reactive Organic Gases (ROG) emission factor developed by San Francisco Environmental Planning (1.51×10^{-5} lb ROG/square foot per day) (BAAQMD 2014). If available, Ramboll will derive an updated VOC emission factor using methodology consistent with CalEEMod® but with updated countywide emissions and population.

Existing emissions from consumer products will be estimated using the same methodology.

2.2.5 Energy Use

CAP emissions are generated from energy use associated with buildings. Electricity and natural gas use are the most common for mixed use projects. Combustion of any type of fuel, including natural gas, emits CAPs directly into the atmosphere; these emissions are considered direct emissions associated with a building. CAPs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions since the emissions occur at the power generation source and not at the Project site. Only direct emissions are included in analyses of the Project. There are no direct emissions of CAPs associated with on-site electricity usage.

The San Francisco Board of Supervisors passed an ordinance in 2020 to ban the installation of new natural gas infrastructure in newly constructed buildings. The Project would not construct natural gas infrastructure or use natural gas for operations, therefore, there would be no emissions from energy use.

2.2.6 Landscaping Equipment

Emissions from landscaping equipment for the Project and existing conditions will be calculated using CalEEMod® 2020.4.0 and based on information regarding building square footage and acreage, as well as CalEEMod defaults. As a conservative measure, the recent law (Assembly Bill 1346) banning the sale of gasoline-powered landscaping equipment by 2024 will not be accounted for, since it is unknown how the law will affect emissions due to non-electric equipment already in operation.

2.3 Combined Construction and Operational Emissions

Construction is expected to occur during Project operation because the Project will be constructed over a period of several years. In years when construction is scheduled to coincide with Project operation, construction emissions will be combined with operational emissions. The combined construction and operational emissions will be compared with average daily emissions thresholds, using the 260 days per year for construction (even though there may be some weekend work) and 365 days per year for operations. Operational emissions during interim years where construction overlaps with operation will be calculated by scaling full buildout emissions using 2028 emission factors by the fraction of the Project that would be operating in a specific year. Using an emission factor for a constant year for the entire overlap is conservative because emissions tend to decrease with time as emission sources become cleaner.

2.4 Control Measures

Ramboll, in consultation with San Francisco Environmental Planning, will identify control measures to reduce emissions from the Project following preliminary results of the Project's emissions and health risks. The effectiveness of the control measures will be evaluated quantitatively. The control measures, methodology for evaluating their effectiveness and results will be provided in the results memorandum. The following are preliminary control measures that may be included in the analysis:

- Use of Tier 4 Final off-road construction equipment.
- Limit equipment idling to 2 minutes, although emissions reductions due to this control measure would not be quantified.
- Reduced generator testing hours for those building types that require generators.

The exact control measures to be quantitatively evaluated will be developed by Ramboll, in consultation with San Francisco Environmental Planning, following preliminary results of the Project's emissions and health risks.

3. ESTIMATED AIR CONCENTRATIONS

The air toxics analysis will evaluate health risks and $PM_{2.5}$ concentrations resulting from the Project upon the surrounding community. For the Project, this would include construction off-road equipment, construction haul truck trips, and operational traffic emissions, including emissions from trucks traveling to and from the site. The methodologies used to evaluate emissions from the Project are based on the most recent BAAQMD CEQA Guidelines (BAAQMD 2017), BAAQMD Health Risk Assessment Modeling Protocol (BAAQMD 2020) and the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015).

3.1 Chemical Selection

The cancer risk analysis in the HRA for the Project is based on DPM and gasoline TOG concentrations from operational traffic, including trucks. Diesel exhaust, a complex mixture that includes hundreds of individual constituents (California Environmental Protection Agency [Cal/EPA] 1998), is identified by the State of California as a known carcinogen (Cal/EPA 2016). Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. Cal/EPA and other proponents of using the surrogate approach to quantifying cancer risks associated with the diesel mixture indicate that this method is preferable to use of a component-based approach. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, Cal/EPA has concluded that "potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components" (OEHHA 2003).

The cancer risk analysis for the Project will also include speciated TACs from gasoline-fueled mobile sources. For gasoline vehicles, exhaust and evaporative TOGs from gasoline-fueled vehicles would be evaluated based on the organic chemical profiles from ARB (CARB 2021).

3.2 Sources

As discussed in the next section, concentrations of TACs from the Project construction and operational emissions will be estimated using the USEPA's preferred atmospheric dispersion modeling system (AERMOD).

3.2.1 AERMOD Modeling

Ramboll will use the most recent version of the American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD Version 21112) to evaluate ambient air concentrations of TACs and $PM_{2.5}$ at receptors (USEPA 2021). For each receptor location, the model generates air concentrations (or air dispersion factors as unit emissions will be modeled) that result from emissions from multiple sources.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters, meteorological data, topographical data, and receptor parameters. When site-specific information is unknown, Ramboll will use default parameter sets that are designed to produce conservative (i.e., overestimates of) air concentrations (USEPA 2021).

3.2.2 Meteorological Data

Air dispersion modeling applications require the use of meteorological data that ideally are spatially and temporally representative of conditions in the immediate vicinity of the site under consideration.

For this HRA, BAAQMD's Mission Bay meteorological data for the year 2008 will be used, which aligns with the San Francisco Citywide HRA Methodology (San Francisco Department of Public Health [SF DPH], San Francisco Environmental Planning, and Ramboll 2020).

3.2.3 Terrain and Land Use Considerations

Elevation for all emissions sources will be imported from the National Elevation Dataset maintained by the United States Geological Survey ([USGS] 2013). Elevations for all receptors will be consistent with the Citywide HRA modeling.

An important consideration in an air dispersion modeling analysis is whether or not to model an area as urban. Due to the urban nature of San Francisco, the Project will be modeled with the urban population of 873,965, corresponding to the April 1, 2020 US Census population estimate (US Census Bureau 2020). The urban option in AERMOD accounts for increased turbulence associated with the urban heat island effect.

3.2.4 Emission Rates

Emissions will be modeled using the χ/Q ("chi over q") method, such that each source has a unit emission rate (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of microgram per cubic meter per gram per second [$\mu g/m^3$]/[g/s]). Actual emission rates will be multiplied by the dispersion factors to obtain concentrations.

3.2.4.1 Construction Emission Rates

For the construction phase, emitting activities will be modeled to reflect the actual hours of the day that construction activity would occur, based on information from the Project Sponsor and noise ordinances. The AERMOD EMISFACT option will be used to limit emissions to this time period.

For annual average ambient air concentrations over the construction phase, the estimated annual average dispersion factors will be multiplied by the annual average emission rates. The emission rates would vary day to day, with some days having no emissions. To estimate an annual average, the model assumes a constant emission rate during the entire year. Thus, the average emissions rates will be calculated by taking the total mass of emissions and dividing by the hours considered in the model. The equipment would be expected to operate at most 8 hours per day, but this 8-hour period can occur anytime in the operating window. Because the exact timing of when the equipment would operate is not known, the eight hours of emissions will be averaged over the operating hours of meteorology. While construction using heavy equipment is expected to generally occur Monday through Friday, the emissions were averaged over 365 days per year as meteorology conditions are not dependent upon day of the week (please note this differs from the approach for CAP mass emissions, which will be averaged over 260 workdays per year). Weekends were not excluded from the meteorology data in order to generate more representative averages.

3.2.4.2 Operational Emission Rates

Emergency generators are assumed to be tested at any hour of day; as a result, no variable emission rate factor will be applied.

Traffic emission rates will be calculated based on the actual fleet breakdown, as provided by the Project Applicant. The diurnal pattern of traffic volumes for operations (high volumes during rush hour and during the day, with low volumes overnight) will be incorporated using the AERMOD EMISFACT option and percentage of traffic by hour. The traffic by hour will be developed using ratios of hourly trip rates from EMFAC2021 in San Francisco County for all vehicle types.

3.2.5 Source Parameters

Source location and parameters are necessary to model the dispersion of air emissions. Source parameters for the Project are summarized in **Table 3**.

For construction emissions, area sources will be used to represent the on-site activity in AERMOD. The on-site construction area sources will be modeled with the same release parameters used in the Citywide HRA: a release height of 5 meters and an initial vertical dimension of 1.4 meters. Construction on-road activity will be included with the off-road area sources, to account for the potential for truck travel in any direction. As discussed in Section 2.1.2 above, on-road construction worker trips are negligible and will therefore not be included in the HRA analysis.

For operational emissions, Ramboll will model mobile sources on roadways. On-road emissions will be modeled (consistent with the Citywide HRA methodology) in AERMOD as adjacent volume sources, with the number of sources dependent on the length and width of the roadway segment. For AERMOD modeling, the release height of volume sources for on-road light duty vehicles will be set to 1.7 meters, and the initial vertical dimension will be set to 1.58 meters, consistent with Citywide HRA methodology (SF DPH, San Francisco Environmental Planning, and Ramboll 2020). For on-road trucks, the release height of volume sources will be set to 2.6 meters and the initial vertical dimension will be set to 2.4 meters, consistent with USEPA haul road guidance (USEPA 2012). Initial lateral dimensions will be calculated for each segment based on the width of the modeled roadway plus a six-meter mixing zone, all divided by a factor of 2.15 consistent with the USEPA AERMOD User's Guide. Net new traffic will be modeled on roadways where the Project adds over 5,000 vehicles per day. Traffic volumes and impacted roadways will be provided by the Transportation Engineer.

Unless Project-specific data can be provided, emergency generator emissions will be modeled in AERMOD following the Citywide HRA methodology: as point sources with a release height of 3.7 meters above ground level, an exit temperature of 872 degrees Fahrenheit, an exit velocity of 45 meters per second, and an exit diameter of 0.18 meters. The number and location of generators assumed will be provided by the Project Sponsor for the Project and existing conditions. Generators will be modeled at ground level rather than at elevated locations, consistent with the Citywide HRA. Ground-level modeling will likely produce more conservative (worst-case) results.

3.2.6 Receptors

In order to evaluate health impacts to receptors, receptors will be placed at locations collocated with the receptors used in the Citywide HRA and within 1,000 meters of the Project and modeled traffic sources. Consistent with previous San Francisco Citywide HRA analyses (SF DPH, San Francisco Planning Department, and Ramboll 2020), receptors will be modeled at a height of 1.8 meters above terrain height, a default breathing height for ground-floor receptors. As discussed previously, annual dispersion factors will be estimated for each receptor location.

4. RISK CHARACTERIZATION METHODS

In February 2015, OEHHA released the updated Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015), which combines information from previously-released and adopted technical support documents to delineate OEHHA's revised risk assessment methodologies based on current science. This updated Guidance Manual supersedes the 2003 Hot Spots Guidance Manual (OEHHA 2003) that previously provided methodologies for conducting HRAs under the Air Toxics Hot Spots Program (AB2588). The BAAQMD has issued Guidelines on adopting the OEHHA 2015 Guidance Manual as well as additional guidance published in December 2020 (BAAQMD 2020). This evaluation will utilize the 2015 methodology; details of this methodology are discussed below.

Ramboll will estimate Project health risk impacts from Project construction assuming construction begins in 2024 and at least partial operations beginning in 2028.

Ramboll will estimate health risk impacts associated with both the Proposed Project and the Authentic Church Variant.

4.1 Project Sources Evaluated

Ramboll will evaluate excess lifetime cancer risk and $PM_{2.5}$ concentration for nearby sensitive receptor exposure to emissions from the construction and operation of the Project. The health risks will account for construction off-road equipment, construction haul truck trips, operational traffic and operational truck activity. The HRA will be calculated using the methodology explained in the following sections.

4.1.1 Exposure Assessment

Ramboll will conservatively model all existing Citywide HRA grid (20-meter spacing) receptors within 1 kilometer of the Project (including any roadways with Project-generated traffic volumes in excess of 1,000 vehicles per day). Consistent with the Citywide HRA, all sensitive receptors will be analyzed as residents, with the exception of any on-site daycares, which will be modeled as a daycare. The daycare facilities will likely be in a building in Phase 1 or Phase 3 and are anticipated to be operational upon completion of each of these phases. Therefore, daycare receptors will be analyzed on these buildings.

Potentially Exposed Populations: This analysis will evaluate health risks to on- and off-site sensitive receptors based on OEHHA 2015 Hot Spots Guidelines.

For assessing impacts to exposed populations from emissions resulting from the Project construction and operational emissions, sensitive receptors will be evaluated as a fetus *in utero* at the beginning of the third trimester at the start of construction until age 30 for operational exposures.

Emissions and exposure to sensitive populations would vary across the eight year and two-month construction period. Therefore, multiple exposure scenarios were evaluated to capture the period of maximum impact on each sensitive population and location both on-site and off-site. Health impacts were evaluated for the following scenarios:

- For off-site receptors:
    - Exposure to construction beginning at the start of construction and exposure to operation after construction is completed;
    - Exposure to construction beginning at the start of Phase 2 and exposure to operation after construction is completed;

  - Exposure to construction beginning at the start of Phase 3 and exposure to operation after construction is completed;
  - Exposure to construction beginning at the start of Phase 4 and exposure to operation after construction is completed;
  - Exposure to construction beginning at the start of Phase 5 and exposure to operation after construction is completed; and
  - Exposure to construction beginning at the start of Phase 6 and exposure to operation after construction is completed.

- For on-site receptors:[3]
  - Phase 1 occupants: Exposure to subsequent construction beginning after Phase 1 construction completion and exposure to operation of completed phases;
  - Phase 2 occupants: Exposure to subsequent construction beginning after Phase 2 construction completion and exposure to operation of completed phases;
  - Phase 3 occupants: Exposure to subsequent construction beginning after Phase 3 construction completion and exposure to operation of completed phases;
  - Phase 4 occupants: Exposure to subsequent construction beginning after Phase 4 construction completion and exposure to operation of completed phases;
  - Phase 5 occupants: Exposure to subsequent construction beginning after Phase 5 construction completion and exposure to operation of completed phases;
- For on-site and off-site receptors:
  - Exposure to operations beginning at the conclusion of Project construction when the Project is fully operational.

This results in twelve exposure scenarios. **Figures 1a and 1b** show a Gantt chart of the construction schedule for the Project and Authentic Church Variant, respectively.

These exposure scenarios were developed to capture the maximum impacts from Project construction and operations. Due to the complex timing of Project construction, the selection of exposure scenarios took into consideration the magnitude of potential activity to align with periods where exposure has the biggest impact.

Exposure Assumptions: The exposure parameters used to estimate excess lifetime cancer risks for all potentially exposed populations from construction and operational emissions will be obtained using risk assessment guidelines from OEHHA (2015) and BAAQMD (2016, 2020). **Tables 5** and **7** show the proposed exposure duration, age sensitivity factor, and resulting exposure parameters that will be used for the HRA.

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

[3] The Project would include an on-site daycare that would likely be located in the cultural, educational, institutional land use areas of Phase 1 or Phase 3. The daycare exposure will be explicitly analyzed for these phases.

IF_{inh} = DBR * FAH * EF * ED * CF

AT

Where:

IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)

DBR = Daily Breathing Rate (L/kg-day)

FAH = Frequency of Time at Home (unitless)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

AT = Averaging Time (days)

CF = Conversion Factor, 0.001 (m^3/L)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the current OEHHA Hot Spots guidance (OEHHA 2015).

4.1.2 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values that are used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

Following the Community HRA methodology for cancer risk calculations, Ramboll will include the carcinogenic toxicity for DPM from on-road vehicles and additional organic gases from on-road gasoline-powered vehicles. Chronic hazard quotient (HQs) calculations for Project operation will utilize toxicity values for chemicals emitted from these same sources.

This analysis utilizes available toxicity values including inhalation cancer potency factors (CPFs), and chronic inhalation reference exposure levels (RELs). Ramboll will utilize the Cal/EPA-approved (Cal/EPA 2017) inhalation cancer potency factor for DPM and chronic inhalation RELs. The CPF for DPM that will be used for the HRA is 1.1 $(mg/kg\text{-}day)^{-1}$. Toxicity values are summarized in **Table 5**.

4.1.3 Age Sensitivity Factors

The estimated excess lifetime cancer risks for a resident will be adjusted using age sensitivity factors (ASFs) that account for an "anticipated special sensitivity to carcinogens" of infants and children as recommended in the OEHHA Technical Support Document (OEHHA 2009) and OEHHA 2015 Guidance (OEHHA 2015). Cancer risk estimates will be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 and older. **Table 6** presents the ASF values that will be used for the HRA.

4.2 Risk Characterization

4.2.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical specific CPF.

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$Risk_{inh} = C_i \times CF \times IF_{inh} \times CPF \times ASF$

Where:

$Risk_{inh}$ = Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)

C_i = Annual average air concentration for $chemical_i$ ($\mu g/m^3$)

CF = Conversion factor (mg/µg)

IF_{inh} = Intake factor for inhalation (m^3/kg-day)

CPF_i = Cancer potency factor for $chemical_i$
$(mg\ chemical/kg\ body\ weight\text{-}day)^{-1}$

ASF = Age sensitivity factor (unitless)

4.2.2 Estimation of Project Health Risks

Results for cancer risk, chronic Hazard Index (HI), and $PM_{2.5}$ concentrations will be presented for the MEIR, which are the locations where the maximum health impacts are estimated to occur.

4.2.3 Estimation of Existing Plus Project Health Risks

Ramboll will conduct an existing plus project HRA of cancer risk and $PM_{2.5}$ concentrations at on- and off-site receptors resulting from other sources of stationary, area, and mobile emissions as calculated in the Citywide HRA in addition to health impacts from Project operations. We will use the Citywide HRA database to determine the existing cancer risk and $PM_{2.5}$ concentrations at on- and off-site sensitive receptors within 1-kilometer of the Project and will add Project operational impacts to determine the existing plus project impact. The Citywide HRA does not report Chronic HI, therefore, Existing Plus Project results will not be calculated for Chronic HI.

5. CUMULATIVE ANALYSIS

Ramboll will evaluate the cumulative health risk impact resulting from reasonably foreseeable projects within 1,000 meters of the Maximally Exposed Individual Receptor (MEIR) that emit TACs from construction or operations (e.g., new stationary sources proposed as part of a cumulative project). Ramboll will review nearby reasonably foreseeable projects to determine if any would potentially impact the MEIR for the Project. Ramboll will determine relevant projects to consider in consultation with San Francisco Environmental Planning and ESA.

For projects with available health risk assessments or CEQA Air Quality reports, Ramboll will determine risks at the Project MEIR based on these previous efforts. For projects with no health risk information available, Ramboll proposes to use a screening approach to estimate potential health impacts from construction of these projects.

6. REFERENCES

Bay Area Air Quality Management District (BAAQMD). Recommended Methods for Screening and Modeling Local Risks and Hazards. May 2011. Table 14. Available online at http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20Modeling%20Approach.ashx?la=en. Accessed November 2021.

BAAQMD. 2014. Email correspondence between Alison Kirk, Senior Environmental Planner, BAAQMD, with Wade Wietgrefe of the San Francisco Environmental Planning Department. March 19.

BAAQMD. 2016. Proposed Health Risk Assessment Guidelines. Air Toxics NSR Program. January. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en

BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

BAAQMD. 2020. Health Risk Assessment Modeling Protocol. December. Available online at: https://www.baaqmd.gov/~/media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?la=en

CARB 2021. Speciation profile 2111 for gasoline TOG exhaust and profile 422 for gasoline TOG evaporative emissions. Available at: https://ww3.arb.ca.gov/ei/speciate/speciate.htm#specprof

California Energy Commission. 2019. Impact Analysis for 2019 Energy Efficiency Standards. Available online at: https://www.energy.ca.gov/title24/2019standards/post_adoption/documents/2019_Impact_Analysis_Final_Report_2018-06-29.pdf.

California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA). 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting.

Office of Environmental Health Hazard Assessment (OEHHA). 2003. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. August. Available at: https://oehha.ca.gov/media/downloads/crnr/hrafinalnoapp.pdf

OEHHA. 2009. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures. Office of Environmental Health Hazard Assessment. May. Available at: http://www.oehha.ca.gov/air/hot_spots/2009/TSDCancerPotency.pdf

OEHHA. 2015. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. August. Available at: http://www.oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf

San Francisco Board of Supervisors (SF BOS), 2020, File No. 200701, Ordinance amending the building code (etc), https://sfgov.legistar.com/View.ashx?M=F&ID=8911593&GUID=A0CEC5DB-30DE-4576-AAAD-6BF8266CC67C, accessed November 18, 2021.

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department, and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation. September.

US Census Bureau. 2020. QuickFacts San Francisco County, California. Available at: https://www.census.gov/quickfacts/fact/table/sanfranciscocitycalifornia/POP010220

USEPA. 2021. User's Guide for the AMS/EPA Regulatory Model (AERMOD). Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EPA-454/B-21-001, April 2021). Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf

USEPA. 2012. Haul Road Workgroup Final Report Submission to EPA-OAQPS. U.S. EPA Office of Air Quality and Planning Standards, Research Triangle Park, North Carolina. Available at: https://www3.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf

United States Geological Survey (USGS). 2013. National Elevation Dataset. Available at: http://viewer.nationalmap.gov/viewer/

TABLES

Table 1
Land Use Descriptions
Stonestown Development Project
San Francisco, California

Land Use Type[1]	Project Amount	Variant Amount	Units
Apartments Mid Rise	2,930	3,080	Dwelling Units
Regional Shopping Center	160	160	1000sqft
General Office Building	200	200	1000sqft
Hotel	200	200	Room
Cultural, Institutional, and Educational	53	63	1000sqft
City Park	6	6	Acre
Enclosed Parking with Elevator	4,250	4,450	Spaces

Notes

[1] Land use types shown are CalEEMod® land use descriptions applicable to the Project.

Abbreviations

sqft - square feet

Table 2
Emissions Calculation Methodology
Stonestown Development Project
San Francisco, California

Type	Source	Methodology and Formula	Reference
Construction Equipment	Off-Road Equipment[1]	$Ec = \Sigma(EFc * HP * LF * Hr * C)$	OFFROAD2011 and ARB/USEPA Engine Standards
Construction On-Road Mobile Sources[2]	Exhaust – Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2021
	Exhaust - Idling	$E_I = \Sigma(EF_I * Trip\ Number * T_I * C)$	EMFAC2021
Operational Generator Emissions[3]	Stationary Source	$E_{SS} = EF_{SS} * Hr * C$	--
Operational On-Road Mobile Sources[2]	Exhaust - Running	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2021
	Brake Wear and Tire Wear	$E_{BW,TW} = \Sigma(EF_{BW,TW} * VMT * C)$, where VMT = Roadway Link Length * Vehicle Counts	EMFAC2021
	Exhaust - Idling	$E_I = \Sigma(EF_I * Trip\ Number * T_I * C)$	EMFAC2021
	Exhaust - Running Losses	$E_R = \Sigma(EF_{RL} * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2021
Other Operational Sources	Area, Energy	CalEEMod®	CalEEMod®

Notes:

1. E_c: off-road equipment exhaust emissions (lb)
   EF_c: emission factor (g/hp-hr). CalEEMod 2020.4.0 default emission factors used
   HP: equipment horsepower from original buidling Type analysis
   LF: equipment load factor. OFFROAD2011
   Hr: equipment hours
   C: unit conversion factor
2. On-road mobile sources include truck and passenger vehicle trips. Emissions associated with mobile sources were calculated using the following formulas.
   E_R: running exhaust and running losses emissions (lb)
   EF_R: running emission factor (g/mile). From EMFAC2021
   VMT: vehicle miles traveled
   C: unit conversion factor
   The calculation involves the following assumptions:
   a. All material transporting and soil hauling trucks are heavy-heavy duty trucks.
   b. Trip Length: The one-way trip length as calculated based on the truck route or the default length from CalEEMod.
   c. Trip Number: from original building Type analysis

   EF_I: vehicle idling emission factor (g/hr-trip). From EMFAC2021
   T_I: idling time
   C: unit conversion factor
3. Operational emissions from the generator were calculated using the following formulas:
   E_{SS}: Stationary Source emissions.
   EF_{SS}: Stationary Source emission factor
   Hr: hours of operation per year (hr)
   C: unit conversion factor

Abbreviations:

ARB: California Air Resources Board
EF: Emission Factor
EMFAC: EMission FACtor Model
g: gram
HP: horsepower
lb: pound
LF: Load Factor
mi: mile
USEPA: United States Environmental Protection Agency
VMT: vehicle miles traveled

References:

ARB/USEPA. 2013. Table 1: ARB and USEPA Off-Road Compression-Ignition (Diesel) Engine Standards. Available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls

ARB. 2021. EMission FACtors Model, 2021 (EMFAC2021). Available online at: https://arb.ca.gov/emfac/emissions-inventory

CAPCOA. 2021. CALifornia Emissions Estimator MODel (CalEEMod). Available online at: http://www.aqmd.gov/caleemod/download-model

Table 3
Modeling Parameters
Stonestown Development Project
San Francisco, California

Construction Sources

Source	Source Type[1]	Number of Sources[2]	Source Dimension [m]	Release Height[3] [m]	Initial Vertical Dimension[4] [m]	Initial Lateral Dimension[5] [m]
Construction Equipment	Area	To be determined based on number of phases	Parcel Area	5.0	1.4	--
On-Road Haul Trucks	Volume	Variable	Variable	2.6	2.4	Variable

Operational Sources

Source[6]	Source Type	Number of Sources[2]	Stack Height [m]	Stack Velocity [m/s]	Exit Diameter [m]	Stack Temperature °F
Generators	Point	To be determined based on number of generators	3.7	45	0.2	872

Source	Source Type	Number of Sources[1]	Source Dimension [m]	Release Height[3] [m]	Initial Vertical Dimension[4] [m]	Initial Lateral Dimension[5] [m]
On-Road Light Duty Vehicles	Volume	Variable	Variable	1.7	1.6	Variable
On-Road Trucks[3]	Volume	Variable	Variable	2.6	2.4	Variable

Notes:

1. Construction off-road equipment will be modeled as an area source covering the parcel(s) under construction. The number of sources will depend on the site geometry and construction phases. This information will be provided by the Project Sponsor.
2. The number of on-road sources is based on the geometry of the truck or traffic routes. There will be one generator point source for every generator included in the Project; this information will be provided by the Project Sponsor.
3. Release height of a modeled area source representing construction equipment will be set to 5 meters. A release height of 5 meters was chosen to be consistent with BAAQMD truck release heights. Based on USEPA's AERMOD guidance, initial lateral and vertical dimensions were determined by dividing the side length by 4.3.
4. According to the Community HRA methodology, initial vertical dimension of the modeled construction equipment volume sources will be set to 1.4 meters. On-road truck and car initial vertical dimension based on previous Community HRA modeling and USEPA haul road guidance.
5. According to USEPA AERMOD User's Guide, for a line source modeled as adjacent volume sources, the initial lateral dimension is the length of the side divided by 2.15.
6. Generators will be modeled assuming default parameters in Table 7 of the Community HRA technical guidance document (SF DPH, SF Planning, and Ramboll. 2020.

Abbreviations:

ARB - California Air Resources Board
BAAQMD - Bay Area Air Quality Management District
°F - Fahrenheit
CEQA - California Environmental Quality Act
CRRP - Community Risk Reduction Plan
m - meter
s - second
USEPA - United States Environmental Protection Agency

References:

San Francisco Department of Public Health (SF DPH), San Francisco Planning Department (SF Planning), and Ramboll. 2020. San Francisco Citywide Health Risk Assessment: Technical Support Documentation.

USEPA. 2012. Haul Road Workgroup Final Report Submission to EPA-OAQPS. March. Available at: https://www3.epa.gov/scram001/reports/Haul_Road_Workgroup-Final_Report_Package-20120302.pdf

USEPA. 2021. User's Guide for the AMS/EPA Regulatory Model (AERMOD). Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina. EPA-454/B-20-001, April 2021). Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf

Table 4
Exposure Parameters
Stonestown Development Project
San Francisco, California

Population	Receptor Age Group	Exposure Parameters					
		Daily Breathing Rate (DBR)[1] [L/kg-day]	Exposure Duration (ED) [years]	Fraction of Time at Home (FAH)[2] [unitless]	Exposure Frequency (EF)[3] [days/year]	Averaging Time (AT) [days]	Intake Factor, Inhalation (IF_{inh}) [m^3/kg-day]
Residents[4]	3rd Trimester	361	0.25	1.0	350	25,550	0.0012
	Age 0-<2 Years	1,090	2.0	1.0	350	25,550	0.030
	Age 2-<16 Years	572	14	1.0	350	25,550	0.11
	Age 16-30 Years	261	14	0.73	350	25,550	0.037
Daycare Children[5]	Age Six Weeks-<2 Years	1,090	1.9	1.0	350	25,550	0.028
	Age 2-<9 Years	631	4.0	1.0	350	25,550	0.035

Notes:

1. Daily breathing rates reflect default breathing rates from OEHHA 2015 and BAAQMD 2016 as follows: 95th percentile 24-hour daily breathing rate for 3rd trimester and age 0-<2 years; 80th percentile for ages 2 years and older (per BAAQMD 2016 and 2020 Health Risk Assessment (HRA) Modeling Guidelines).

2. Fraction of time spent at home is conservatively assumed to be 1 (i.e., 24 hours/day) for age groups from the third trimester to less than 16 years old based on the recommendation from BAAQMD (BAAQMD 2016 and 2020) and OEHHA (OEHHA 2015). The fraction of time at home for adults age 16-30 reflects default OEHHA guidance (OEHHA 2015) as recommended by BAAQMD (2016 and 2020). The fraction of time at home for the daycare children was conservatively set to be 1, consistent with OEHHA 2015 guidance for resident children.
3. Exposure frequency reflects default residential exposure frequency from OEHHA 2015.
4. All residents will be assumed to be exposed to risks for 30 years beginning at the first year of construction and through remaining years of operation.
5. Daycare children are modeled using parameters consistent with OEHHA 2015 guidance for resident children, which conservatively assumes 24 hours/day exposure.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT

CF = 0.001 (m^3/L)

Abbreviations:

AT - averaging time
BAAQMD - Bay Area Air Quality Management District
DBR - daily breathing rate
ED - exposure duration
EF - exposure frequency
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment

References:

BAAQMD. 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. January.
BAAQMD. 2020. Health Risk Assessment (HRA) Modeling Protocol. December.
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 5
Toxicity Values
Stonestown Development Project
San Francisco, California

Fuel[1]	Source	Chemical	CAS Number	Cancer Potency Factor [mg/kg-day]$^{-1}$	Chronic REL (µg/m^3)	Weight Fraction[2]
Diesel	PM_{10}	Diesel PM	9-90-1	1.1	5	1
Gasoline	TOG	1,3-Butadiene	106-99-0	0.6	2	0.0055
		Acetaldehyde	75-07-0	0.01	140	0.0028
		Acrolein	107-02-8	-	0.35	0.0013
		Benzene[3]	71-43-2	0.1	3	0.0036
						0.025
		Ethylbenzene[3]	100-41-4	0.0087	2000	0.0012
						0.011
		Formaldehyde	50-00-0	0.021	9	0.016
		Hexane[3]	110543	-	7000	0.015
						0.016
		Methanol	67-56-1	-	4000	0.0012
		Methyl Ethyl Ketone	78-93-3	-	-	13000
		Naphthalene	91-20-3	0.12	9	0.0005
		Propylene	115-07-1	-	3000	0.031
		Styrene	100-42-5	-	900	0.0012
		Toluene[3]	108-88-3	-	420	0.017
						0.058
		Xylenes[3]	1330-20-7	-	700	0.0058
						0.048

Notes:

1. For the health risk analysis, health effects will be evaluated for emissions from diesel off-road construction equipment, diesel generators and vehicles, which are assumed to be diesel and gasoline-fueled.
2. Speciation fractions shown are for gasoline-fueled vehicles.
3. Benzene, ethylbenzene, hexane, toluene, and xylenes are produced from catalytic exhaust and evaporative losses from gasoline engines. For each of these chemicals, the evaporative loss weight fraction is shown before the exhaust weight fraction in this table.

Abbreviations:

ARB - Air Resources Board
Cal/EPA - California Environmental Protection Agency
CAS - chemical abstract services
mg/kg-day - milligrams per kilogram per day
OEHHA - Office of Environmental Health Hazard Assessment
PM - particulate matter
REL - reference exposure level
TOG - Total Organic Gas

References:

Cal/EPA. 2020. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. October. Available at: https://ww2.arb.ca.gov/sites/default/files/classic//toxics/healthval/contable.pdf.

Table 6
Age Sensitivity Factors
Stonestown Development Project
San Francisco, California

Receptor Age Group	Value[1]
3rd Trimester	10
Age 0-<2 Years	10
Age 2-<9 Years	3
Age 2-<16 Years	3
Age >16 Years	1

Note:

1. Based on OEHHA 2015. Age sensitivity factors are unitless.

Abbreviation:

OEHHA - Office of Environmental Health Hazard Assessment

Source:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

FIGURES

Figure 1a
Proposed Project Phasing Schedule
Stonestown Redevelopment
San Francisco, CA

Project Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year	2024				2025				2026				2027				2028				2029				2030				2031				2032			
		Start	End			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Demolition	04/15/24	06/10/24	40	--																																		
	Site Preparation	04/01/24	06/10/24	50	--																																		
	Grading, Shoring, Excavating	05/28/24	01/14/25	159	--																																		
	Building Construction	12/02/24	01/11/28	796	--																																		
	Paving	02/01/26	05/01/26	64	--																																		
	Architectural Coating	12/01/25	01/11/28	544	2028																																		
Phase 2	Demolition	05/02/25	07/21/25	57	--																																		
	Site Preparation	04/01/25	07/21/25	80	--																																		
	Grading, Shoring, Excavating	06/21/25	05/21/26	239	--																																		
	Building Construction	05/22/26	12/22/28	676	--																																		
	Paving	10/01/28	11/01/28	23	--																																		
	Architectural Coating	06/01/27	12/22/28	409	2028																																		
Phase 3	Demolition	07/02/26	09/20/26	58	--																																		
	Site Preparation	06/01/26	07/01/26	21	--																																		
	Grading and Shoring	08/20/26	07/20/27	239	--																																		
	Building Construction	08/01/26	10/01/28	577	--																																		
	Paving	06/01/27	07/01/27	21	--																																		
	Architectural Coating	10/01/27	10/01/28	261	2028																																		
Phase 4	Demolition	05/02/27	07/21/27	57	--																																		
	Site Preparation	04/01/27	05/01/27	21	--																																		
	Grading, Shoring, Excavate	06/21/27	05/21/28	239	--																																		
	Building Construction	02/01/28	08/15/30	661	--																																		
	Paving	06/20/28	08/20/28	44	--																																		
	Architectural Coating	02/01/29	08/15/30	400	2030																																		
Phase 5	Demolition	06/02/28	08/21/28	58	--																																		
	Site Preparation	04/01/28	06/01/28	44	--																																		
	Grading, Shoring, Excavation	07/21/28	06/21/29	244	--																																		
	Building Construction	04/21/29	11/01/31	673	--																																		
	Paving	07/26/30	09/26/30	44	--																																		
	Architectural Coating	04/21/30	11/01/31	399	2031																																		
Phase 6	Demolition	05/02/29	07/21/29	57	--																																		
	Site Preparation	04/01/29	05/01/29	21	--																																		
	Grading, Shoring, Excavating	06/21/29	05/21/30	239	--																																		
	Building Construction	02/01/30	04/01/32	564	--																																		
	Paving	10/01/31	11/30/31	43	--																																		
	Architectural Coating	11/28/30	04/01/32	350	2032																																		

Key:

Active Construction Period

Full Operation

Figure 1b
Proposed Project Phasing Schedule for the Authentic Church Variant
Stonestown Redevelopment
San Francisco, CA

Variant Construction

Phase	Subphase	Construction Schedule		Number of Work Days	Operational Year	2024				2025				2026				2027				2028				2029				2030				2031				2032			
		Start	End			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phase 1	Demolition	04/15/24	06/10/24	40	--																																		
	Site Preparation	04/01/24	06/10/24	50	--																																		
	Grading, Shoring, Excavating	05/28/24	01/14/25	159	--																																		
	Building Construction	12/02/24	01/11/28	796	--																																		
	Paving	02/01/26	05/01/26	64	--																																		
	Architectural Coating	12/01/25	01/11/28	544	2028																																		
Phase 2	Demolition	05/02/25	07/21/25	57	--																																		
	Site Preparation	04/01/25	07/21/25	80	--																																		
	Grading, Shoring, Excavating	06/21/25	05/21/26	239	--																																		
	Building Construction	05/22/26	12/22/28	676	--																																		
	Paving	10/01/28	11/01/28	23	--																																		
	Architectural Coating	06/01/27	12/22/28	409	2028																																		
Phase 3	Demolition	07/02/26	09/20/26	58	--																																		
	Site Preparation	06/01/26	07/01/26	21	--																																		
	Grading and Shoring	08/20/26	07/20/27	239	--																																		
	Building Construction	08/01/26	10/01/28	577	--																																		
	Paving	06/01/27	07/01/27	21	--																																		
	Architectural Coating	10/01/27	10/01/28	261	2028																																		
Phase 4	Demolition	06/02/27	09/10/27	73	--																																		
	Site Preparation	04/01/27	06/01/27	44	--																																		
	Grading, Shoring, Excavate	08/10/27	07/10/28	244	--																																		
	Building Construction	03/01/28	12/01/30	732	--																																		
	Paving	08/01/30	10/01/30	44	--																																		
	Architectural Coating	03/01/29	12/01/30	457	2030																																		
Phase 5	Demolition	06/02/28	08/21/28	58	--																																		
	Site Preparation	04/01/28	06/01/28	44	--																																		
	Grading, Shoring, Excavation	07/21/28	06/21/29	244	--																																		
	Building Construction	04/21/29	11/01/31	673	--																																		
	Paving	07/26/30	09/26/30	44	--																																		
	Architectural Coating	04/21/30	11/01/31	399	2031																																		
Phase 6	Demolition	05/02/29	07/21/29	57	--																																		
	Site Preparation	04/01/29	05/01/29	21	--																																		
	Grading, Shoring, Excavating	06/21/29	05/21/30	239	--																																		
	Building Construction	02/01/30	04/01/32	564	--																																		
	Paving	10/01/31	11/30/31	43	--																																		
	Architectural Coating	11/28/30	04/01/32	350	2032																																		

Key:

Active Construction Period

Full Operation

ATTACHMENT G

Revised Variant Wind Memorandum

600 Southgate Drive
Guelph, ON N1G 4P6
Canada

Tel: +1.519.823.1311
Fax: +1.519.823.1316

January 22, 2024

Florentina Craciun
Senior Environmental Planner
City and County of San Francisco
Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
florentina.craciun@sfgov.org

Cc: Brookfield Properties
Julia Adams, Development Manager
julia.adams@brookfieldpropertiesdevelopment.com

Re: Stonestown Galleria – San Francisco, CA
Pedestrian Wind Study – Northwest Corner Update
RWDI Project Number: 2004669

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind study for the proposed Stonestown Galleria project in San Francisco, California. On August 24, 2022, RWDI issued a Pedestrian Wind Study report which relied on massing received March 15, 2022. Since then, we were informed of the proposed design changes to NW2 and NW3 of the Northwest Block of the project that are being considered. This memo outlines the potential impacts from the proposed changes to the Northwest Block. The conclusions are based on the previous wind study results, our knowledge of the project site and experience with similar projects. As explained below, the number of locations and the total hours of potential hazard exceedances with the revised design of NW2 and NW3 would be similar to those predicted by the previous wind tunnel tests. While wind speeds at two locations may increase with the revised design, wind conditions at two other locations would be expected to improve.

Image 1a shows (approximately) the floor plan of NW2 that was tested in the wind tunnel in 2022, identified in black lines. The proposed floor plan changes to NW2 are shown in red lines with added massing towards the northwest. Image 1b shows the proposed CEQA Envelope Update for NW2 and NW3. The change would regularize the footprint of NW2 and would also include a shift-back of NW3 to accommodate the 50-foot separation between the parcels that is required by the project's proposed Development Agreement.

This document is intended for the sole use of the party to whom it is addressed and may contain information that is privileged and/or confidential. If you have received this in error, please notify us immediately.
® RWDI name and logo are registered trademarks in Canada and the United States of America.

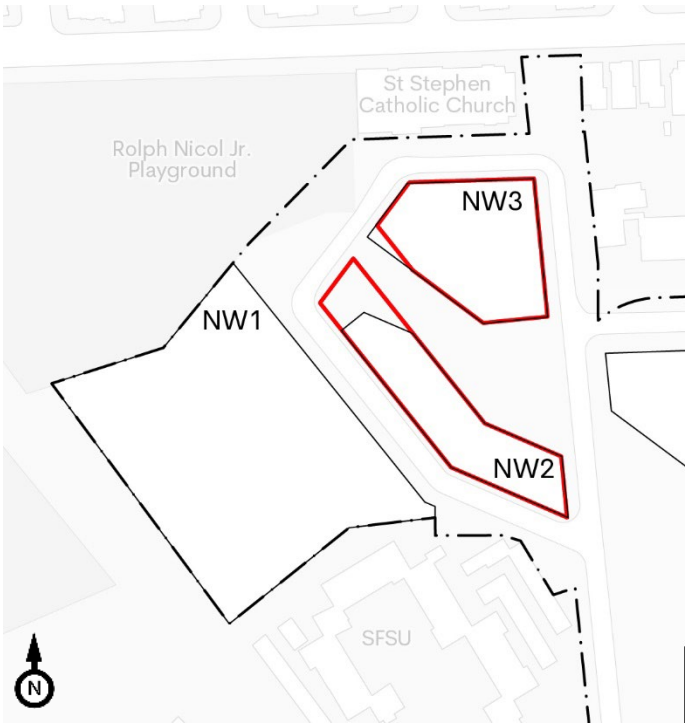


Image 1a: Changes to floorplan for NW2 and NW3 indicated in black (wind tunnel tested) and red lines (considered for CEQA envelope update), received on January 17, 2024.

Image 1b: Proposed CEQA envelope update, received December 7th, 2023.

The wind tunnel tests in 2022 predicted wind hazard exceedances at five locations around the three buildings within the NW Block (Locations 70, 81, 89, 94 and 95 in Image 2) for the Existing + Project and Project + Variant Configurations. The total exceedance number was reduced to three (Locations 81, 89 and 94) for the Project + Cumulative configuration. These hazard exceedances were primarily caused by the prevailing winds from the west-northwest and west directions.

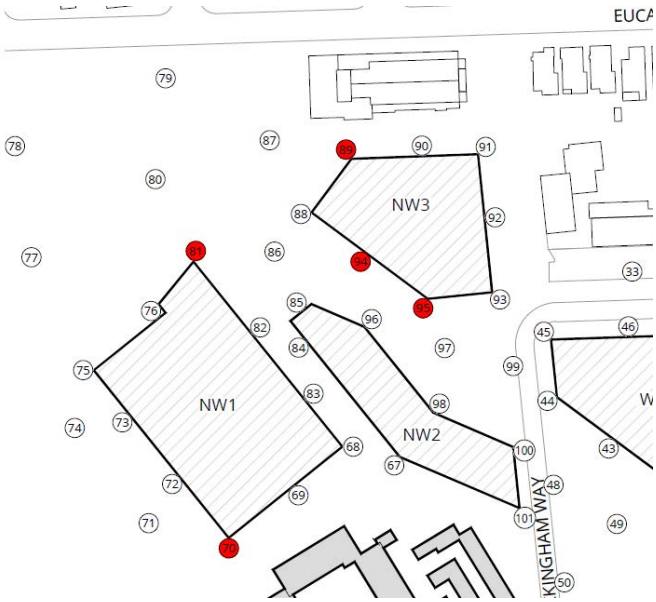


Image 2: Wind Tunnel Results for the Existing + Project and Project + Variant Configurations

Based on the local wind climate, the previous wind tunnel results, and the proposed floor plan changes to NW2 and NW3, it is our opinion that:

- The minor changes proposed to the NW corner would result in localized wind changes in the NW corner and would not substantially affect other portions of the proposed project.

- It was observed in the wind tunnel testing that the prevailing west-northwest and west winds accelerated around the north corner of NW1, resulting in a hazard exceedance at Location 81, as well as along the southwest façade of NW3 (Locations 94 and 95 in Image 2). If NW2 were extended towards Location 86, as currently proposed, the gap between NW2 and NW3 would be sheltered by the added NW2 massing from the prevailing west-northwest and west winds, likely creating improved wind conditions and avoiding hazard exceedances at Locations 94 and 95. However, wind speeds at Locations 86 and 88 might increase due to the added massing of NW2, potentially resulting in new hazard exceedances at those locations.

- With the proposed expansion, other hazard exceedances at Location 70, 81 and 89 would likely remain, as these locations would remain exposed to the prevailing winds.

- Overall, the number of locations and the total hours of potential hazard exceedances with the revised design of NW2 and NW3 would be similar to those identified in the previous wind tunnel tests.

It is our understanding that more architectural details will be included as the building design progresses. Together with the existing and proposed landscaping, which was not included in the initial wind tunnel testing, further improvements in wind conditions are expected on and around the project.

We trust this satisfies your current requirements. Please do not hesitate to contact us should you have any questions or require additional assistant.

Yours truly,

Rowan Williams Davies & Irwin Inc. (RWDI)

Hanqing Wu, Ph.D., P.Eng.
Senior Technical Director / Principal

Dan Bacon
Senior Project Manager / Principal

ATTACHMENT H

Revised Variant Shadow Memorandum

FASTCAST

Florentina Craciun
Senior Environmental Planner
City and County of San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

January 16, 2024

Stonestown Development Revised Variant Memorandum

I. Introduction and Overview

This memorandum describes the results of a supplemental shadow analysis conducted by Fastcast to determine the shadow effects of changes to the Stonestown Development Project. The changes consist of design revisions to the draft EIR variant on Blocks NW2 and NW3 of the proposed Sonestown Development Project and are referred to herein as the "revised variant." This memorandum addresses only potential shadow impacts on Rolph Nicol Jr. Playground, which is the only open space protected under Section 295 of the San Francisco Planning Code that would be affected differently by shadow from the revised variant than by shadow from the proposed project or draft EIR variant, each of which would cast the same shadows on this open space. This memorandum is presented as a comparison to the shadow analysis documented in the published Sonestown Shadow Report dated October 2022 and amended in April 2023. The scope of this analysis was approved by the San Francisco Planning Department.

II. Revised Variant

The project changes and the subject of this comparison analysis are limited to the proposed building massing identified as NW2 and NW3 located at the northwest block of the project site as shown in Figure 1.

Figure 1. Revised Variant Massing at NW2-NW3

III. Shadow Results of Revised Variant vs Draft EIR Variant

The results of the quantified shadow comparison on Rolph Nicol Jr. Playground between the draft EIR variant and the revised variant are provided in Table 1.[1]

ROLPH NICOL JR. PLAYGROUND ANNUAL SHADOW LOADS / SQUARE FOOT HOURS (sfh)			
Existing / Current Shadow	Draft EIR Variant	Revised Variant	Difference between Draft EIR Variant & Revised Variant
1.24%	9.87%	11.05%	1.18%
5,930,716 sfh	47,347,221 sfh	53,029,802 sfh	5,682,582 sfh

Rolph Nicol Jr. Playground Annual Shadow Load with Draft EIR Variant (sfh)	11.11% (53,277,936 sfh)
Rolph Nicol Jr. Playground Annual Shadow Load with Revised Variant (sfh)	12.29% (58,960,518 sfh)

Range in existing shadow area coverage throughout the year	Between 0% - 23%
Time of year / time of day most affected by existing shadow	Summer / Early Morning (before 8:00 AM)

DRAFT EIR VARIANT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	Year-round
Date(s) with most sfh net new shadow	December 20 & December 21
Season / Time of day most affected by net new shadow	Fall / Early Morning (before 8:00 AM)
Area of largest net new shadow (date and time)	95,566 sf (December 20 & December 21 @ 8:19 AM)
Percentage of Rolph Nicol Jr. Playground covered by largest shadow	74.11%
Range in shadow coverage throughout the year (area range)	Between 0% - 74% (0 - 95,566 sf)
Average shadow size across affected dates (percent coverage)	18,959 sf (14.70%)
Date(s) with the longest duration of net new shadow (duration)	October 25 & February 15 (8 hr 38 min +/- 7 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 8 hr 38 min (+/- 7 min)
Average daily net new shadow duration across affected dates	7 hr 32 min

REVISED VARIANT NET NEW SHADOW DETAILS	
Days net new shadow would occur (date range)	Year-round
Date(s) with most sfh net new shadow	December 20 & December 21
Season / Time of day most affected by net new shadow	Fall / Early Morning (before 8:00 AM)
Area of largest net new shadow (date and time)	111,104 sf (Dec 13/Dec 28 @ 8:15 AM)
Percentage of Rolph Nicol Jr. Playground covered by largest shadow	86.16%
Range in shadow coverage throughout the year (area range)	Between 0% - 86% (0 - 111,104 sf)
Average shadow size across affected dates (percent coverage)	21,383 sf (16.58%)
Date(s) with the longest duration of net new shadow (duration)	Oct 25/Feb 15 (8 hr 38 min +/- 7 min)
Range in daily net new shadow duration across affected dates	Between zero minutes up to 8 hr 38 min (+/- 7 min)
Average daily net new shadow duration across affected dates	7 hr 32 min

[1] The proposed project would have the same shadow effect on Rolph Nicol Jr. Playground as the draft EIR variant. Accordingly, the proposed project is not discussed further here.

IV. Draft EIR Variant and Revised Variant Comparison

The draft EIR variant would result in net new shadow falling on the park, adding approximately 47,347,221 net new annual sfh of shadow and increasing the sfh of shadow by 9.87% above current levels, resulting in annual total shadow of 11.11% of TAAS. The revised variant would add approximately 53,029,802 net new annual sfh of shadow increasing the sfh of shadow by 11.05% above current levels, resulting in annual total shadow of 12.29% of TAAS. The revised variant represents an increase of 5,682,582 sfh or 1.18% in TAAS shadow annually.

Net new shadow from the draft EIR variant and the revised variant would occur year-round during the morning hours and recede as the sun rises to midday. The days of maximum net new shadow on the park due to the draft EIR variant would occur on and around the winter solstice at 8:00 AM, when the draft EIR variant would shade approximately 74%% of the park, with new shadow falling on the majority of the wooded area in the western half of the park, most of the grassy field, the northeastern edge along the Eucalyptus Drive entry point, and the eastern edge of the children's play area. The days of maximum shadow from the revised variant would occur on December 13/December 28 at or near 8:15 AM and shade approximately 86% of the park in the same area as the draft EIR variant. Shadows from the revised variant would extend slightly longer than the draft EIR variant shadow, extending northwest across the park covering approximately 12% more area during maximum potential impact.

Both the draft EIR variant and the revised variant shadows during the days of maximum shadow are present throughout most of the daylight hours with the greatest shadow coverage occurring during the early morning hours.

In terms of the differences in shadow between the draft EIR variant and revised variant, the revised variant would cast a maximum of 207 square feet more shadow on Rolph Nicol Jr. Playground than would the draft EIR variant at any given time. This added shadow, covering 0.16 percent of the park, would fall only near the southwest corner of the park, in one of the park's most densely forested areas. The revised variant would add no additional shadow beyond that from the draft EIR variant after 12:00 noon.

On the spring/fall equinoxes, the revised variant would add as much as 10 percent more shadow to the park, covering about 12,850 square feet, at any given time, compared to the draft EIR variant. This would occur at 8:00 a.m. The most substantial increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9:00 a.m., and nearly all of this added shadow would fall on the grove of trees along the park's southern edge. A small amount of added shadow would also fall on the southern portion of the pathway leading from the park to the project site. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 3 percent of the park area. The revised variant would not generate any additional shadow on the children's play area on the spring/fall equinoxes, compared to the draft EIR variant. That is, as with the draft EIR variant, shadow (cast by the building on Block NW3, not NW2) would leave the children's play area by 9:00 a.m. Also as with the draft EIR variant, the revised variant would cast very little shadow on the park's grassy area.

On the winter solstice, the revised variant would add as much as 12 percent more shadow to the park, covering about 15,500 square feet, at any given time, compared to the draft EIR variant. This would occur at 8:19 a.m. The largest increases in instantaneous shadow from the revised variant, compared to the draft EIR variant, would occur before 9:00 a.m. By 9:30 a.m., additional shadow from the revised variant, compared to the draft EIR variant, would cover less than 4 percent of the park area. Added shadow from the revised variant, compared to the draft EIR variant, would fall primarily on the grassy area in the center of the park. Between about 9:45 and 11:15 a.m. on the winter solstice, the revised variant would cast new shadow on the children's play area when it would not be shaded by the draft EIR variant. For a few minutes, this new shadow would fully cover the play area, but in general, the revised variant would shade only part of the play area at any given time.

On an annual basis, the greatest increase in shadow cast by the revised variant, compared to the draft EIR variant, would occur in February and October. The greatest instantaneous increment would occur on October 18, at 8:30 a.m., when the revised variant would shade nearly 20 percent more of the park (about 25,235 square feet) than would the draft EIR variant. (Conditions on February 22 would be similar.) This added shadow would fall primarily on the grassy area in the center of the park and the trees along the park's southern edge. The revised variant would cast no additional shadow on the children's play area on this date, compared to the draft EIR variant.

Exhibit A depicts the shadow projections for both the Draft EIR variant and the alternative variant on the maximum shadow coverage day of October 18th from 8:23 AM to 12:00 Noon. Also includes annual hourly shadow projections for the alternative variant.

Exhibit B summarizes in detail the annual shadow calculation results and compares the Draft EIR totals with the alternative variant results.

Exhibit C Annual hourly shadow projections for the alternative variant.

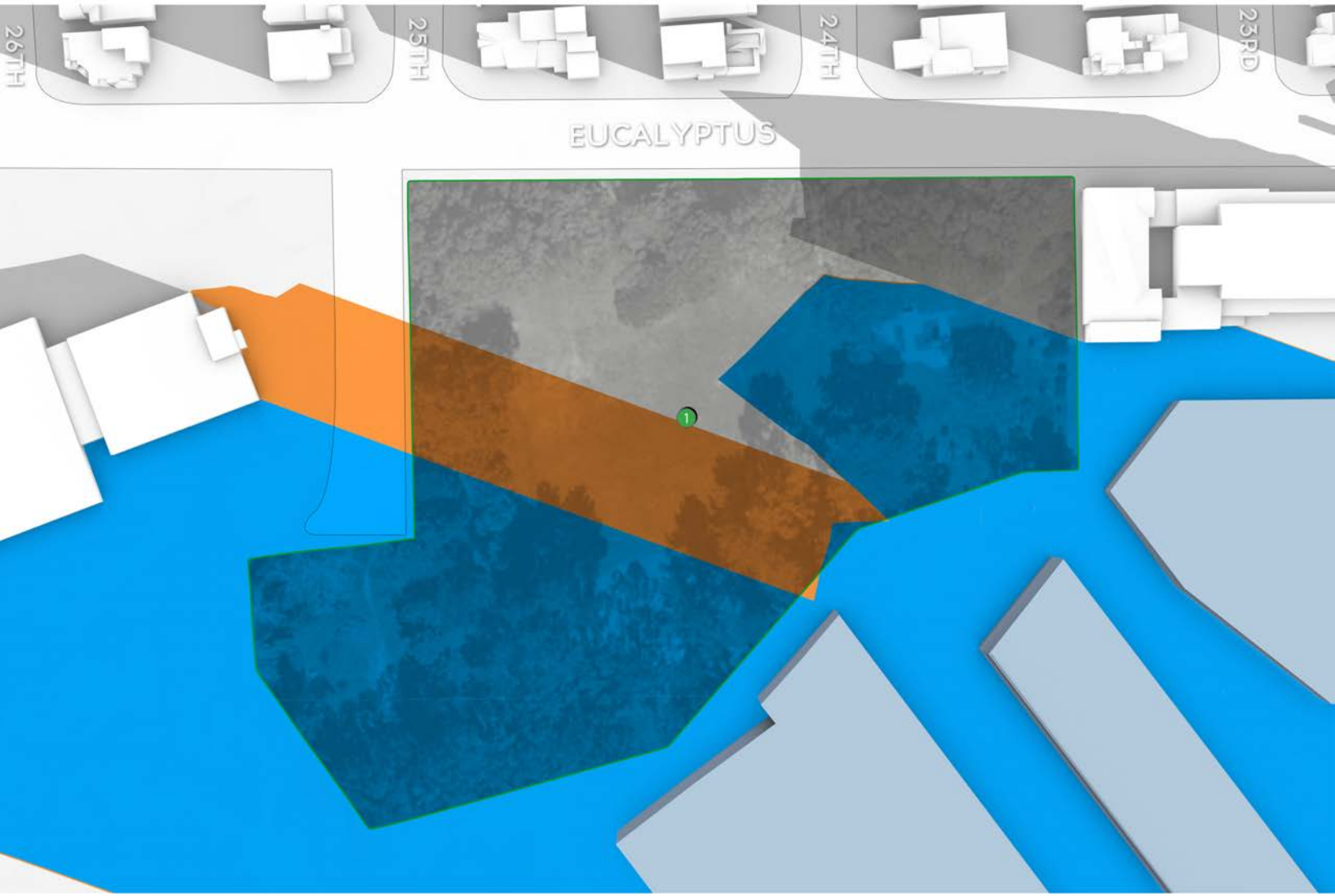
FASTCAST

EXHIBIT A:

SHADOW PROJECTIONS - MAXIMUM COVERAGE
INCREASE OF REVISED VARIANT (OCTOBER 18TH)

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

8:23 AM

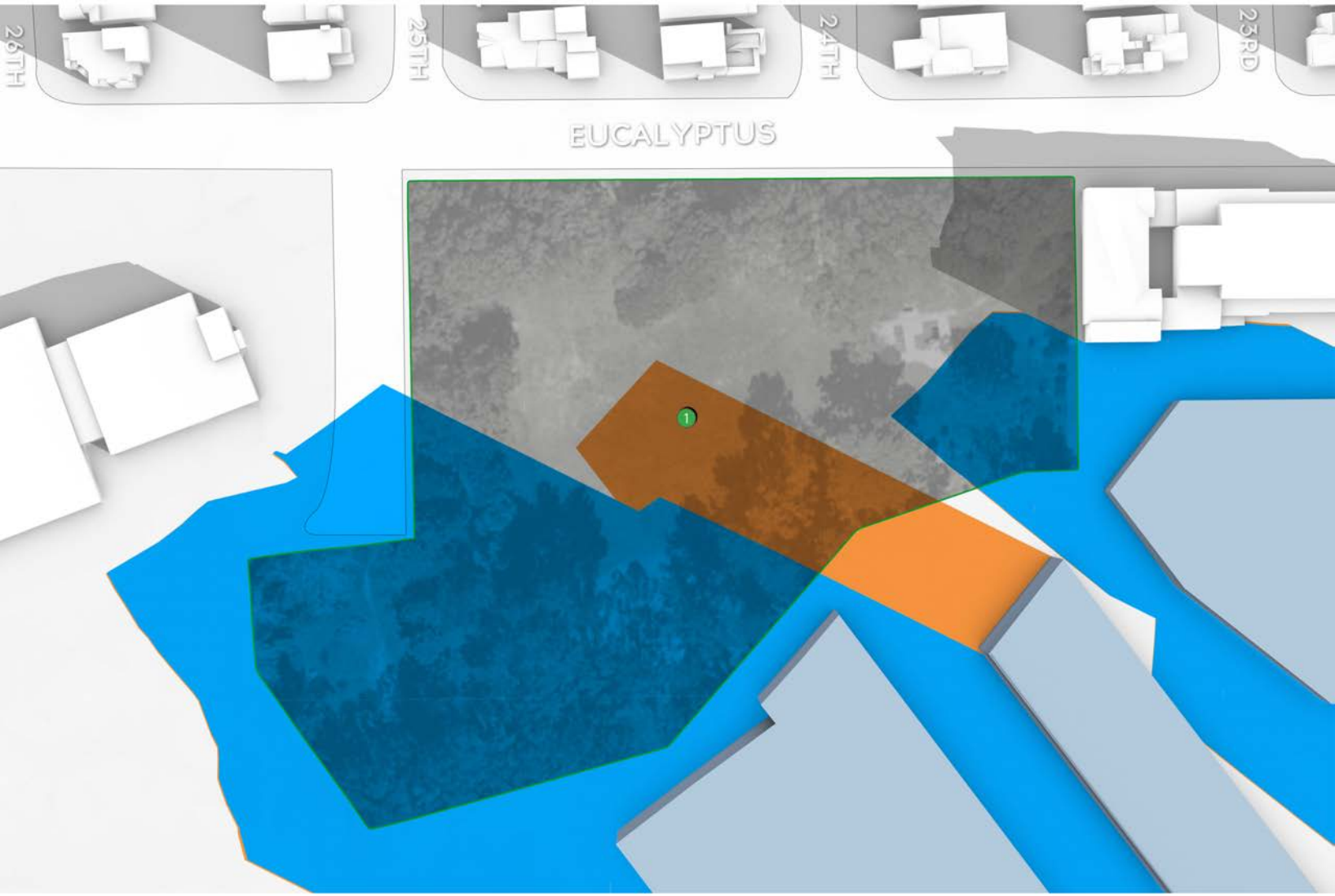
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
8:22 AM	11,065 sf	8.58%	61,073 sf	47.36%	84,709 sf	65.69%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

9:00 AM

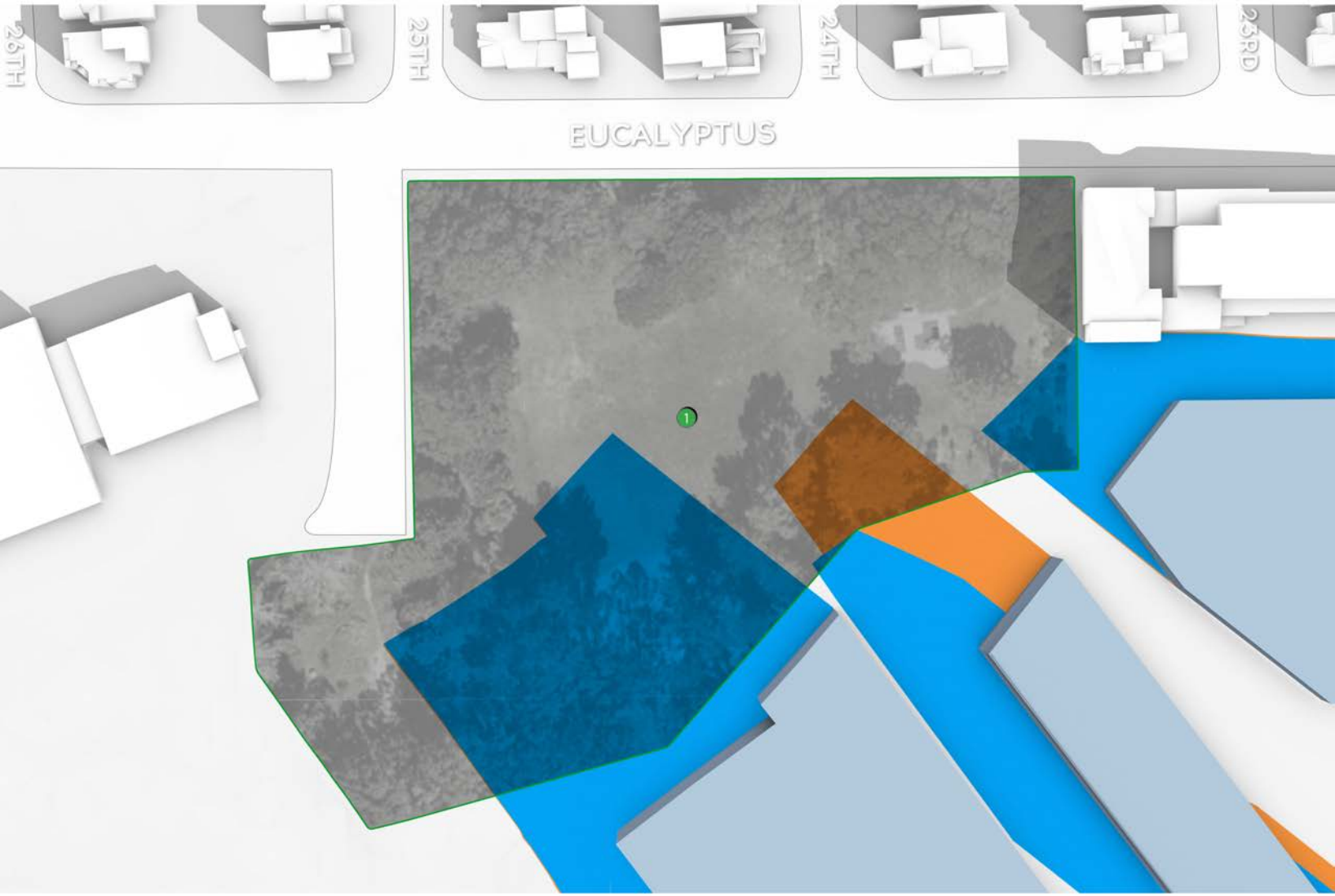
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
9:00 AM	6,157 sf	4.78%	55,055 sf	42.70%	68,942 sf	53.47%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

10:00 AM

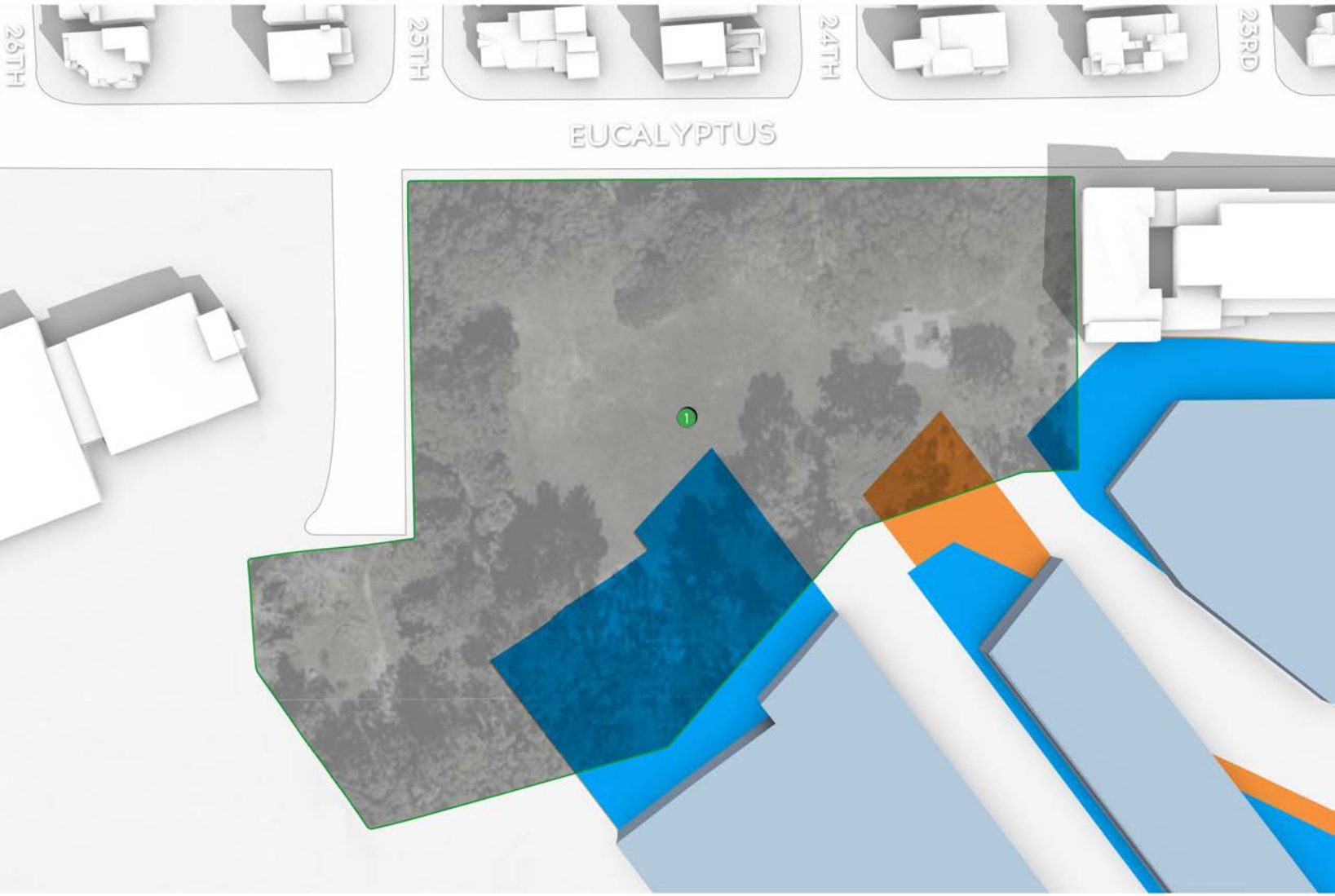
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
10:00 AM	3,044 sf	2.36%	36,078 sf	27.98%	41,238 sf	31.98%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

11:00 AM

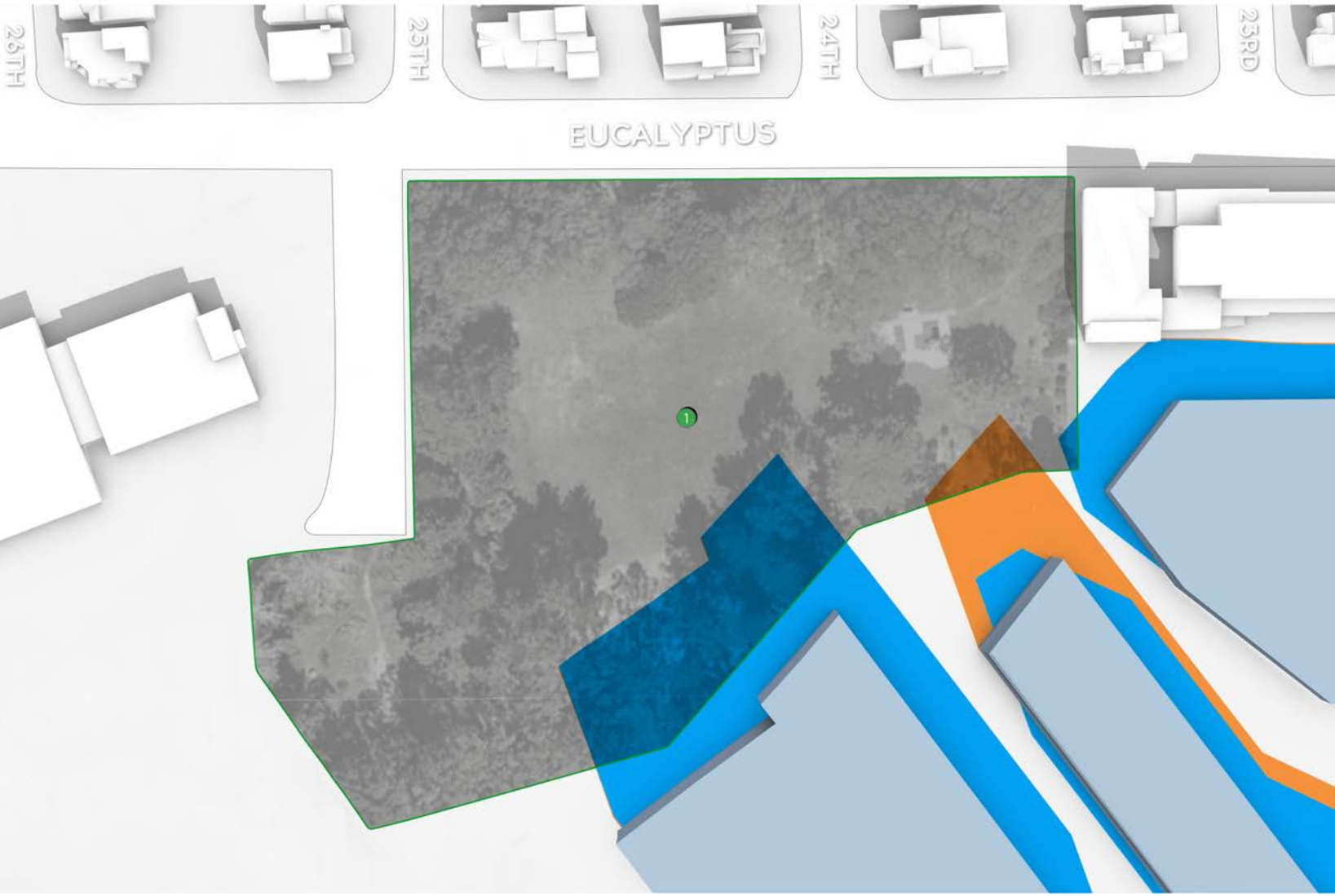
LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
11:00 AM	1,481 sf	1.15%	21,995 sf	17.06%	24,289 sf	18.84%	

STONESTOWN PROJECT (REVISED VARIANT) - SHADOW IMPACT ON ROLPH NICOL PLAYGROUND

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project
- Proposed Project's Net New Shadow
- Revised Variant's Net New Shadow
- Open/Public Spaces
- 1 Rolph Nicol Playground

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	Existing | Project Variant | Rev Variant | Sunlight
12:00 PM	422 sf	0.33%	15,950 sf	12.37%	17,360 sf	13.46%	

FASTCAST

EXHIBIT B:

ANNUAL SHADOW CALCULATION OF DRAFT EIR VARIANT AND REVISED VARIANT

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

June 21

Summer solstice
Analysis hours: 6:46 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:46 AM	29,224 sf	22.66%	9,670 sf	7.50%	9,865 sf	7.65%	
7:00 AM	17,186 sf	13.33%	10,029 sf	7.78%	10,236 sf	7.94%	
7:15 AM	12,029 sf	9.33%	11,478 sf	8.90%	11,628 sf	9.02%	
7:30 AM	9,264 sf	7.18%	13,027 sf	10.10%	13,145 sf	10.19%	
7:45 AM	7,399 sf	5.74%	14,043 sf	10.89%	14,134 sf	10.96%	
8:00 AM	6,206 sf	4.81%	14,005 sf	10.86%	14,076 sf	10.92%	
8:15 AM	5,253 sf	4.07%	13,255 sf	10.28%	13,356 sf	10.36%	
8:30 AM	4,485 sf	3.48%	12,465 sf	9.67%	12,505 sf	9.70%	
8:45 AM	3,858 sf	2.99%	11,675 sf	9.05%	11,704 sf	9.08%	
9:00 AM	3,345 sf	2.59%	10,855 sf	8.42%	10,874 sf	8.43%	
9:15 AM	2,907 sf	2.25%	10,043 sf	7.79%	10,059 sf	7.80%	
9:30 AM	2,529 sf	1.96%	9,231 sf	7.16%	9,244 sf	7.17%	
9:45 AM	2,219 sf	1.72%	8,522 sf	6.61%	8,531 sf	6.62%	
10:00 AM	1,947 sf	1.51%	7,792 sf	6.04%	7,799 sf	6.05%	
10:15 AM	1,700 sf	1.32%	7,140 sf	5.54%	7,145 sf	5.54%	
10:30 AM	1,468 sf	1.14%	6,453 sf	5.00%	6,457 sf	5.01%	
10:45 AM	1,249 sf	0.97%	5,835 sf	4.53%	5,838 sf	4.53%	
11:00 AM	1,045 sf	0.81%	5,161 sf	4.00%	5,162 sf	4.00%	
11:15 AM	851 sf	0.66%	4,572 sf	3.55%	4,573 sf	3.55%	
11:30 AM	668 sf	0.52%	3,911 sf	3.03%	3,912 sf	3.03%	
11:45 AM	487 sf	0.38%	3,351 sf	2.60%	3,350 sf	2.60%	
12:00 PM	316 sf	0.25%	2,697 sf	2.09%	2,697 sf	2.09%	
12:15 PM	149 sf	0.12%	2,151 sf	1.67%	2,151 sf	1.67%	
12:30 PM	32 sf	0.02%	1,497 sf	1.16%	1,499 sf	1.16%	
12:45 PM	0 sf	0.00%	1,007 sf	0.78%	1,007 sf	0.78%	
1:00 PM	0 sf	0.00%	451 sf	0.35%	451 sf	0.35%	
1:15 PM	0 sf	0.00%	95 sf	0.07%	95 sf	0.07%	
1:30 PM	0 sf	0.00%	5 sf	0.00%	5 sf	0.00%	
1:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

June 28

Mirror date: June 14
Analysis hours: 6:48 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:48 AM	29,018 sf	22.50%	9,965 sf	7.73%	10,180 sf	7.90%	
7:00 AM	18,212 sf	14.12%	10,207 sf	7.92%	10,427 sf	8.09%	
7:15 AM	12,521 sf	9.71%	11,449 sf	8.88%	11,606 sf	9.00%	
7:30 AM	9,563 sf	7.42%	13,015 sf	10.09%	13,140 sf	10.19%	
7:45 AM	7,585 sf	5.88%	14,151 sf	10.97%	14,244 sf	11.05%	
8:00 AM	6,342 sf	4.92%	14,279 sf	11.07%	14,351 sf	11.13%	
8:15 AM	5,359 sf	4.16%	13,488 sf	10.46%	13,598 sf	10.55%	
8:30 AM	4,576 sf	3.55%	12,710 sf	9.86%	12,765 sf	9.90%	
8:45 AM	3,931 sf	3.05%	11,904 sf	9.23%	11,934 sf	9.26%	
9:00 AM	3,396 sf	2.63%	11,055 sf	8.57%	11,076 sf	8.59%	
9:15 AM	2,957 sf	2.29%	10,253 sf	7.95%	10,270 sf	7.96%	
9:30 AM	2,572 sf	1.99%	9,431 sf	7.31%	9,444 sf	7.32%	
9:45 AM	2,257 sf	1.75%	8,694 sf	6.74%	8,703 sf	6.75%	
10:00 AM	1,978 sf	1.53%	7,951 sf	6.17%	7,959 sf	6.17%	
10:15 AM	1,728 sf	1.34%	7,292 sf	5.66%	7,297 sf	5.66%	
10:30 AM	1,495 sf	1.16%	6,592 sf	5.11%	6,596 sf	5.12%	
10:45 AM	1,275 sf	0.99%	5,967 sf	4.63%	5,970 sf	4.63%	
11:00 AM	1,069 sf	0.83%	5,290 sf	4.10%	5,291 sf	4.10%	
11:15 AM	873 sf	0.68%	4,692 sf	3.64%	4,693 sf	3.64%	
11:30 AM	687 sf	0.53%	4,025 sf	3.12%	4,026 sf	3.12%	
11:45 AM	507 sf	0.39%	3,459 sf	2.68%	3,459 sf	2.68%	
12:00 PM	337 sf	0.26%	2,806 sf	2.18%	2,806 sf	2.18%	
12:15 PM	165 sf	0.13%	2,253 sf	1.75%	2,253 sf	1.75%	
12:30 PM	42 sf	0.03%	1,587 sf	1.23%	1,586 sf	1.23%	
12:45 PM	0 sf	0.00%	1,096 sf	0.85%	1,098 sf	0.85%	
1:00 PM	0 sf	0.00%	524 sf	0.41%	525 sf	0.41%	
1:15 PM	0 sf	0.00%	131 sf	0.10%	131 sf	0.10%	
1:30 PM	0 sf	0.00%	11 sf	0.01%	11 sf	0.01%	
1:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 5

Mirror date: June 7
Analysis hours: 6:52 AM-7:36 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:52 AM	27,966 sf	21.69%	10,856 sf	8.42%	11,116 sf	8.62%	
7:00 AM	19,708 sf	15.28%	10,909 sf	8.46%	11,138 sf	8.64%	
7:15 AM	13,277 sf	10.30%	11,752 sf	9.11%	11,919 sf	9.24%	
7:30 AM	10,015 sf	7.77%	13,310 sf	10.32%	13,443 sf	10.43%	
7:45 AM	7,851 sf	6.09%	14,572 sf	11.30%	14,671 sf	11.38%	
8:00 AM	6,535 sf	5.07%	14,815 sf	11.49%	14,891 sf	11.55%	
8:15 AM	5,504 sf	4.27%	14,074 sf	10.91%	14,220 sf	11.03%	
8:30 AM	4,695 sf	3.64%	13,277 sf	10.30%	13,374 sf	10.37%	
8:45 AM	4,022 sf	3.12%	12,433 sf	9.64%	12,465 sf	9.67%	
9:00 AM	3,481 sf	2.70%	11,571 sf	8.97%	11,594 sf	8.99%	
9:15 AM	3,017 sf	2.34%	10,732 sf	8.32%	10,748 sf	8.34%	
9:30 AM	2,630 sf	2.04%	9,856 sf	7.64%	9,868 sf	7.65%	
9:45 AM	2,305 sf	1.79%	9,083 sf	7.04%	9,092 sf	7.05%	
10:00 AM	2,024 sf	1.57%	8,302 sf	6.44%	8,310 sf	6.44%	
10:15 AM	1,768 sf	1.37%	7,612 sf	5.90%	7,617 sf	5.91%	
10:30 AM	1,527 sf	1.18%	6,887 sf	5.34%	6,891 sf	5.34%	
10:45 AM	1,307 sf	1.01%	6,245 sf	4.84%	6,248 sf	4.85%	
11:00 AM	1,097 sf	0.85%	5,547 sf	4.30%	5,549 sf	4.30%	
11:15 AM	898 sf	0.70%	4,935 sf	3.83%	4,936 sf	3.83%	
11:30 AM	712 sf	0.55%	4,250 sf	3.30%	4,252 sf	3.30%	
11:45 AM	529 sf	0.41%	3,670 sf	2.85%	3,670 sf	2.85%	
12:00 PM	355 sf	0.28%	3,002 sf	2.33%	3,002 sf	2.33%	
12:15 PM	184 sf	0.14%	2,440 sf	1.89%	2,440 sf	1.89%	
12:30 PM	51 sf	0.04%	1,767 sf	1.37%	1,767 sf	1.37%	
12:45 PM	0 sf	0.00%	1,246 sf	0.97%	1,248 sf	0.97%	
1:00 PM	0 sf	0.00%	661 sf	0.51%	661 sf	0.51%	
1:15 PM	0 sf	0.00%	226 sf	0.18%	226 sf	0.18%	
1:30 PM	0 sf	0.00%	27 sf	0.02%	27 sf	0.02%	
1:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:36 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 12

Mirror date: May 31
Analysis hours: 6:56 AM-7:33 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
6:56 AM	26,388 sf	20.46%	12,461 sf	9.66%	12,739 sf	9.88%	
7:00 AM	22,476 sf	17.43%	12,402 sf	9.62%	12,642 sf	9.80%	
7:15 AM	14,359 sf	11.14%	12,647 sf	9.81%	12,728 sf	9.87%	
7:30 AM	10,646 sf	8.26%	13,939 sf	10.81%	14,084 sf	10.92%	
7:45 AM	8,248 sf	6.40%	15,264 sf	11.84%	15,373 sf	11.92%	
8:00 AM	6,775 sf	5.25%	15,648 sf	12.14%	15,751 sf	12.22%	
8:15 AM	5,689 sf	4.41%	15,014 sf	11.64%	15,238 sf	11.82%	
8:30 AM	4,829 sf	3.75%	14,141 sf	10.97%	14,313 sf	11.10%	
8:45 AM	4,141 sf	3.21%	13,275 sf	10.30%	13,311 sf	10.32%	
9:00 AM	3,568 sf	2.77%	12,355 sf	9.58%	12,380 sf	9.60%	
9:15 AM	3,095 sf	2.40%	11,476 sf	8.90%	11,495 sf	8.91%	
9:30 AM	2,695 sf	2.09%	10,543 sf	8.18%	10,557 sf	8.19%	
9:45 AM	2,372 sf	1.84%	9,689 sf	7.51%	9,699 sf	7.52%	
10:00 AM	2,083 sf	1.62%	8,846 sf	6.86%	8,855 sf	6.87%	
10:15 AM	1,818 sf	1.41%	8,110 sf	6.29%	8,118 sf	6.30%	
10:30 AM	1,570 sf	1.22%	7,339 sf	5.69%	7,344 sf	5.70%	
10:45 AM	1,347 sf	1.04%	6,671 sf	5.17%	6,675 sf	5.18%	
11:00 AM	1,133 sf	0.88%	5,936 sf	4.60%	5,938 sf	4.61%	
11:15 AM	929 sf	0.72%	5,300 sf	4.11%	5,301 sf	4.11%	
11:30 AM	735 sf	0.57%	4,590 sf	3.56%	4,591 sf	3.56%	
11:45 AM	552 sf	0.43%	3,987 sf	3.09%	3,988 sf	3.09%	
12:00 PM	377 sf	0.29%	3,294 sf	2.55%	3,294 sf	2.55%	
12:15 PM	200 sf	0.15%	2,717 sf	2.11%	2,718 sf	2.11%	
12:30 PM	62 sf	0.05%	2,030 sf	1.57%	2,031 sf	1.57%	
12:45 PM	0 sf	0.00%	1,484 sf	1.15%	1,487 sf	1.15%	
1:00 PM	0 sf	0.00%	854 sf	0.66%	854 sf	0.66%	
1:15 PM	0 sf	0.00%	387 sf	0.30%	387 sf	0.30%	
1:30 PM	0 sf	0.00%	63 sf	0.05%	63 sf	0.05%	
1:45 PM	0 sf	0.00%	5 sf	0.00%	5 sf	0.00%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:33 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 19

Mirror date: May 24
Analysis hours: 7:01 AM-7:30 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:01 AM	24,679 sf	19.14%	14,776 sf	11.46%	14,977 sf	11.62%	
7:16 AM	15,290 sf	11.86%	14,396 sf	11.16%	14,396 sf	11.16%	
7:30 AM	11,449 sf	8.88%	14,949 sf	11.59%	15,105 sf	11.71%	
7:45 AM	8,781 sf	6.81%	16,203 sf	12.57%	16,331 sf	12.67%	
8:00 AM	7,081 sf	5.49%	16,853 sf	13.07%	17,115 sf	13.27%	
8:15 AM	5,899 sf	4.57%	16,308 sf	12.65%	16,685 sf	12.94%	
8:30 AM	5,000 sf	3.88%	15,380 sf	11.93%	15,683 sf	12.16%	
8:45 AM	4,274 sf	3.31%	14,420 sf	11.18%	14,559 sf	11.29%	
9:00 AM	3,672 sf	2.85%	13,414 sf	10.40%	13,442 sf	10.42%	
9:15 AM	3,181 sf	2.47%	12,485 sf	9.68%	12,505 sf	9.70%	
9:30 AM	2,780 sf	2.16%	11,495 sf	8.91%	11,511 sf	8.93%	
9:45 AM	2,448 sf	1.90%	10,514 sf	8.15%	10,526 sf	8.16%	
10:00 AM	2,144 sf	1.66%	9,578 sf	7.43%	9,586 sf	7.43%	
10:15 AM	1,874 sf	1.45%	8,770 sf	6.80%	8,778 sf	6.81%	
10:30 AM	1,620 sf	1.26%	7,942 sf	6.16%	7,948 sf	6.16%	
10:45 AM	1,389 sf	1.08%	7,224 sf	5.60%	7,227 sf	5.61%	
11:00 AM	1,166 sf	0.90%	6,457 sf	5.01%	6,460 sf	5.01%	
11:15 AM	959 sf	0.74%	5,777 sf	4.48%	5,778 sf	4.48%	
11:30 AM	765 sf	0.59%	5,030 sf	3.90%	5,031 sf	3.90%	
11:45 AM	574 sf	0.45%	4,398 sf	3.41%	4,398 sf	3.41%	
12:00 PM	395 sf	0.31%	3,681 sf	2.86%	3,682 sf	2.86%	
12:15 PM	218 sf	0.17%	3,076 sf	2.39%	3,076 sf	2.39%	
12:30 PM	73 sf	0.06%	2,366 sf	1.83%	2,364 sf	1.83%	
12:45 PM	0 sf	0.00%	1,794 sf	1.39%	1,796 sf	1.39%	
1:00 PM	0 sf	0.00%	1,121 sf	0.87%	1,121 sf	0.87%	
1:15 PM	0 sf	0.00%	607 sf	0.47%	607 sf	0.47%	
1:30 PM	0 sf	0.00%	126 sf	0.10%	126 sf	0.10%	
1:45 PM	0 sf	0.00%	29 sf	0.02%	29 sf	0.02%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

July 26

Mirror date: May 17
Analysis hours: 7:07 AM-7:25 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:07 AM	23,119 sf	17.93%	17,638 sf	13.68%	17,720 sf	13.74%	
7:15 AM	17,903 sf	13.88%	16,927 sf	13.13%	16,902 sf	13.11%	
7:30 AM	12,409 sf	9.62%	16,569 sf	12.85%	16,661 sf	12.92%	
7:45 AM	9,438 sf	7.32%	17,500 sf	13.57%	17,684 sf	13.71%	
8:00 AM	7,433 sf	5.76%	18,361 sf	14.24%	18,914 sf	14.67%	
8:15 AM	6,150 sf	4.77%	18,005 sf	13.96%	18,642 sf	14.46%	
8:30 AM	5,193 sf	4.03%	16,963 sf	13.16%	17,492 sf	13.57%	
8:45 AM	4,424 sf	3.43%	15,893 sf	12.33%	16,214 sf	12.57%	
9:00 AM	3,800 sf	2.95%	14,791 sf	11.47%	14,869 sf	11.53%	
9:15 AM	3,280 sf	2.54%	13,762 sf	10.67%	13,784 sf	10.69%	
9:30 AM	2,882 sf	2.24%	12,698 sf	9.85%	12,715 sf	9.86%	
9:45 AM	2,534 sf	1.97%	11,564 sf	8.97%	11,577 sf	8.98%	
10:00 AM	2,219 sf	1.72%	10,519 sf	8.16%	10,530 sf	8.17%	
10:15 AM	1,935 sf	1.50%	9,609 sf	7.45%	9,617 sf	7.46%	
10:30 AM	1,673 sf	1.30%	8,703 sf	6.75%	8,708 sf	6.75%	
10:45 AM	1,432 sf	1.11%	7,918 sf	6.14%	7,922 sf	6.14%	
11:00 AM	1,204 sf	0.93%	7,097 sf	5.50%	7,100 sf	5.51%	
11:15 AM	989 sf	0.77%	6,367 sf	4.94%	6,370 sf	4.94%	
11:30 AM	790 sf	0.61%	5,577 sf	4.32%	5,578 sf	4.33%	
11:45 AM	598 sf	0.46%	4,904 sf	3.80%	4,905 sf	3.80%	
12:00 PM	415 sf	0.32%	4,154 sf	3.22%	4,154 sf	3.22%	
12:15 PM	231 sf	0.18%	3,518 sf	2.73%	3,519 sf	2.73%	
12:30 PM	80 sf	0.06%	2,794 sf	2.17%	2,795 sf	2.17%	
12:45 PM	2 sf	0.00%	2,196 sf	1.70%	2,196 sf	1.70%	
1:00 PM	0 sf	0.00%	1,476 sf	1.14%	1,475 sf	1.14%	
1:15 PM	0 sf	0.00%	905 sf	0.70%	906 sf	0.70%	
1:30 PM	0 sf	0.00%	280 sf	0.22%	280 sf	0.22%	
1:45 PM	0 sf	0.00%	86 sf	0.07%	86 sf	0.07%	
2:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:25 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 2

Mirror date: May 10
Analysis hours: 7:12 AM-7:18 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:12 AM	21,795 sf	16.90%	20,788 sf	16.12%	20,734 sf	16.08%	
7:15 AM	20,231 sf	15.69%	20,393 sf	15.82%	20,305 sf	15.75%	
7:30 AM	13,665 sf	10.60%	19,029 sf	14.76%	18,989 sf	14.73%	
7:45 AM	10,184 sf	7.90%	19,219 sf	14.91%	19,944 sf	15.47%	
8:00 AM	7,878 sf	6.11%	20,140 sf	15.62%	21,169 sf	16.42%	
8:15 AM	6,417 sf	4.98%	20,029 sf	15.53%	21,081 sf	16.35%	
8:30 AM	5,391 sf	4.18%	18,838 sf	14.61%	19,722 sf	15.29%	
8:45 AM	4,582 sf	3.55%	17,670 sf	13.70%	18,266 sf	14.17%	
9:00 AM	3,926 sf	3.05%	16,466 sf	12.77%	16,788 sf	13.02%	
9:15 AM	3,416 sf	2.65%	15,309 sf	11.87%	15,333 sf	11.89%	
9:30 AM	2,998 sf	2.33%	14,133 sf	10.96%	14,151 sf	10.97%	
9:45 AM	2,628 sf	2.04%	12,820 sf	9.94%	12,835 sf	9.95%	
10:00 AM	2,300 sf	1.78%	11,636 sf	9.02%	11,646 sf	9.03%	
10:15 AM	1,998 sf	1.55%	10,607 sf	8.23%	10,616 sf	8.23%	
10:30 AM	1,725 sf	1.34%	9,599 sf	7.44%	9,605 sf	7.45%	
10:45 AM	1,476 sf	1.14%	8,731 sf	6.77%	8,735 sf	6.77%	
11:00 AM	1,240 sf	0.96%	7,829 sf	6.07%	7,832 sf	6.07%	
11:15 AM	1,020 sf	0.79%	7,042 sf	5.46%	7,044 sf	5.46%	
11:30 AM	816 sf	0.63%	6,199 sf	4.81%	6,199 sf	4.81%	
11:45 AM	617 sf	0.48%	5,483 sf	4.25%	5,483 sf	4.25%	
12:00 PM	430 sf	0.33%	4,692 sf	3.64%	4,691 sf	3.64%	
12:15 PM	243 sf	0.19%	4,021 sf	3.12%	4,020 sf	3.12%	
12:30 PM	86 sf	0.07%	3,282 sf	2.54%	3,289 sf	2.55%	
12:45 PM	3 sf	0.00%	2,658 sf	2.06%	2,661 sf	2.06%	
1:00 PM	0 sf	0.00%	1,903 sf	1.48%	1,903 sf	1.48%	
1:15 PM	0 sf	0.00%	1,276 sf	0.99%	1,277 sf	0.99%	
1:30 PM	0 sf	0.00%	579 sf	0.45%	579 sf	0.45%	
1:45 PM	0 sf	0.00%	188 sf	0.15%	188 sf	0.15%	
2:00 PM	0 sf	0.00%	31 sf	0.02%	31 sf	0.02%	
2:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:18 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 9

Mirror date: May 3
Analysis hours: 7:19 AM-7:10 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:19 AM	20,839 sf	16.16%	24,324 sf	18.86%	24,127 sf	18.71%	
7:30 AM	15,308 sf	11.87%	22,224 sf	17.24%	22,753 sf	17.65%	
7:45 AM	11,083 sf	8.60%	21,642 sf	16.78%	23,020 sf	17.85%	
8:00 AM	8,488 sf	6.58%	22,143 sf	17.17%	23,904 sf	18.54%	
8:15 AM	6,723 sf	5.21%	22,266 sf	17.27%	23,942 sf	18.57%	
8:30 AM	5,612 sf	4.35%	21,123 sf	16.38%	22,543 sf	17.48%	
8:45 AM	4,745 sf	3.68%	19,778 sf	15.34%	20,798 sf	16.13%	
9:00 AM	4,098 sf	3.18%	18,418 sf	14.28%	19,065 sf	14.79%	
9:15 AM	3,571 sf	2.77%	17,129 sf	13.28%	17,418 sf	13.51%	
9:30 AM	3,125 sf	2.42%	15,832 sf	12.28%	15,851 sf	12.29%	
9:45 AM	2,730 sf	2.12%	14,296 sf	11.09%	14,312 sf	11.10%	
10:00 AM	2,381 sf	1.85%	12,927 sf	10.03%	12,938 sf	10.03%	
10:15 AM	2,068 sf	1.60%	11,764 sf	9.12%	11,772 sf	9.13%	
10:30 AM	1,781 sf	1.38%	10,636 sf	8.25%	10,642 sf	8.25%	
10:45 AM	1,520 sf	1.18%	9,670 sf	7.50%	9,673 sf	7.50%	
11:00 AM	1,278 sf	0.99%	8,671 sf	6.72%	8,672 sf	6.73%	
11:15 AM	1,051 sf	0.82%	7,816 sf	6.06%	7,814 sf	6.06%	
11:30 AM	837 sf	0.65%	6,912 sf	5.36%	6,909 sf	5.36%	
11:45 AM	632 sf	0.49%	6,147 sf	4.77%	6,141 sf	4.76%	
12:00 PM	440 sf	0.34%	5,297 sf	4.11%	5,291 sf	4.10%	
12:15 PM	252 sf	0.20%	4,581 sf	3.55%	4,587 sf	3.56%	
12:30 PM	89 sf	0.07%	3,834 sf	2.97%	3,839 sf	2.98%	
12:45 PM	3 sf	0.00%	3,185 sf	2.47%	3,189 sf	2.47%	
1:00 PM	0 sf	0.00%	2,399 sf	1.86%	2,401 sf	1.86%	
1:15 PM	0 sf	0.00%	1,721 sf	1.33%	1,722 sf	1.34%	
1:30 PM	0 sf	0.00%	948 sf	0.74%	948 sf	0.73%	
1:45 PM	0 sf	0.00%	376 sf	0.29%	376 sf	0.29%	
2:00 PM	0 sf	0.00%	110 sf	0.09%	110 sf	0.09%	
2:15 PM	0 sf	0.00%	12 sf	0.01%	12 sf	0.01%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:10 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 16

Mirror date: April 26
Analysis hours: 7:25 AM-7:02 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:25 AM	19,717 sf	15.29%	27,846 sf	21.60%	28,879 sf	22.40%	
7:30 AM	17,391 sf	13.49%	26,602 sf	20.63%	27,697 sf	21.48%	
7:45 AM	12,214 sf	9.47%	24,623 sf	19.10%	27,054 sf	20.98%	
8:00 AM	9,153 sf	7.10%	24,524 sf	19.02%	27,163 sf	21.07%	
8:15 AM	7,088 sf	5.50%	24,830 sf	19.26%	27,321 sf	21.19%	
8:30 AM	5,856 sf	4.54%	23,825 sf	18.48%	25,957 sf	20.13%	
8:45 AM	4,978 sf	3.86%	22,219 sf	17.23%	23,808 sf	18.46%	
9:00 AM	4,310 sf	3.34%	20,654 sf	16.02%	21,752 sf	16.87%	
9:15 AM	3,750 sf	2.91%	19,238 sf	14.92%	19,917 sf	15.45%	
9:30 AM	3,259 sf	2.53%	17,787 sf	13.79%	18,022 sf	13.98%	
9:45 AM	2,840 sf	2.20%	15,994 sf	12.40%	16,016 sf	12.42%	
10:00 AM	2,468 sf	1.91%	14,399 sf	11.17%	14,411 sf	11.18%	
10:15 AM	2,141 sf	1.66%	13,085 sf	10.15%	13,092 sf	10.15%	
10:30 AM	1,840 sf	1.43%	11,813 sf	9.16%	11,815 sf	9.16%	
10:45 AM	1,563 sf	1.21%	10,736 sf	8.33%	10,732 sf	8.32%	
11:00 AM	1,310 sf	1.02%	9,635 sf	7.47%	9,627 sf	7.47%	
11:15 AM	1,070 sf	0.83%	8,683 sf	6.73%	8,671 sf	6.72%	
11:30 AM	854 sf	0.66%	7,710 sf	5.98%	7,695 sf	5.97%	
11:45 AM	646 sf	0.50%	6,872 sf	5.33%	6,856 sf	5.32%	
12:00 PM	451 sf	0.35%	5,981 sf	4.64%	5,965 sf	4.63%	
12:15 PM	257 sf	0.20%	5,241 sf	4.06%	5,238 sf	4.06%	
12:30 PM	90 sf	0.07%	4,455 sf	3.45%	4,458 sf	3.46%	
12:45 PM	2 sf	0.00%	3,766 sf	2.92%	3,772 sf	2.93%	
1:00 PM	0 sf	0.00%	2,951 sf	2.29%	2,951 sf	2.29%	
1:15 PM	0 sf	0.00%	2,237 sf	1.73%	2,238 sf	1.74%	
1:30 PM	0 sf	0.00%	1,397 sf	1.08%	1,397 sf	1.08%	
1:45 PM	0 sf	0.00%	729 sf	0.57%	729 sf	0.57%	
2:00 PM	0 sf	0.00%	249 sf	0.19%	249 sf	0.19%	
2:15 PM	0 sf	0.00%	77 sf	0.06%	77 sf	0.06%	
2:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
7:02 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 23

Mirror date: April 19
Analysis hours: 7:31 AM-6:52 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:31 AM	19,062 sf	14.78%	31,533 sf	24.45%	34,112 sf	26.45%	
7:45 AM	13,549 sf	10.51%	28,090 sf	21.78%	32,173 sf	24.95%	
8:00 AM	9,937 sf	7.71%	27,405 sf	21.25%	31,219 sf	24.21%	
8:15 AM	7,581 sf	5.88%	27,612 sf	21.41%	31,135 sf	24.15%	
8:30 AM	6,173 sf	4.79%	26,857 sf	20.83%	29,855 sf	23.15%	
8:45 AM	5,273 sf	4.09%	24,979 sf	19.37%	27,288 sf	21.16%	
9:00 AM	4,543 sf	3.52%	23,214 sf	18.00%	24,881 sf	19.30%	
9:15 AM	3,929 sf	3.05%	21,601 sf	16.75%	22,765 sf	17.66%	
9:30 AM	3,403 sf	2.64%	19,964 sf	15.48%	20,650 sf	16.01%	
9:45 AM	2,949 sf	2.29%	17,889 sf	13.87%	18,120 sf	14.05%	
10:00 AM	2,546 sf	1.97%	16,046 sf	12.44%	16,112 sf	12.50%	
10:15 AM	2,190 sf	1.70%	14,537 sf	11.27%	14,567 sf	11.30%	
10:30 AM	1,876 sf	1.45%	13,107 sf	10.16%	13,107 sf	10.16%	
10:45 AM	1,588 sf	1.23%	11,894 sf	9.22%	11,876 sf	9.21%	
11:00 AM	1,328 sf	1.03%	10,671 sf	8.28%	10,645 sf	8.26%	
11:15 AM	1,088 sf	0.84%	9,623 sf	7.46%	9,590 sf	7.44%	
11:30 AM	863 sf	0.67%	8,553 sf	6.63%	8,519 sf	6.61%	
11:45 AM	650 sf	0.50%	7,648 sf	5.93%	7,610 sf	5.90%	
12:00 PM	451 sf	0.35%	6,688 sf	5.19%	6,657 sf	5.16%	
12:15 PM	256 sf	0.20%	5,953 sf	4.62%	5,949 sf	4.61%	
12:30 PM	85 sf	0.07%	5,131 sf	3.98%	5,140 sf	3.99%	
12:45 PM	1 sf	0.00%	4,404 sf	3.42%	4,407 sf	3.42%	
1:00 PM	0 sf	0.00%	3,551 sf	2.75%	3,553 sf	2.76%	
1:15 PM	0 sf	0.00%	2,794 sf	2.17%	2,794 sf	2.17%	
1:30 PM	0 sf	0.00%	1,903 sf	1.48%	1,903 sf	1.48%	
1:45 PM	0 sf	0.00%	1,145 sf	0.89%	1,146 sf	0.89%	
2:00 PM	0 sf	0.00%	432 sf	0.34%	432 sf	0.34%	
2:15 PM	0 sf	0.00%	187 sf	0.15%	188 sf	0.15%	
2:30 PM	0 sf	0.00%	24 sf	0.02%	24 sf	0.02%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:52 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

August 30

Mirror date: April 12
Analysis hours: 7:37 AM-6:42 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:37 AM	18,343 sf	14.23%	35,264 sf	27.35%	39,132 sf	30.35%	
7:45 AM	15,166 sf	11.76%	32,156 sf	24.94%	38,255 sf	29.67%	
8:00 AM	10,824 sf	8.39%	30,661 sf	23.78%	36,058 sf	27.96%	
8:15 AM	8,275 sf	6.42%	30,543 sf	23.69%	35,399 sf	27.45%	
8:30 AM	6,628 sf	5.14%	29,993 sf	23.26%	34,105 sf	26.45%	
8:45 AM	5,604 sf	4.35%	28,127 sf	21.81%	31,332 sf	24.30%	
9:00 AM	4,791 sf	3.72%	26,053 sf	20.21%	28,452 sf	22.07%	
9:15 AM	4,104 sf	3.18%	24,244 sf	18.80%	26,027 sf	20.18%	
9:30 AM	3,521 sf	2.73%	22,390 sf	17.36%	23,645 sf	18.34%	
9:45 AM	3,027 sf	2.35%	20,011 sf	15.52%	20,774 sf	16.11%	
10:00 AM	2,602 sf	2.02%	17,869 sf	13.86%	18,125 sf	14.06%	
10:15 AM	2,235 sf	1.73%	16,150 sf	12.52%	16,294 sf	12.64%	
10:30 AM	1,910 sf	1.48%	14,523 sf	11.26%	14,587 sf	11.31%	
10:45 AM	1,614 sf	1.25%	13,165 sf	10.21%	13,177 sf	10.22%	
11:00 AM	1,347 sf	1.04%	11,798 sf	9.15%	11,771 sf	9.13%	
11:15 AM	1,099 sf	0.85%	10,647 sf	8.26%	10,596 sf	8.22%	
11:30 AM	870 sf	0.67%	9,486 sf	7.36%	9,422 sf	7.31%	
11:45 AM	652 sf	0.51%	8,491 sf	6.58%	8,421 sf	6.53%	
12:00 PM	450 sf	0.35%	7,501 sf	5.82%	7,460 sf	5.79%	
12:15 PM	251 sf	0.19%	6,732 sf	5.22%	6,711 sf	5.20%	
12:30 PM	77 sf	0.06%	5,863 sf	4.55%	5,856 sf	4.54%	
12:45 PM	0 sf	0.00%	5,105 sf	3.96%	5,108 sf	3.96%	
1:00 PM	0 sf	0.00%	4,218 sf	3.27%	4,218 sf	3.27%	
1:15 PM	0 sf	0.00%	3,417 sf	2.65%	3,417 sf	2.65%	
1:30 PM	0 sf	0.00%	2,480 sf	1.92%	2,481 sf	1.92%	
1:45 PM	0 sf	0.00%	1,643 sf	1.27%	1,643 sf	1.27%	
2:00 PM	0 sf	0.00%	758 sf	0.59%	758 sf	0.59%	
2:15 PM	0 sf	0.00%	345 sf	0.27%	345 sf	0.27%	
2:30 PM	0 sf	0.00%	91 sf	0.07%	91 sf	0.07%	
2:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:42 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 6

Mirror date: April 5
Analysis hours: 7:44 AM-6:31 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:44 AM	17,652 sf	13.69%	38,174 sf	29.61%	45,000 sf	34.90%	
8:00 AM	12,132 sf	9.41%	34,436 sf	26.71%	42,032 sf	32.60%	
8:15 AM	9,200 sf	7.13%	33,771 sf	26.19%	40,275 sf	31.23%	
8:30 AM	7,155 sf	5.55%	33,364 sf	25.88%	38,909 sf	30.17%	
8:45 AM	5,907 sf	4.58%	31,584 sf	24.49%	36,002 sf	27.92%	
9:00 AM	4,978 sf	3.86%	29,232 sf	22.67%	32,625 sf	25.30%	
9:15 AM	4,231 sf	3.28%	27,143 sf	21.05%	29,741 sf	23.06%	
9:30 AM	3,615 sf	2.80%	25,031 sf	19.41%	26,993 sf	20.93%	
9:45 AM	3,098 sf	2.40%	22,366 sf	17.35%	23,733 sf	18.41%	
10:00 AM	2,660 sf	2.06%	19,891 sf	15.43%	20,681 sf	16.04%	
10:15 AM	2,279 sf	1.77%	17,918 sf	13.90%	18,276 sf	14.17%	
10:30 AM	1,940 sf	1.50%	16,073 sf	12.46%	16,291 sf	12.63%	
10:45 AM	1,638 sf	1.27%	14,536 sf	11.27%	14,657 sf	11.37%	
11:00 AM	1,364 sf	1.06%	13,015 sf	10.09%	13,048 sf	10.12%	
11:15 AM	1,110 sf	0.86%	11,744 sf	9.11%	11,724 sf	9.09%	
11:30 AM	876 sf	0.68%	10,480 sf	8.13%	10,416 sf	8.08%	
11:45 AM	656 sf	0.51%	9,392 sf	7.28%	9,307 sf	7.22%	
12:00 PM	446 sf	0.35%	8,421 sf	6.53%	8,349 sf	6.47%	
12:15 PM	244 sf	0.19%	7,598 sf	5.89%	7,560 sf	5.86%	
12:30 PM	70 sf	0.05%	6,669 sf	5.17%	6,650 sf	5.16%	
12:45 PM	0 sf	0.00%	5,866 sf	4.55%	5,867 sf	4.55%	
1:00 PM	0 sf	0.00%	4,940 sf	3.83%	4,940 sf	3.83%	
1:15 PM	0 sf	0.00%	4,104 sf	3.18%	4,104 sf	3.18%	
1:30 PM	0 sf	0.00%	3,122 sf	2.42%	3,124 sf	2.42%	
1:45 PM	0 sf	0.00%	2,227 sf	1.73%	2,227 sf	1.73%	
2:00 PM	0 sf	0.00%	1,243 sf	0.96%	1,243 sf	0.96%	
2:15 PM	0 sf	0.00%	567 sf	0.44%	567 sf	0.44%	
2:30 PM	0 sf	0.00%	208 sf	0.16%	208 sf	0.16%	
2:45 PM	0 sf	0.00%	15 sf	0.01%	15 sf	0.01%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:31 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 13

Mirror date: March 29
Analysis hours: 7:50 AM-6:21 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:50 AM	17,541 sf	13.60%	42,089 sf	32.64%	51,680 sf	40.08%	
8:00 AM	13,821 sf	10.72%	38,940 sf	30.20%	50,148 sf	38.89%	
8:15 AM	10,069 sf	7.81%	37,391 sf	29.00%	45,961 sf	35.64%	
8:30 AM	7,680 sf	5.96%	36,955 sf	28.66%	44,325 sf	34.38%	
8:45 AM	6,133 sf	4.76%	35,352 sf	27.42%	41,291 sf	32.02%	
9:00 AM	5,142 sf	3.99%	32,653 sf	25.32%	37,299 sf	28.93%	
9:15 AM	4,360 sf	3.38%	30,304 sf	23.50%	33,922 sf	26.31%	
9:30 AM	3,707 sf	2.88%	27,900 sf	21.64%	30,664 sf	23.78%	
9:45 AM	3,171 sf	2.46%	24,924 sf	19.33%	27,002 sf	20.94%	
10:00 AM	2,715 sf	2.11%	22,061 sf	17.11%	23,450 sf	18.19%	
10:15 AM	2,319 sf	1.80%	19,827 sf	15.38%	20,689 sf	16.05%	
10:30 AM	1,972 sf	1.53%	17,757 sf	13.77%	18,238 sf	14.14%	
10:45 AM	1,660 sf	1.29%	16,004 sf	12.41%	16,318 sf	12.66%	
11:00 AM	1,381 sf	1.07%	14,341 sf	11.12%	14,511 sf	11.25%	
11:15 AM	1,121 sf	0.87%	12,923 sf	10.02%	12,994 sf	10.08%	
11:30 AM	880 sf	0.68%	11,534 sf	8.94%	11,521 sf	8.94%	
11:45 AM	653 sf	0.51%	10,443 sf	8.10%	10,412 sf	8.07%	
12:00 PM	440 sf	0.34%	9,423 sf	7.31%	9,375 sf	7.27%	
12:15 PM	235 sf	0.18%	8,547 sf	6.63%	8,514 sf	6.60%	
12:30 PM	60 sf	0.05%	7,563 sf	5.87%	7,542 sf	5.85%	
12:45 PM	0 sf	0.00%	6,698 sf	5.19%	6,695 sf	5.19%	
1:00 PM	0 sf	0.00%	5,726 sf	4.44%	5,733 sf	4.45%	
1:15 PM	0 sf	0.00%	4,855 sf	3.77%	4,864 sf	3.77%	
1:30 PM	0 sf	0.00%	3,834 sf	2.97%	3,841 sf	2.98%	
1:45 PM	0 sf	0.00%	2,906 sf	2.25%	2,914 sf	2.26%	
2:00 PM	0 sf	0.00%	1,826 sf	1.42%	1,826 sf	1.42%	
2:15 PM	0 sf	0.00%	963 sf	0.75%	962 sf	0.75%	
2:30 PM	0 sf	0.00%	412 sf	0.32%	412 sf	0.32%	
2:45 PM	0 sf	0.00%	102 sf	0.08%	103 sf	0.08%	
3:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	1 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:21 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 20

Fall equinox (Spring equinox on March 22 similar)
Analysis hours: 7:57 AM-6:09 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:57 AM	16,634 sf	12.90%	46,307 sf	35.91%	58,513 sf	45.38%	
8:00 AM	15,344 sf	11.90%	44,895 sf	34.82%	57,749 sf	44.79%	
8:15 AM	10,893 sf	8.45%	41,414 sf	32.12%	52,734 sf	40.90%	
8:30 AM	8,180 sf	6.34%	40,311 sf	31.26%	49,828 sf	38.64%	
8:45 AM	6,384 sf	4.95%	39,480 sf	30.62%	47,302 sf	36.68%	
9:00 AM	5,299 sf	4.11%	36,277 sf	28.13%	42,444 sf	32.92%	
9:15 AM	4,483 sf	3.48%	33,671 sf	26.11%	38,521 sf	29.87%	
9:30 AM	3,807 sf	2.95%	30,968 sf	24.02%	34,690 sf	26.90%	
9:45 AM	3,246 sf	2.52%	27,693 sf	21.48%	30,540 sf	23.68%	
10:00 AM	2,769 sf	2.15%	24,391 sf	18.92%	26,450 sf	20.51%	
10:15 AM	2,361 sf	1.83%	21,842 sf	16.94%	23,296 sf	18.07%	
10:30 AM	2,003 sf	1.55%	19,528 sf	15.14%	20,475 sf	15.88%	
10:45 AM	1,685 sf	1.31%	17,561 sf	13.62%	18,196 sf	14.11%	
11:00 AM	1,395 sf	1.08%	15,718 sf	12.19%	16,122 sf	12.50%	
11:15 AM	1,128 sf	0.87%	14,164 sf	10.98%	14,412 sf	11.18%	
11:30 AM	881 sf	0.68%	12,647 sf	9.81%	12,764 sf	9.90%	
11:45 AM	650 sf	0.50%	11,605 sf	9.00%	11,688 sf	9.06%	
12:00 PM	435 sf	0.34%	10,521 sf	8.16%	10,570 sf	8.20%	
12:15 PM	225 sf	0.17%	9,577 sf	7.43%	9,622 sf	7.46%	
12:30 PM	48 sf	0.04%	8,532 sf	6.62%	8,571 sf	6.65%	
12:45 PM	0 sf	0.00%	7,613 sf	5.90%	7,663 sf	5.94%	
1:00 PM	0 sf	0.00%	6,580 sf	5.10%	6,644 sf	5.15%	
1:15 PM	0 sf	0.00%	5,671 sf	4.40%	5,741 sf	4.45%	
1:30 PM	0 sf	0.00%	4,624 sf	3.59%	4,684 sf	3.63%	
1:45 PM	0 sf	0.00%	3,670 sf	2.85%	3,719 sf	2.88%	
2:00 PM	0 sf	0.00%	2,553 sf	1.98%	2,561 sf	1.99%	
2:15 PM	0 sf	0.00%	1,556 sf	1.21%	1,556 sf	1.21%	
2:30 PM	0 sf	0.00%	737 sf	0.57%	740 sf	0.57%	
2:45 PM	0 sf	0.00%	303 sf	0.23%	303 sf	0.24%	
3:00 PM	0 sf	0.00%	40 sf	0.03%	41 sf	0.03%	
3:15 PM	0 sf	0.00%	14 sf	0.01%	14 sf	0.01%	
3:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
3:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
6:09 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

September 27

Mirror date: March 15
Analysis hours: 8:03 AM-5:58 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:03 AM	14,999 sf	11.63%	50,339 sf	39.04%	65,361 sf	50.69%	
8:15 AM	11,571 sf	8.97%	45,964 sf	35.65%	61,518 sf	47.71%	
8:30 AM	8,707 sf	6.75%	43,945 sf	34.08%	56,095 sf	43.50%	
8:45 AM	6,710 sf	5.20%	43,257 sf	33.55%	53,367 sf	41.39%	
9:00 AM	5,494 sf	4.26%	40,603 sf	31.49%	48,670 sf	37.75%	
9:15 AM	4,609 sf	3.57%	37,300 sf	28.93%	43,620 sf	33.83%	
9:30 AM	3,905 sf	3.03%	34,228 sf	26.54%	39,019 sf	30.26%	
9:45 AM	3,319 sf	2.57%	30,644 sf	23.77%	34,346 sf	26.64%	
10:00 AM	2,830 sf	2.20%	26,952 sf	20.90%	29,748 sf	23.07%	
10:15 AM	2,402 sf	1.86%	23,979 sf	18.60%	26,083 sf	20.23%	
10:30 AM	2,032 sf	1.58%	21,354 sf	16.56%	22,869 sf	17.74%	
10:45 AM	1,706 sf	1.32%	19,196 sf	14.89%	20,300 sf	15.74%	
11:00 AM	1,409 sf	1.09%	17,146 sf	13.30%	17,908 sf	13.89%	
11:15 AM	1,136 sf	0.88%	15,455 sf	11.99%	15,985 sf	12.40%	
11:30 AM	886 sf	0.69%	13,974 sf	10.84%	14,369 sf	11.14%	
11:45 AM	649 sf	0.50%	12,884 sf	9.99%	13,175 sf	10.22%	
12:00 PM	426 sf	0.33%	11,703 sf	9.08%	11,933 sf	9.25%	
12:15 PM	213 sf	0.17%	10,698 sf	8.30%	10,901 sf	8.45%	
12:30 PM	39 sf	0.03%	9,589 sf	7.44%	9,773 sf	7.58%	
12:45 PM	0 sf	0.00%	8,586 sf	6.66%	8,784 sf	6.81%	
1:00 PM	0 sf	0.00%	7,480 sf	5.80%	7,670 sf	5.95%	
1:15 PM	0 sf	0.00%	6,554 sf	5.08%	6,741 sf	5.23%	
1:30 PM	0 sf	0.00%	5,497 sf	4.26%	5,662 sf	4.39%	
1:45 PM	0 sf	0.00%	4,524 sf	3.51%	4,633 sf	3.59%	
2:00 PM	0 sf	0.00%	3,383 sf	2.62%	3,407 sf	2.64%	
2:15 PM	0 sf	0.00%	2,328 sf	1.81%	2,327 sf	1.80%	
2:30 PM	0 sf	0.00%	1,222 sf	0.95%	1,224 sf	0.95%	
2:45 PM	0 sf	0.00%	639 sf	0.50%	643 sf	0.50%	
3:00 PM	0 sf	0.00%	160 sf	0.12%	160 sf	0.12%	
3:15 PM	0 sf	0.00%	101 sf	0.08%	101 sf	0.08%	
3:30 PM	0 sf	0.00%	48 sf	0.04%	48 sf	0.04%	
3:45 PM	0 sf	0.00%	11 sf	0.01%	11 sf	0.01%	
4:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:58 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 4

Mirror date: March 8
Analysis hours: 8:09 AM-5:47 PM (PDT)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:09 AM	13,399 sf	10.39%	54,268 sf	42.09%	72,181 sf	55.98%	
8:15 AM	12,003 sf	9.31%	51,790 sf	40.16%	70,814 sf	54.92%	
8:30 AM	9,044 sf	7.01%	47,972 sf	37.20%	63,225 sf	49.03%	
8:45 AM	7,037 sf	5.46%	46,889 sf	36.36%	59,724 sf	46.32%	
9:00 AM	5,640 sf	4.37%	45,003 sf	34.90%	55,125 sf	42.75%	
9:15 AM	4,744 sf	3.68%	41,498 sf	32.18%	49,285 sf	38.22%	
9:30 AM	4,015 sf	3.11%	37,937 sf	29.42%	43,879 sf	34.03%	
9:45 AM	3,404 sf	2.64%	33,815 sf	26.22%	38,473 sf	29.84%	
10:00 AM	2,891 sf	2.24%	29,647 sf	22.99%	33,223 sf	25.77%	
10:15 AM	2,455 sf	1.90%	26,307 sf	20.40%	29,108 sf	22.57%	
10:30 AM	2,070 sf	1.61%	23,352 sf	18.11%	25,484 sf	19.76%	
10:45 AM	1,732 sf	1.34%	20,921 sf	16.22%	22,573 sf	17.51%	
11:00 AM	1,429 sf	1.11%	18,703 sf	14.50%	19,945 sf	15.47%	
11:15 AM	1,148 sf	0.89%	16,825 sf	13.05%	17,785 sf	13.79%	
11:30 AM	889 sf	0.69%	15,438 sf	11.97%	16,198 sf	12.56%	
11:45 AM	650 sf	0.50%	14,271 sf	11.07%	14,891 sf	11.55%	
12:00 PM	422 sf	0.33%	13,018 sf	10.10%	13,518 sf	10.48%	
12:15 PM	205 sf	0.16%	11,921 sf	9.25%	12,379 sf	9.60%	
12:30 PM	29 sf	0.02%	10,737 sf	8.33%	11,159 sf	8.65%	
12:45 PM	0 sf	0.00%	9,761 sf	7.57%	10,180 sf	7.90%	
1:00 PM	0 sf	0.00%	8,695 sf	6.74%	9,090 sf	7.05%	
1:15 PM	0 sf	0.00%	7,661 sf	5.94%	8,038 sf	6.23%	
1:30 PM	0 sf	0.00%	6,485 sf	5.03%	6,794 sf	5.27%	
1:45 PM	0 sf	0.00%	5,489 sf	4.26%	5,682 sf	4.41%	
2:00 PM	0 sf	0.00%	4,325 sf	3.35%	4,388 sf	3.40%	
2:15 PM	0 sf	0.00%	3,249 sf	2.52%	3,254 sf	2.52%	
2:30 PM	0 sf	0.00%	2,016 sf	1.56%	2,015 sf	1.56%	
2:45 PM	0 sf	0.00%	1,162 sf	0.90%	1,164 sf	0.90%	
3:00 PM	0 sf	0.00%	506 sf	0.39%	506 sf	0.39%	
3:15 PM	0 sf	0.00%	289 sf	0.22%	289 sf	0.22%	
3:30 PM	0 sf	0.00%	211 sf	0.16%	211 sf	0.16%	
3:45 PM	0 sf	0.00%	144 sf	0.11%	144 sf	0.11%	
4:00 PM	0 sf	0.00%	61 sf	0.05%	61 sf	0.05%	
4:15 PM	0 sf	0.00%	44 sf	0.03%	44 sf	0.03%	
4:30 PM	0 sf	0.00%	49 sf	0.04%	49 sf	0.04%	
4:45 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:47 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 11

Mirror date: March 1
Analysis hours: 8:16 AM-5:37 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:16 AM	12,201 sf	9.46%	57,806 sf	44.83%	78,627 sf	60.98%	
8:30 AM	9,452 sf	7.33%	52,395 sf	40.63%	72,091 sf	55.91%	
8:45 AM	7,385 sf	5.73%	50,454 sf	39.13%	66,390 sf	51.49%	
9:00 AM	5,842 sf	4.53%	49,860 sf	38.67%	61,846 sf	47.96%	
9:15 AM	4,884 sf	3.79%	46,614 sf	36.15%	55,839 sf	43.30%	
9:30 AM	4,132 sf	3.20%	42,174 sf	32.71%	49,190 sf	38.15%	
9:45 AM	3,499 sf	2.71%	37,542 sf	29.12%	43,037 sf	33.38%	
10:00 AM	2,962 sf	2.30%	32,613 sf	25.29%	37,046 sf	28.73%	
10:15 AM	2,508 sf	1.95%	28,805 sf	22.34%	32,332 sf	25.07%	
10:30 AM	2,112 sf	1.64%	25,477 sf	19.76%	28,249 sf	21.91%	
10:45 AM	1,766 sf	1.37%	22,773 sf	17.66%	24,997 sf	19.39%	
11:00 AM	1,451 sf	1.13%	20,308 sf	15.75%	22,052 sf	17.10%	
11:15 AM	1,165 sf	0.90%	18,532 sf	14.37%	20,012 sf	15.52%	
11:30 AM	899 sf	0.70%	17,048 sf	13.22%	18,291 sf	14.19%	
11:45 AM	652 sf	0.51%	15,782 sf	12.24%	16,845 sf	13.06%	
12:00 PM	420 sf	0.33%	14,434 sf	11.19%	15,321 sf	11.88%	
12:15 PM	200 sf	0.16%	13,261 sf	10.28%	14,099 sf	10.93%	
12:30 PM	22 sf	0.02%	12,010 sf	9.31%	12,768 sf	9.90%	
12:45 PM	0 sf	0.00%	10,925 sf	8.47%	11,662 sf	9.04%	
1:00 PM	0 sf	0.00%	9,742 sf	7.56%	10,433 sf	8.09%	
1:15 PM	0 sf	0.00%	8,739 sf	6.78%	9,365 sf	7.26%	
1:30 PM	0 sf	0.00%	7,597 sf	5.89%	8,082 sf	6.27%	
1:45 PM	0 sf	0.00%	6,573 sf	5.10%	6,864 sf	5.32%	
2:00 PM	0 sf	0.00%	5,380 sf	4.17%	5,502 sf	4.27%	
2:15 PM	0 sf	0.00%	4,305 sf	3.34%	4,333 sf	3.36%	
2:30 PM	0 sf	0.00%	3,038 sf	2.36%	3,039 sf	2.36%	
2:45 PM	0 sf	0.00%	1,951 sf	1.51%	1,954 sf	1.52%	
3:00 PM	0 sf	0.00%	1,067 sf	0.83%	1,067 sf	0.83%	
3:15 PM	0 sf	0.00%	600 sf	0.47%	600 sf	0.47%	
3:30 PM	0 sf	0.00%	508 sf	0.39%	508 sf	0.39%	
3:45 PM	0 sf	0.00%	439 sf	0.34%	439 sf	0.34%	
4:00 PM	0 sf	0.00%	360 sf	0.28%	360 sf	0.28%	
4:15 PM	0 sf	0.00%	390 sf	0.30%	390 sf	0.30%	
4:30 PM	0 sf	0.00%	155 sf	0.12%	155 sf	0.12%	
4:45 PM	0 sf	0.00%	9 sf	0.01%	9 sf	0.01%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:30 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:37 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 18

Mirror date: February 22
Analysis hours: 8:22 AM-5:27 PM (PDT)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:22 AM	11,065 sf	8.58%	61,073 sf	47.36%	84,709 sf	65.69%	
8:30 AM	9,842 sf	7.63%	57,440 sf	44.55%	82,676 sf	64.12%	
8:45 AM	7,726 sf	5.99%	55,251 sf	42.85%	73,622 sf	57.10%	
9:00 AM	6,157 sf	4.78%	55,055 sf	42.70%	68,942 sf	53.47%	
9:15 AM	5,027 sf	3.90%	52,154 sf	40.45%	62,679 sf	48.61%	
9:30 AM	4,250 sf	3.30%	47,212 sf	36.61%	55,202 sf	42.81%	
9:45 AM	3,602 sf	2.79%	41,677 sf	32.32%	47,905 sf	37.15%	
10:00 AM	3,044 sf	2.36%	36,078 sf	27.98%	41,238 sf	31.98%	
10:15 AM	2,570 sf	1.99%	31,474 sf	24.41%	35,758 sf	27.73%	
10:30 AM	2,163 sf	1.68%	27,750 sf	21.52%	31,192 sf	24.19%	
10:45 AM	1,804 sf	1.40%	24,735 sf	19.18%	27,542 sf	21.36%	
11:00 AM	1,481 sf	1.15%	21,995 sf	17.06%	24,289 sf	18.84%	
11:15 AM	1,186 sf	0.92%	20,399 sf	15.82%	22,450 sf	17.41%	
11:30 AM	914 sf	0.71%	18,801 sf	14.58%	20,559 sf	15.94%	
11:45 AM	661 sf	0.51%	17,412 sf	13.50%	18,984 sf	14.72%	
12:00 PM	422 sf	0.33%	15,950 sf	12.37%	17,360 sf	13.46%	
12:15 PM	197 sf	0.15%	14,723 sf	11.42%	16,053 sf	12.45%	
12:30 PM	19 sf	0.01%	13,370 sf	10.37%	14,591 sf	11.32%	
12:45 PM	0 sf	0.00%	12,233 sf	9.49%	13,423 sf	10.41%	
1:00 PM	0 sf	0.00%	11,014 sf	8.54%	12,082 sf	9.37%	
1:15 PM	0 sf	0.00%	9,988 sf	7.75%	10,899 sf	8.45%	
1:30 PM	0 sf	0.00%	8,818 sf	6.84%	9,498 sf	7.37%	
1:45 PM	0 sf	0.00%	7,784 sf	6.04%	8,218 sf	6.37%	
2:00 PM	0 sf	0.00%	6,583 sf	5.11%	6,804 sf	5.28%	
2:15 PM	0 sf	0.00%	5,485 sf	4.25%	5,561 sf	4.31%	
2:30 PM	0 sf	0.00%	4,210 sf	3.26%	4,217 sf	3.27%	
2:45 PM	0 sf	0.00%	3,022 sf	2.34%	3,022 sf	2.34%	
3:00 PM	0 sf	0.00%	1,923 sf	1.49%	1,923 sf	1.49%	
3:15 PM	0 sf	0.00%	1,101 sf	0.85%	1,101 sf	0.85%	
3:30 PM	0 sf	0.00%	944 sf	0.73%	944 sf	0.73%	
3:45 PM	0 sf	0.00%	951 sf	0.74%	950 sf	0.74%	
4:00 PM	0 sf	0.00%	984 sf	0.76%	984 sf	0.76%	
4:15 PM	0 sf	0.00%	748 sf	0.58%	748 sf	0.58%	
4:30 PM	0 sf	0.00%	304 sf	0.24%	304 sf	0.24%	
4:45 PM	0 sf	0.00%	74 sf	0.06%	74 sf	0.06%	
5:00 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
5:27 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

October 25

Mirror date: February 15
Analysis hours: 7:30 AM-4:18 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:30 AM	10,059 sf	7.80%	65,983 sf	51.17%	90,692 sf	70.33%	
7:45 AM	8,031 sf	6.23%	60,860 sf	47.20%	82,483 sf	63.97%	
8:00 AM	6,438 sf	4.99%	60,001 sf	46.53%	75,700 sf	58.71%	
8:15 AM	5,219 sf	4.05%	58,322 sf	45.23%	70,075 sf	54.35%	
8:30 AM	4,371 sf	3.39%	52,713 sf	40.88%	61,575 sf	47.75%	
8:45 AM	3,712 sf	2.88%	46,522 sf	36.08%	53,485 sf	41.48%	
9:00 AM	3,137 sf	2.43%	40,010 sf	31.03%	45,793 sf	35.51%	
9:15 AM	2,646 sf	2.05%	34,553 sf	26.80%	39,457 sf	30.60%	
9:30 AM	2,222 sf	1.72%	30,160 sf	23.39%	34,272 sf	26.58%	
9:45 AM	1,849 sf	1.43%	26,827 sf	20.81%	30,214 sf	23.43%	
10:00 AM	1,516 sf	1.18%	24,150 sf	18.73%	27,067 sf	20.99%	
10:15 AM	1,213 sf	0.94%	22,414 sf	17.38%	25,051 sf	19.43%	
10:30 AM	935 sf	0.73%	20,664 sf	16.03%	23,016 sf	17.85%	
10:45 AM	677 sf	0.53%	19,173 sf	14.87%	21,325 sf	16.54%	
11:00 AM	429 sf	0.33%	17,605 sf	13.65%	19,569 sf	15.18%	
11:15 AM	199 sf	0.15%	16,301 sf	12.64%	18,203 sf	14.12%	
11:30 AM	18 sf	0.01%	14,871 sf	11.53%	16,670 sf	12.93%	
11:45 AM	0 sf	0.00%	13,662 sf	10.60%	15,393 sf	11.94%	
12:00 PM	0 sf	0.00%	12,402 sf	9.62%	13,925 sf	10.80%	
12:15 PM	0 sf	0.00%	11,354 sf	8.81%	12,635 sf	9.80%	
12:30 PM	0 sf	0.00%	10,166 sf	7.88%	11,103 sf	8.61%	
12:45 PM	0 sf	0.00%	9,119 sf	7.07%	9,736 sf	7.55%	
1:00 PM	0 sf	0.00%	7,899 sf	6.13%	8,241 sf	6.39%	
1:15 PM	0 sf	0.00%	6,818 sf	5.29%	6,972 sf	5.41%	
1:30 PM	0 sf	0.00%	5,529 sf	4.29%	5,563 sf	4.31%	
1:45 PM	0 sf	0.00%	4,348 sf	3.37%	4,348 sf	3.37%	
2:00 PM	0 sf	0.00%	3,048 sf	2.36%	3,048 sf	2.36%	
2:15 PM	0 sf	0.00%	2,048 sf	1.59%	2,048 sf	1.59%	
2:30 PM	0 sf	0.00%	1,585 sf	1.23%	1,585 sf	1.23%	
2:45 PM	0 sf	0.00%	1,740 sf	1.35%	1,740 sf	1.35%	
3:00 PM	0 sf	0.00%	1,665 sf	1.29%	1,665 sf	1.29%	
3:15 PM	0 sf	0.00%	1,048 sf	0.81%	1,048 sf	0.81%	
3:30 PM	0 sf	0.00%	499 sf	0.39%	499 sf	0.39%	
3:45 PM	0 sf	0.00%	187 sf	0.15%	187 sf	0.15%	
4:00 PM	0 sf	0.00%	21 sf	0.02%	21 sf	0.02%	
4:15 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	
4:18 PM	0 sf	0.00%	0 sf	0.00%	0 sf	0.00%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 1

Mirror date: February 8
Analysis hours: 7:36 AM-4:10 PM (PST)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:36 AM	9,194 sf	7.13%	71,980 sf	55.82%	96,510 sf	74.85%	
7:45 AM	8,205 sf	6.36%	68,110 sf	52.82%	92,796 sf	71.97%	
8:00 AM	6,686 sf	5.19%	65,426 sf	50.74%	82,760 sf	64.18%	
8:15 AM	5,458 sf	4.23%	64,317 sf	49.88%	77,267 sf	59.92%	
8:30 AM	4,513 sf	3.50%	58,794 sf	45.60%	68,437 sf	53.07%	
8:45 AM	3,821 sf	2.96%	51,737 sf	40.12%	59,295 sf	45.98%	
9:00 AM	3,242 sf	2.51%	44,635 sf	34.62%	50,895 sf	39.47%	
9:15 AM	2,730 sf	2.12%	38,252 sf	29.67%	43,573 sf	33.79%	
9:30 AM	2,288 sf	1.77%	32,946 sf	25.55%	37,530 sf	29.11%	
9:45 AM	1,906 sf	1.48%	29,038 sf	22.52%	33,016 sf	25.60%	
10:00 AM	1,561 sf	1.21%	26,481 sf	20.54%	30,045 sf	23.30%	
10:15 AM	1,251 sf	0.97%	24,572 sf	19.06%	27,848 sf	21.60%	
10:30 AM	967 sf	0.75%	22,668 sf	17.58%	25,635 sf	19.88%	
10:45 AM	699 sf	0.54%	21,047 sf	16.32%	23,802 sf	18.46%	
11:00 AM	445 sf	0.35%	19,362 sf	15.02%	21,916 sf	17.00%	
11:15 AM	211 sf	0.16%	17,981 sf	13.94%	20,480 sf	15.88%	
11:30 AM	20 sf	0.02%	16,470 sf	12.77%	18,849 sf	14.62%	
11:45 AM	0 sf	0.00%	15,227 sf	11.81%	17,499 sf	13.57%	
12:00 PM	0 sf	0.00%	13,882 sf	10.77%	15,880 sf	12.32%	
12:15 PM	0 sf	0.00%	12,819 sf	9.94%	14,501 sf	11.25%	
12:30 PM	0 sf	0.00%	11,597 sf	8.99%	12,844 sf	9.96%	
12:45 PM	0 sf	0.00%	10,562 sf	8.19%	11,420 sf	8.86%	
1:00 PM	0 sf	0.00%	9,339 sf	7.24%	9,854 sf	7.64%	
1:15 PM	0 sf	0.00%	8,278 sf	6.42%	8,549 sf	6.63%	
1:30 PM	0 sf	0.00%	6,999 sf	5.43%	7,085 sf	5.49%	
1:45 PM	0 sf	0.00%	5,846 sf	4.53%	5,849 sf	4.54%	
2:00 PM	0 sf	0.00%	4,458 sf	3.46%	4,457 sf	3.46%	
2:15 PM	0 sf	0.00%	3,329 sf	2.58%	3,328 sf	2.58%	
2:30 PM	0 sf	0.00%	2,505 sf	1.94%	2,504 sf	1.94%	
2:45 PM	0 sf	0.00%	2,634 sf	2.04%	2,634 sf	2.04%	
3:00 PM	0 sf	0.00%	2,183 sf	1.69%	2,182 sf	1.69%	
3:15 PM	0 sf	0.00%	1,383 sf	1.07%	1,383 sf	1.07%	
3:30 PM	0 sf	0.00%	747 sf	0.58%	747 sf	0.58%	
3:45 PM	0 sf	0.00%	339 sf	0.26%	339 sf	0.26%	
4:00 PM	0 sf	0.00%	97 sf	0.08%	97 sf	0.08%	
4:10 PM	0 sf	0.00%	16 sf	0.01%	16 sf	0.01%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 8

Mirror date: February 1
Analysis hours: 7:43 AM-4:03 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:43 AM	8,404 sf	6.52%	77,827 sf	60.36%	101,467 sf	78.69%	
7:45 AM	8,313 sf	6.45%	77,175 sf	59.85%	101,102 sf	78.41%	
8:00 AM	6,911 sf	5.36%	71,377 sf	55.35%	91,123 sf	70.67%	
8:15 AM	5,696 sf	4.42%	69,832 sf	54.16%	84,006 sf	65.15%	
8:30 AM	4,704 sf	3.65%	65,739 sf	50.98%	76,121 sf	59.03%	
8:45 AM	3,942 sf	3.06%	57,482 sf	44.58%	65,383 sf	50.71%	
9:00 AM	3,355 sf	2.60%	49,625 sf	38.49%	56,238 sf	43.61%	
9:15 AM	2,829 sf	2.19%	42,659 sf	33.08%	48,227 sf	37.40%	
9:30 AM	2,371 sf	1.84%	36,332 sf	28.18%	41,122 sf	31.89%	
9:45 AM	1,974 sf	1.53%	31,794 sf	24.66%	36,071 sf	27.97%	
10:00 AM	1,618 sf	1.25%	28,964 sf	22.46%	33,176 sf	25.73%	
10:15 AM	1,297 sf	1.01%	26,861 sf	20.83%	30,798 sf	23.89%	
10:30 AM	1,005 sf	0.78%	24,774 sf	19.21%	28,370 sf	22.00%	
10:45 AM	728 sf	0.56%	23,031 sf	17.86%	26,417 sf	20.49%	
11:00 AM	470 sf	0.36%	21,227 sf	16.46%	24,406 sf	18.93%	
11:15 AM	230 sf	0.18%	19,744 sf	15.31%	22,864 sf	17.73%	
11:30 AM	27 sf	0.02%	18,151 sf	14.08%	21,127 sf	16.38%	
11:45 AM	0 sf	0.00%	16,861 sf	13.08%	19,682 sf	15.26%	
12:00 PM	0 sf	0.00%	15,489 sf	12.01%	17,969 sf	13.94%	
12:15 PM	0 sf	0.00%	14,365 sf	11.14%	16,459 sf	12.76%	
12:30 PM	0 sf	0.00%	13,119 sf	10.17%	14,707 sf	11.41%	
12:45 PM	0 sf	0.00%	12,092 sf	9.38%	13,207 sf	10.24%	
1:00 PM	0 sf	0.00%	10,881 sf	8.44%	11,591 sf	8.99%	
1:15 PM	0 sf	0.00%	9,830 sf	7.62%	10,235 sf	7.94%	
1:30 PM	0 sf	0.00%	8,574 sf	6.65%	8,732 sf	6.77%	
1:45 PM	0 sf	0.00%	7,476 sf	5.80%	7,493 sf	5.81%	
2:00 PM	0 sf	0.00%	6,138 sf	4.76%	6,137 sf	4.76%	
2:15 PM	0 sf	0.00%	4,985 sf	3.87%	4,984 sf	3.87%	
2:30 PM	0 sf	0.00%	3,765 sf	2.92%	3,765 sf	2.92%	
2:45 PM	0 sf	0.00%	3,440 sf	2.67%	3,440 sf	2.67%	
3:00 PM	0 sf	0.00%	2,604 sf	2.02%	2,604 sf	2.02%	
3:15 PM	0 sf	0.00%	1,743 sf	1.35%	1,743 sf	1.35%	
3:30 PM	0 sf	0.00%	1,035 sf	0.80%	1,035 sf	0.80%	
3:45 PM	0 sf	0.00%	534 sf	0.41%	534 sf	0.41%	
4:00 PM	0 sf	0.00%	213 sf	0.17%	213 sf	0.17%	
4:03 PM	0 sf	0.00%	166 sf	0.13%	166 sf	0.13%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 15

Mirror date: January 25
Analysis hours: 7:51 AM-3:57 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:51 AM	7,667 sf	5.95%	83,322 sf	64.62%	105,365 sf	81.71%	
8:00 AM	7,084 sf	5.49%	78,683 sf	61.02%	99,930 sf	77.50%	
8:15 AM	5,909 sf	4.58%	75,211 sf	58.33%	90,681 sf	70.33%	
8:30 AM	4,904 sf	3.80%	71,816 sf	55.70%	82,958 sf	64.34%	
8:45 AM	4,098 sf	3.18%	63,967 sf	49.61%	72,154 sf	55.96%	
9:00 AM	3,465 sf	2.69%	54,910 sf	42.58%	61,648 sf	47.81%	
9:15 AM	2,935 sf	2.28%	47,310 sf	36.69%	53,020 sf	41.12%	
9:30 AM	2,460 sf	1.91%	40,167 sf	31.15%	45,050 sf	34.94%	
9:45 AM	2,050 sf	1.59%	35,170 sf	27.28%	39,630 sf	30.73%	
10:00 AM	1,685 sf	1.31%	31,964 sf	24.79%	36,425 sf	28.25%	
10:15 AM	1,354 sf	1.05%	29,365 sf	22.77%	33,829 sf	26.24%	
10:30 AM	1,052 sf	0.82%	26,909 sf	20.87%	31,148 sf	24.16%	
10:45 AM	770 sf	0.60%	25,056 sf	19.43%	29,086 sf	22.56%	
11:00 AM	505 sf	0.39%	23,140 sf	17.95%	26,961 sf	20.91%	
11:15 AM	258 sf	0.20%	21,541 sf	16.71%	25,284 sf	19.61%	
11:30 AM	43 sf	0.03%	19,880 sf	15.42%	23,442 sf	18.18%	
11:45 AM	0 sf	0.00%	18,518 sf	14.36%	21,885 sf	16.97%	
12:00 PM	0 sf	0.00%	17,079 sf	13.25%	20,056 sf	15.55%	
12:15 PM	0 sf	0.00%	15,945 sf	12.37%	18,476 sf	14.33%	
12:30 PM	0 sf	0.00%	14,659 sf	11.37%	16,591 sf	12.87%	
12:45 PM	0 sf	0.00%	13,632 sf	10.57%	15,025 sf	11.65%	
1:00 PM	0 sf	0.00%	12,425 sf	9.64%	13,346 sf	10.35%	
1:15 PM	0 sf	0.00%	11,427 sf	8.86%	11,979 sf	9.29%	
1:30 PM	0 sf	0.00%	10,218 sf	7.92%	10,459 sf	8.11%	
1:45 PM	0 sf	0.00%	9,169 sf	7.11%	9,213 sf	7.14%	
2:00 PM	0 sf	0.00%	7,927 sf	6.15%	7,927 sf	6.15%	
2:15 PM	0 sf	0.00%	6,965 sf	5.40%	6,965 sf	5.40%	
2:30 PM	0 sf	0.00%	5,498 sf	4.26%	5,498 sf	4.26%	
2:45 PM	0 sf	0.00%	4,151 sf	3.22%	4,151 sf	3.22%	
3:00 PM	0 sf	0.00%	3,036 sf	2.35%	3,036 sf	2.35%	
3:15 PM	0 sf	0.00%	2,118 sf	1.64%	2,118 sf	1.64%	
3:30 PM	0 sf	0.00%	1,348 sf	1.05%	1,347 sf	1.04%	
3:45 PM	0 sf	0.00%	768 sf	0.60%	768 sf	0.60%	
3:57 PM	0 sf	0.00%	408 sf	0.32%	408 sf	0.32%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 22

Mirror date: January 18
Analysis hours: 7:57 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
7:57 AM	7,081 sf	5.49%	87,681 sf	68.00%	108,082 sf	83.82%	
8:00 AM	6,977 sf	5.41%	86,692 sf	67.23%	107,138 sf	83.09%	
8:15 AM	6,109 sf	4.74%	80,641 sf	62.54%	97,619 sf	75.71%	
8:30 AM	5,108 sf	3.96%	77,039 sf	59.75%	88,952 sf	68.98%	
8:45 AM	4,279 sf	3.32%	70,887 sf	54.98%	79,378 sf	61.56%	
9:00 AM	3,587 sf	2.78%	60,289 sf	46.76%	67,114 sf	52.05%	
9:15 AM	3,048 sf	2.36%	52,038 sf	40.36%	57,783 sf	44.81%	
9:30 AM	2,568 sf	1.99%	44,382 sf	34.42%	49,262 sf	38.20%	
9:45 AM	2,139 sf	1.66%	38,788 sf	30.08%	43,346 sf	33.62%	
10:00 AM	1,761 sf	1.37%	34,996 sf	27.14%	39,637 sf	30.74%	
10:15 AM	1,419 sf	1.10%	32,135 sf	24.92%	36,827 sf	28.56%	
10:30 AM	1,110 sf	0.86%	29,316 sf	22.74%	33,983 sf	26.36%	
10:45 AM	819 sf	0.64%	27,102 sf	21.02%	31,724 sf	24.60%	
11:00 AM	550 sf	0.43%	24,994 sf	19.38%	29,420 sf	22.82%	
11:15 AM	297 sf	0.23%	23,323 sf	18.09%	27,650 sf	21.44%	
11:30 AM	69 sf	0.05%	21,583 sf	16.74%	25,697 sf	19.93%	
11:45 AM	0 sf	0.00%	20,155 sf	15.63%	24,033 sf	18.64%	
12:00 PM	0 sf	0.00%	18,643 sf	14.46%	22,095 sf	17.14%	
12:15 PM	0 sf	0.00%	17,517 sf	13.58%	20,464 sf	15.87%	
12:30 PM	0 sf	0.00%	16,165 sf	12.54%	18,453 sf	14.31%	
12:45 PM	0 sf	0.00%	15,153 sf	11.75%	16,839 sf	13.06%	
1:00 PM	0 sf	0.00%	13,928 sf	10.80%	15,060 sf	11.68%	
1:15 PM	0 sf	0.00%	12,978 sf	10.06%	13,688 sf	10.62%	
1:30 PM	0 sf	0.00%	11,805 sf	9.16%	12,145 sf	9.42%	
1:45 PM	0 sf	0.00%	10,853 sf	8.42%	10,939 sf	8.48%	
2:00 PM	0 sf	0.00%	9,750 sf	7.56%	9,750 sf	7.56%	
2:15 PM	0 sf	0.00%	8,904 sf	6.91%	8,904 sf	6.91%	
2:30 PM	0 sf	0.00%	7,332 sf	5.69%	7,332 sf	5.69%	
2:45 PM	0 sf	0.00%	5,148 sf	3.99%	5,148 sf	3.99%	
3:00 PM	0 sf	0.00%	3,565 sf	2.76%	3,565 sf	2.76%	
3:15 PM	0 sf	0.00%	2,505 sf	1.94%	2,505 sf	1.94%	
3:30 PM	0 sf	0.00%	1,674 sf	1.30%	1,674 sf	1.30%	
3:45 PM	0 sf	0.00%	1,035 sf	0.80%	1,035 sf	0.80%	
3:54 PM	0 sf	0.00%	719 sf	0.56%	719 sf	0.56%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

November 29

Mirror date: January 11
Analysis hours: 8:04 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:04 AM	6,645 sf	5.15%	91,299 sf	70.80%	110,028 sf	85.33%	
8:15 AM	6,170 sf	4.79%	86,479 sf	67.07%	103,304 sf	80.12%	
8:30 AM	5,322 sf	4.13%	81,687 sf	63.35%	94,421 sf	73.23%	
8:45 AM	4,464 sf	3.46%	76,307 sf	59.18%	85,213 sf	66.09%	
9:00 AM	3,756 sf	2.91%	66,305 sf	51.42%	73,294 sf	56.84%	
9:15 AM	3,169 sf	2.46%	56,805 sf	44.05%	62,535 sf	48.50%	
9:30 AM	2,676 sf	2.08%	48,342 sf	37.49%	53,193 sf	41.25%	
9:45 AM	2,235 sf	1.73%	42,341 sf	32.84%	46,931 sf	36.40%	
10:00 AM	1,842 sf	1.43%	38,027 sf	29.49%	42,768 sf	33.17%	
10:15 AM	1,496 sf	1.16%	34,820 sf	27.00%	39,674 sf	30.77%	
10:30 AM	1,176 sf	0.91%	31,768 sf	24.64%	36,676 sf	28.44%	
10:45 AM	880 sf	0.68%	29,277 sf	22.71%	34,207 sf	26.53%	
11:00 AM	601 sf	0.47%	26,808 sf	20.79%	31,718 sf	24.60%	
11:15 AM	343 sf	0.27%	24,992 sf	19.38%	29,824 sf	23.13%	
11:30 AM	106 sf	0.08%	23,155 sf	17.96%	27,737 sf	21.51%	
11:45 AM	0 sf	0.00%	21,771 sf	16.88%	26,126 sf	20.26%	
12:00 PM	0 sf	0.00%	20,331 sf	15.77%	24,304 sf	18.85%	
12:15 PM	0 sf	0.00%	19,048 sf	14.77%	22,431 sf	17.40%	
12:30 PM	0 sf	0.00%	17,626 sf	13.67%	20,274 sf	15.72%	
12:45 PM	0 sf	0.00%	16,538 sf	12.83%	18,520 sf	14.36%	
1:00 PM	0 sf	0.00%	15,336 sf	11.89%	16,700 sf	12.95%	
1:15 PM	0 sf	0.00%	14,395 sf	11.16%	15,273 sf	11.84%	
1:30 PM	0 sf	0.00%	13,274 sf	10.29%	13,727 sf	10.65%	
1:45 PM	0 sf	0.00%	12,411 sf	9.62%	12,551 sf	9.73%	
2:00 PM	0 sf	0.00%	11,418 sf	8.86%	11,427 sf	8.86%	
2:15 PM	0 sf	0.00%	10,616 sf	8.23%	10,616 sf	8.23%	
2:30 PM	0 sf	0.00%	9,006 sf	6.98%	9,005 sf	6.98%	
2:45 PM	0 sf	0.00%	6,638 sf	5.15%	6,638 sf	5.15%	
3:00 PM	0 sf	0.00%	4,288 sf	3.33%	4,288 sf	3.33%	
3:15 PM	0 sf	0.00%	2,888 sf	2.24%	2,888 sf	2.24%	
3:30 PM	0 sf	0.00%	2,002 sf	1.55%	2,002 sf	1.55%	
3:45 PM	0 sf	0.00%	1,303 sf	1.01%	1,303 sf	1.01%	
3:51 PM	0 sf	0.00%	1,036 sf	0.80%	1,037 sf	0.80%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

December 6

Mirror date: January 4
Analysis hours: 8:10 AM-3:51 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:10 AM	6,354 sf	4.93%	93,729 sf	72.69%	110,708 sf	85.86%	
8:15 AM	6,148 sf	4.77%	91,859 sf	71.24%	107,760 sf	83.57%	
8:30 AM	5,505 sf	4.27%	85,666 sf	66.44%	99,424 sf	77.11%	
8:45 AM	4,666 sf	3.62%	80,803 sf	62.66%	90,297 sf	70.03%	
9:00 AM	3,922 sf	3.04%	71,726 sf	55.63%	78,921 sf	61.21%	
9:15 AM	3,300 sf	2.56%	61,369 sf	47.59%	67,195 sf	52.11%	
9:30 AM	2,793 sf	2.17%	52,339 sf	40.59%	57,214 sf	44.37%	
9:45 AM	2,339 sf	1.81%	45,586 sf	35.35%	50,136 sf	38.88%	
10:00 AM	1,938 sf	1.50%	40,827 sf	31.66%	45,613 sf	35.37%	
10:15 AM	1,575 sf	1.22%	37,307 sf	28.93%	42,211 sf	32.74%	
10:30 AM	1,249 sf	0.97%	33,912 sf	26.30%	38,944 sf	30.20%	
10:45 AM	946 sf	0.73%	31,265 sf	24.25%	36,374 sf	28.21%	
11:00 AM	660 sf	0.51%	28,568 sf	22.16%	33,717 sf	26.15%	
11:15 AM	398 sf	0.31%	26,549 sf	20.59%	31,705 sf	24.59%	
11:30 AM	153 sf	0.12%	24,562 sf	19.05%	29,542 sf	22.91%	
11:45 AM	0 sf	0.00%	22,975 sf	17.82%	27,690 sf	21.47%	
12:00 PM	0 sf	0.00%	21,319 sf	16.53%	25,579 sf	19.84%	
12:15 PM	0 sf	0.00%	20,128 sf	15.61%	23,802 sf	18.46%	
12:30 PM	0 sf	0.00%	18,818 sf	14.59%	21,787 sf	16.90%	
12:45 PM	0 sf	0.00%	17,749 sf	13.76%	20,013 sf	15.52%	
1:00 PM	0 sf	0.00%	16,516 sf	12.81%	18,113 sf	14.05%	
1:15 PM	0 sf	0.00%	15,592 sf	12.09%	16,644 sf	12.91%	
1:30 PM	0 sf	0.00%	14,487 sf	11.24%	15,062 sf	11.68%	
1:45 PM	0 sf	0.00%	13,702 sf	10.63%	13,914 sf	10.79%	
2:00 PM	0 sf	0.00%	12,806 sf	9.93%	12,829 sf	9.95%	
2:15 PM	0 sf	0.00%	12,033 sf	9.33%	12,033 sf	9.33%	
2:30 PM	0 sf	0.00%	10,406 sf	8.07%	10,405 sf	8.07%	
2:45 PM	0 sf	0.00%	8,090 sf	6.27%	8,090 sf	6.27%	
3:00 PM	0 sf	0.00%	5,120 sf	3.97%	5,120 sf	3.97%	
3:15 PM	0 sf	0.00%	3,456 sf	2.68%	3,456 sf	2.68%	
3:30 PM	0 sf	0.00%	2,317 sf	1.80%	2,317 sf	1.80%	
3:45 PM	0 sf	0.00%	1,569 sf	1.22%	1,568 sf	1.22%	
3:51 PM	0 sf	0.00%	1,305 sf	1.01%	1,305 sf	1.01%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

December 13

Mirror date: December 28
Analysis hours: 8:15 AM-3:52 PM (PST)

Shadow / Sunlight Balance Key

Existing Shadow
Project Shadow
Sunlight Remaining
Revised Variant Shadow

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:15 AM	6,175 sf	4.79%	95,211 sf	73.84%	111,104 sf	86.16%	
8:30 AM	5,599 sf	4.34%	89,270 sf	69.23%	103,201 sf	80.04%	
8:45 AM	4,866 sf	3.77%	84,139 sf	65.25%	94,449 sf	73.25%	
9:00 AM	4,095 sf	3.18%	75,674 sf	58.69%	83,151 sf	64.49%	
9:15 AM	3,452 sf	2.68%	65,525 sf	50.82%	71,532 sf	55.48%	
9:30 AM	2,910 sf	2.26%	55,685 sf	43.19%	60,626 sf	47.02%	
9:45 AM	2,447 sf	1.90%	48,294 sf	37.45%	52,799 sf	40.95%	
10:00 AM	2,033 sf	1.58%	43,221 sf	33.52%	47,995 sf	37.22%	
10:15 AM	1,664 sf	1.29%	39,357 sf	30.52%	44,307 sf	34.36%	
10:30 AM	1,327 sf	1.03%	35,654 sf	27.65%	40,734 sf	31.59%	
10:45 AM	1,018 sf	0.79%	32,877 sf	25.50%	38,086 sf	29.54%	
11:00 AM	726 sf	0.56%	30,051 sf	23.31%	35,318 sf	27.39%	
11:15 AM	457 sf	0.35%	27,886 sf	21.63%	33,185 sf	25.74%	
11:30 AM	206 sf	0.16%	25,682 sf	19.92%	30,893 sf	23.96%	
11:45 AM	10 sf	0.01%	24,068 sf	18.67%	29,037 sf	22.52%	
12:00 PM	0 sf	0.00%	22,307 sf	17.30%	26,857 sf	20.83%	
12:15 PM	0 sf	0.00%	21,104 sf	16.37%	25,086 sf	19.45%	
12:30 PM	0 sf	0.00%	19,693 sf	15.27%	22,945 sf	17.79%	
12:45 PM	0 sf	0.00%	18,642 sf	14.46%	21,167 sf	16.42%	
1:00 PM	0 sf	0.00%	17,383 sf	13.48%	19,197 sf	14.89%	
1:15 PM	0 sf	0.00%	16,466 sf	12.77%	17,694 sf	13.72%	
1:30 PM	0 sf	0.00%	15,373 sf	11.92%	16,080 sf	12.47%	
1:45 PM	0 sf	0.00%	14,614 sf	11.33%	14,910 sf	11.56%	
2:00 PM	0 sf	0.00%	13,711 sf	10.63%	13,758 sf	10.67%	
2:15 PM	0 sf	0.00%	13,054 sf	10.12%	13,054 sf	10.12%	
2:30 PM	0 sf	0.00%	11,508 sf	8.92%	11,507 sf	8.92%	
2:45 PM	0 sf	0.00%	9,330 sf	7.24%	9,330 sf	7.24%	
3:00 PM	0 sf	0.00%	5,919 sf	4.59%	5,918 sf	4.59%	
3:15 PM	0 sf	0.00%	4,073 sf	3.16%	4,073 sf	3.16%	
3:30 PM	0 sf	0.00%	2,610 sf	2.02%	2,609 sf	2.02%	
3:45 PM	0 sf	0.00%	1,820 sf	1.41%	1,820 sf	1.41%	
3:52 PM	0 sf	0.00%	1,485 sf	1.15%	1,485 sf	1.15%	

PROJECT: Stonestown - Revised Variant Aug 202
OPEN SPACE: Rolph Nichol Playground (128,944

December 20

Winter solstice (December 21 similar)
Analysis hours: 8:19 AM-3:54 PM (PST)

Shadow / Sunlight Balance Key

Analysis Time	EXISTING SHADOW		PROJECT EIR VARIANT SHADOW		REVISED VARIANT SHADOW		SHADOW/SUNLIGHT BALANCE
	Shadow Area	Coverage	Shadow Area	Coverage	Shadow Area (sf)	Coverage	ative levels of Existing/Project/Cumulative Shadow vs.
8:19 AM	6,109 sf	4.74%	95,566 sf	74.11%	111,053 sf	86.13%	
8:30 AM	5,700 sf	4.42%	91,511 sf	70.97%	105,253 sf	81.63%	
8:45 AM	5,056 sf	3.92%	86,047 sf	66.73%	97,210 sf	75.39%	
9:00 AM	4,270 sf	3.31%	78,712 sf	61.04%	86,575 sf	67.14%	
9:15 AM	3,597 sf	2.79%	68,913 sf	53.44%	75,175 sf	58.30%	
9:30 AM	3,029 sf	2.35%	58,290 sf	45.21%	63,414 sf	49.18%	
9:45 AM	2,554 sf	1.98%	50,148 sf	38.89%	54,587 sf	42.33%	
10:00 AM	2,128 sf	1.65%	44,870 sf	34.80%	49,574 sf	38.45%	
10:15 AM	1,747 sf	1.36%	40,734 sf	31.59%	45,670 sf	35.42%	
10:30 AM	1,405 sf	1.09%	36,854 sf	28.58%	41,928 sf	32.52%	
10:45 AM	1,089 sf	0.84%	33,934 sf	26.32%	39,151 sf	30.36%	
11:00 AM	794 sf	0.62%	31,030 sf	24.06%	36,330 sf	28.17%	
11:15 AM	517 sf	0.40%	28,743 sf	22.29%	34,094 sf	26.44%	
11:30 AM	263 sf	0.20%	26,441 sf	20.51%	31,732 sf	24.61%	
11:45 AM	42 sf	0.03%	24,743 sf	19.19%	29,850 sf	23.15%	
12:00 PM	0 sf	0.00%	22,928 sf	17.78%	27,628 sf	21.43%	
12:15 PM	0 sf	0.00%	21,666 sf	16.80%	25,841 sf	20.04%	
12:30 PM	0 sf	0.00%	20,218 sf	15.68%	23,694 sf	18.38%	
12:45 PM	0 sf	0.00%	19,162 sf	14.86%	21,895 sf	16.98%	
1:00 PM	0 sf	0.00%	17,887 sf	13.87%	19,883 sf	15.42%	
1:15 PM	0 sf	0.00%	16,953 sf	13.15%	18,338 sf	14.22%	
1:30 PM	0 sf	0.00%	15,861 sf	12.30%	16,690 sf	12.94%	
1:45 PM	0 sf	0.00%	15,090 sf	11.70%	15,476 sf	12.00%	
2:00 PM	0 sf	0.00%	14,218 sf	11.03%	14,305 sf	11.09%	
2:15 PM	0 sf	0.00%	13,590 sf	10.54%	13,590 sf	10.54%	
2:30 PM	0 sf	0.00%	12,184 sf	9.45%	12,184 sf	9.45%	
2:45 PM	0 sf	0.00%	10,193 sf	7.90%	10,192 sf	7.90%	
3:00 PM	0 sf	0.00%	6,829 sf	5.30%	6,829 sf	5.30%	
3:15 PM	0 sf	0.00%	4,578 sf	3.55%	4,578 sf	3.55%	
3:30 PM	0 sf	0.00%	2,857 sf	2.22%	2,857 sf	2.22%	
3:45 PM	0 sf	0.00%	2,023 sf	1.57%	2,023 sf	1.57%	
3:54 PM	0 sf	0.00%	1,557 sf	1.21%	1,557 sf	1.21%	

FASTCAST

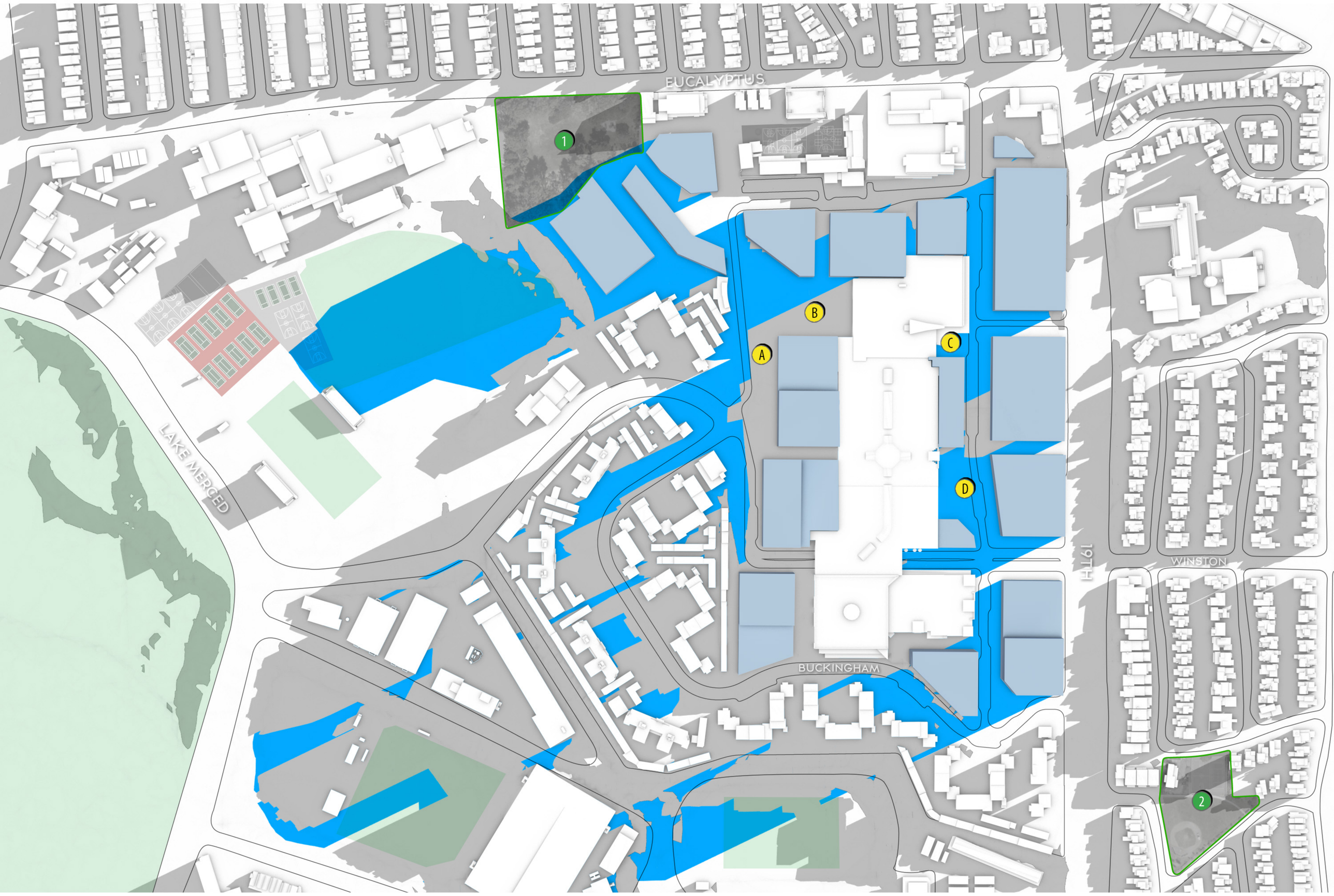
EXHIBIT C:

ANNUAL HOURLY SHADOW PROJECTIONS - ALTERNATIVE VARIANT

C1.1

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

6:47 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

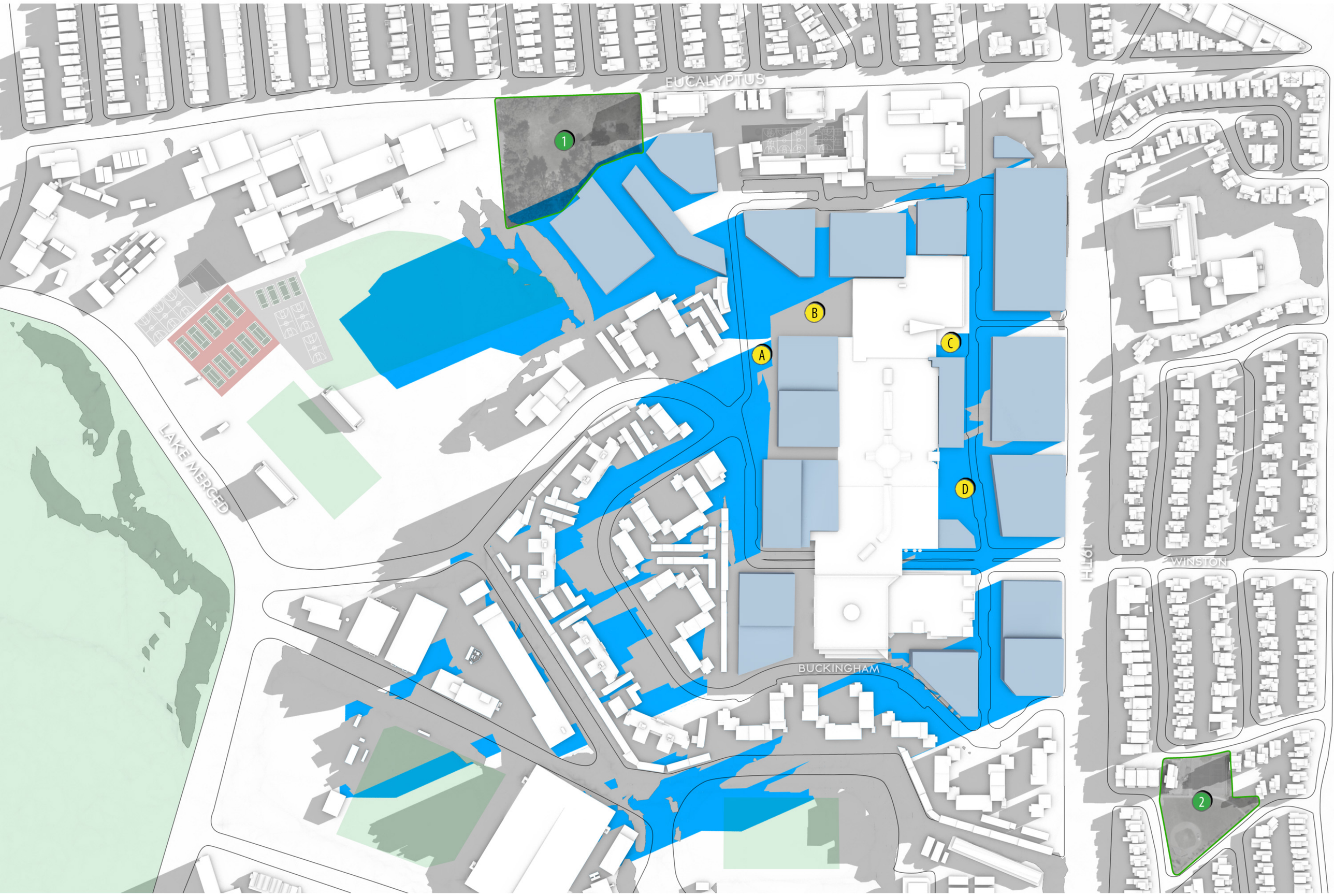
Proposed Open Spaces

- A
- B
- C
- D

C1.2

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

7:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

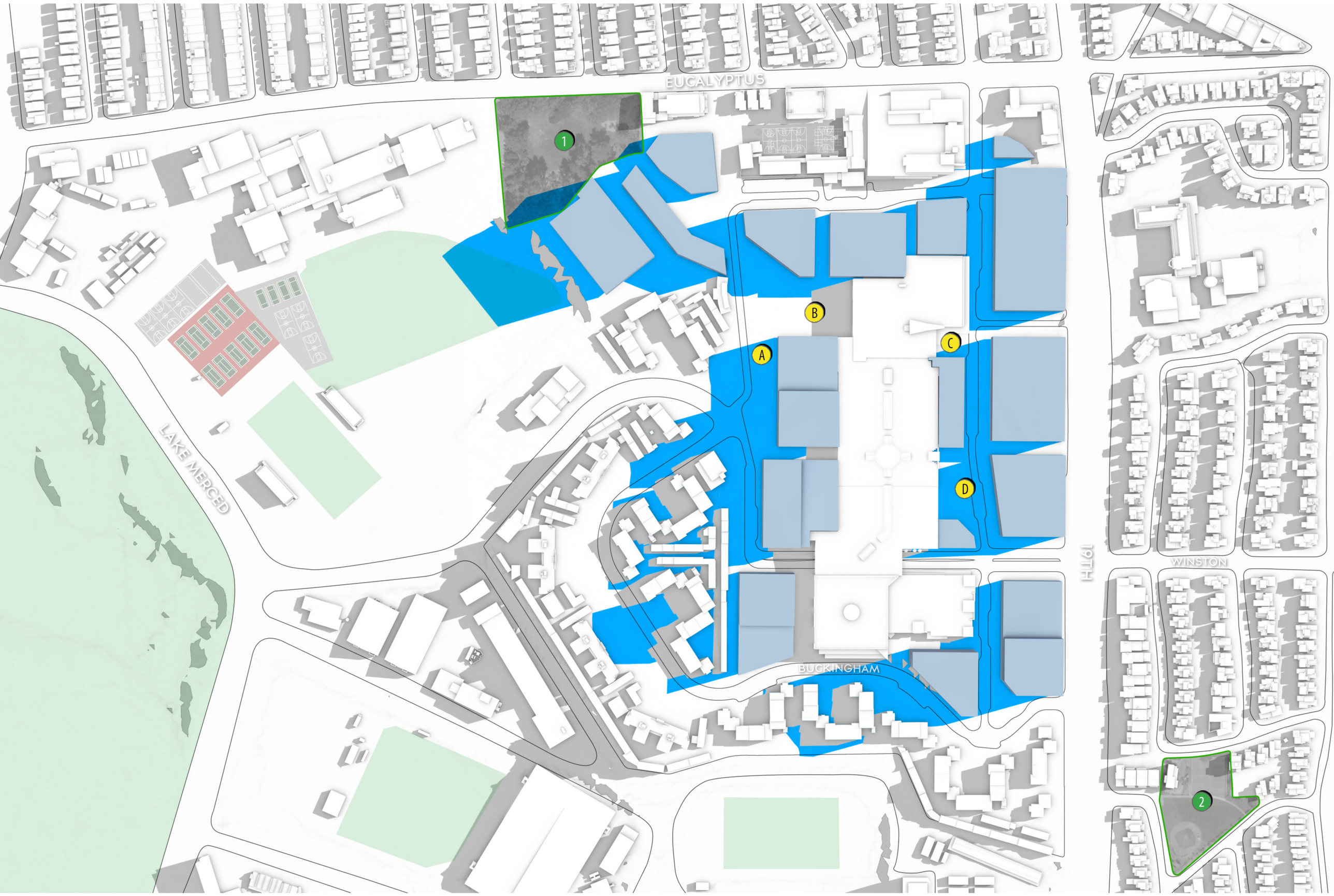
Proposed Open Spaces

- A
- B
- C
- D

C1.3

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

8:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.4

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.5

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

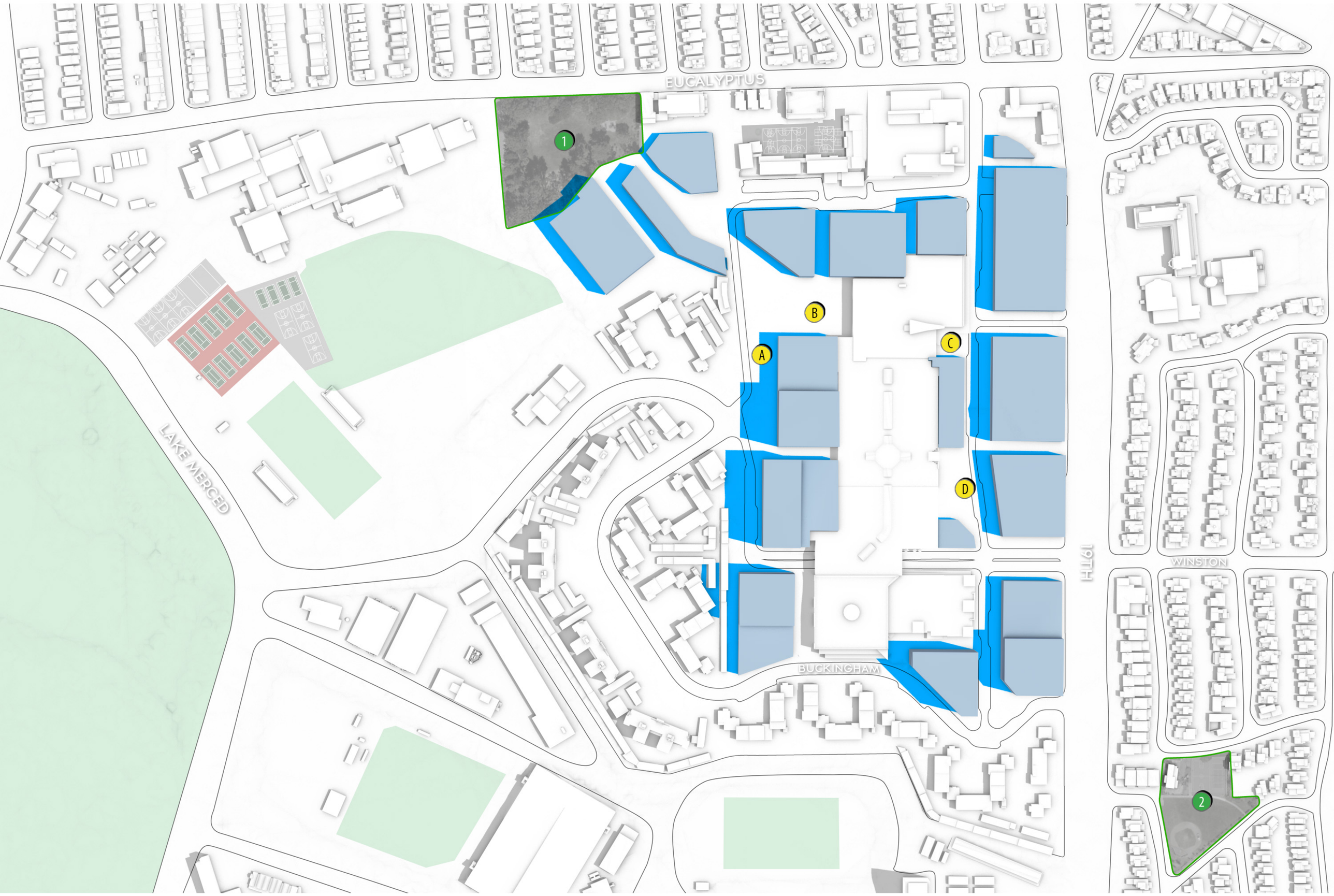
Proposed Open Spaces

- A
- B
- C
- D

C1.6

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.7

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)

N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

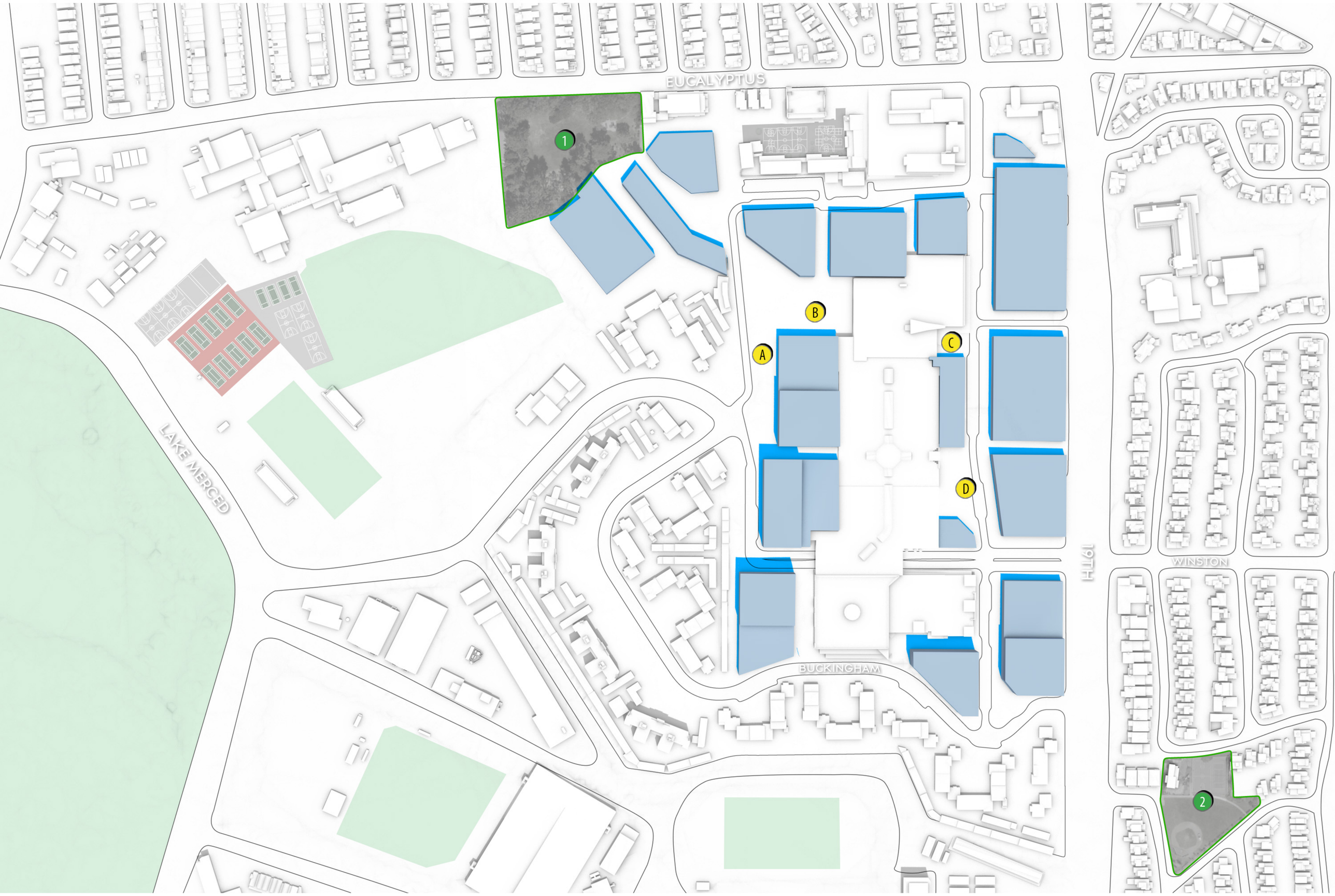
Proposed Open Spaces

- A
- B
- C
- D

C1.8

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

1:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

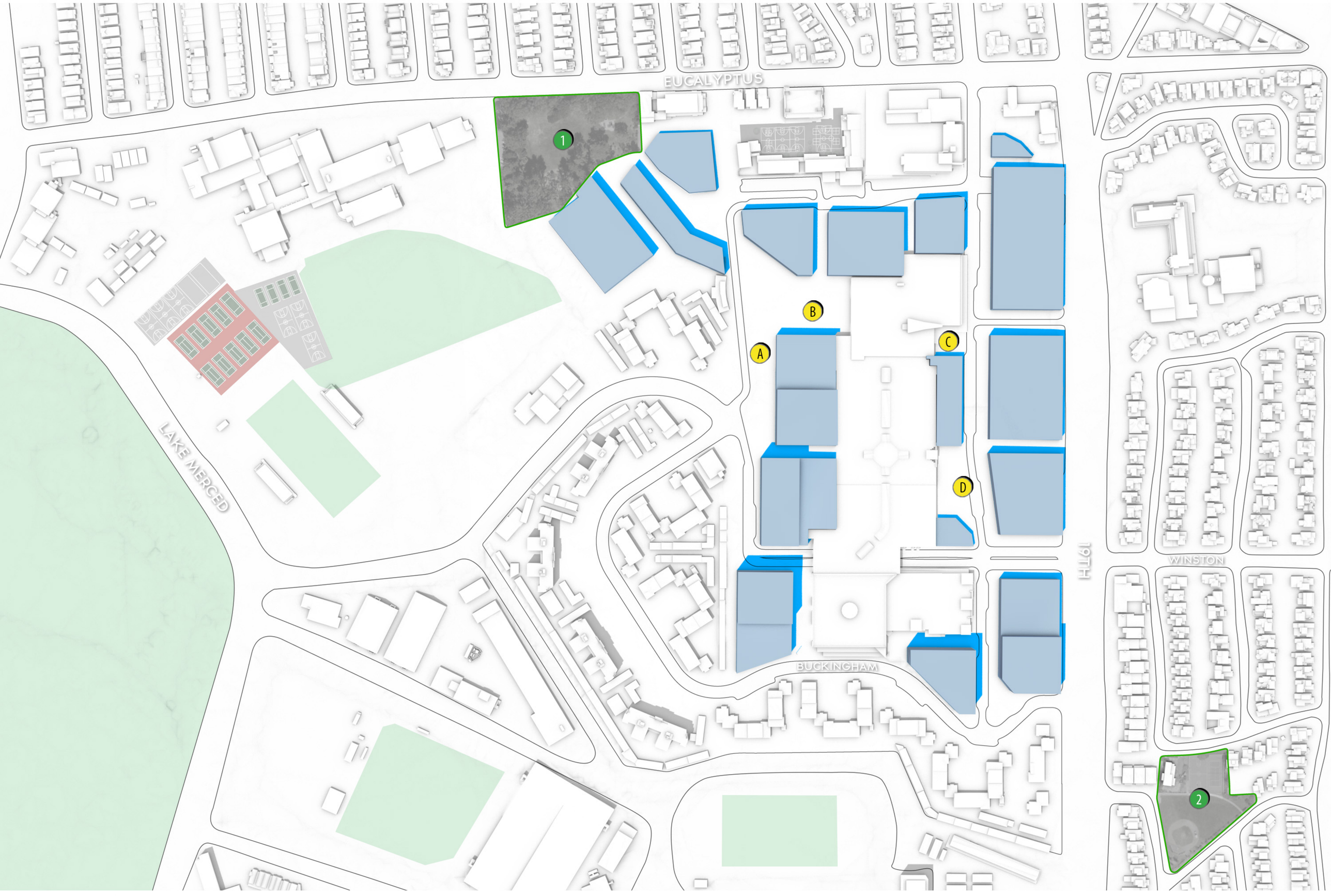
Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.9

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

2:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

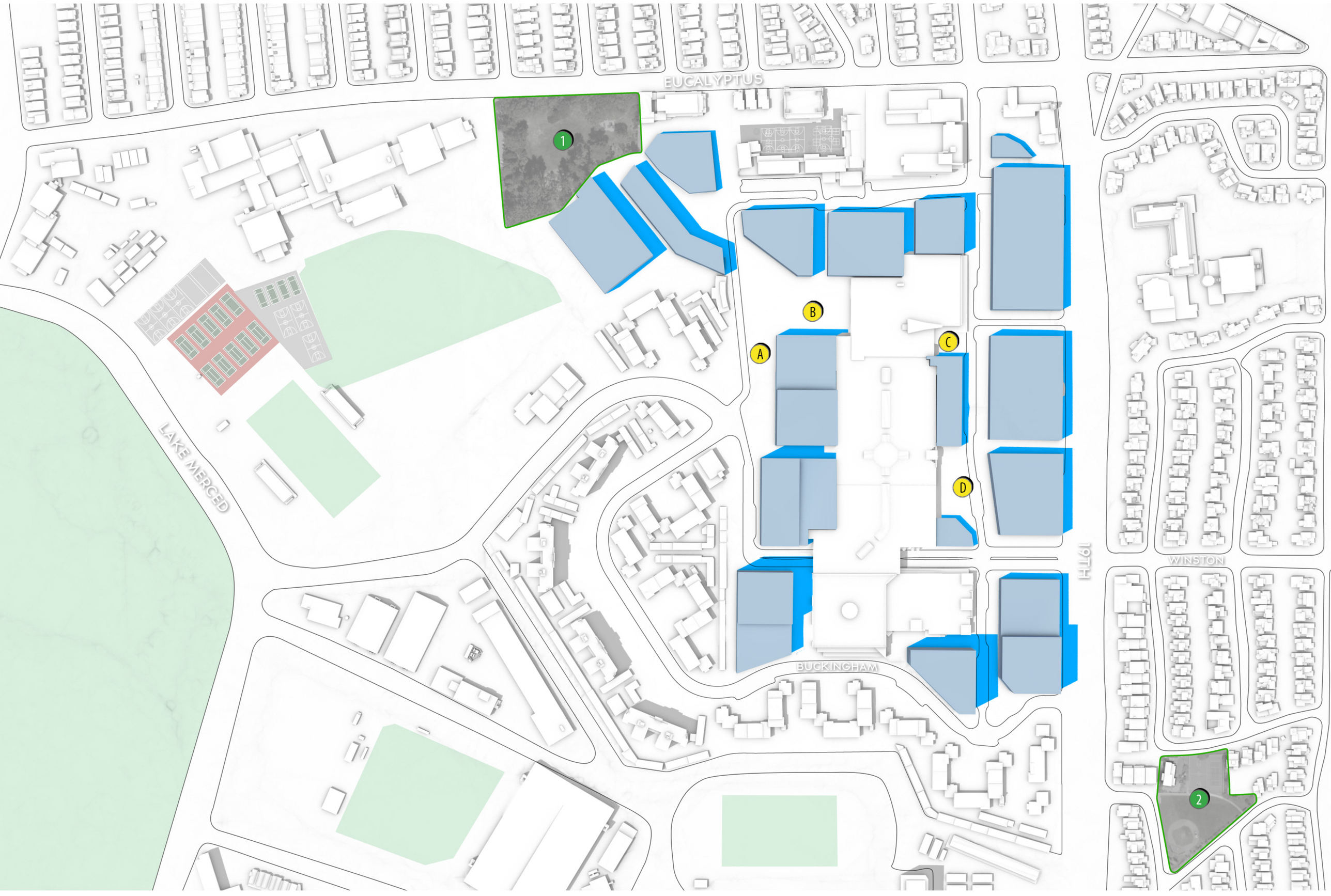
Proposed Open Spaces

- A
- B
- C
- D

C1.10

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

3:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

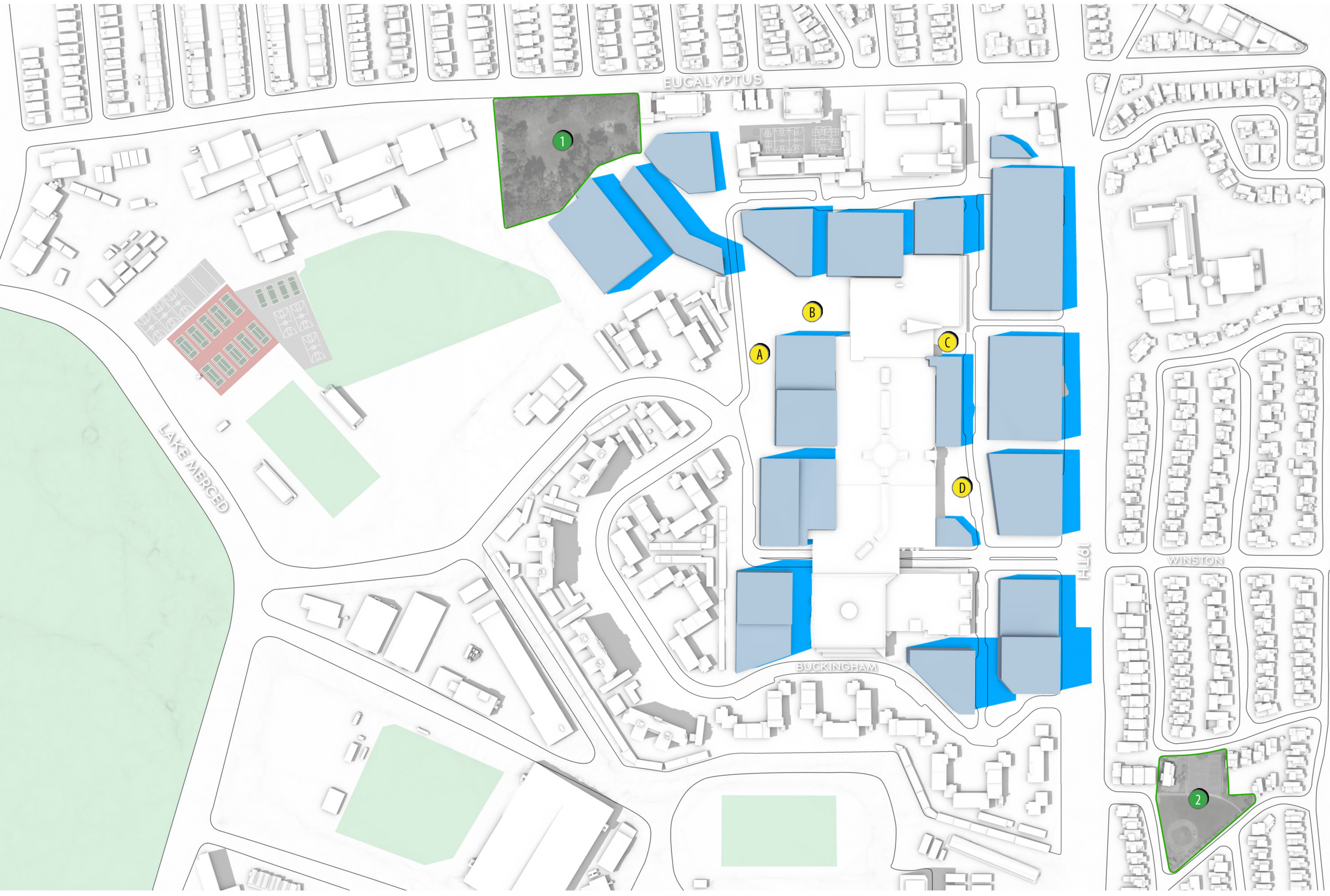
Proposed Open Spaces

- A
- B
- C
- D

C1.11

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

4:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

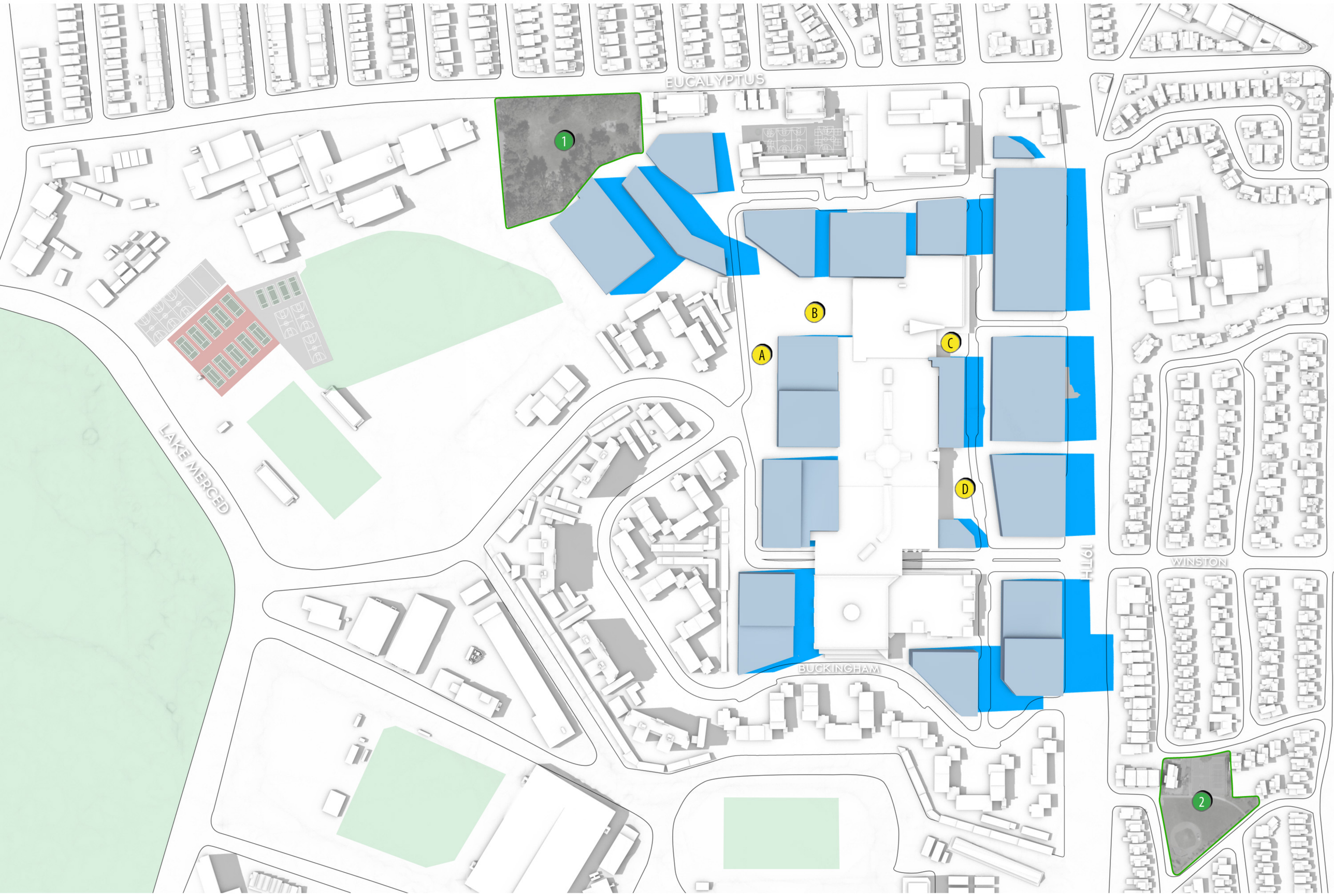
Proposed Open Spaces

- A
- B
- C
- D

C1.12

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

5:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

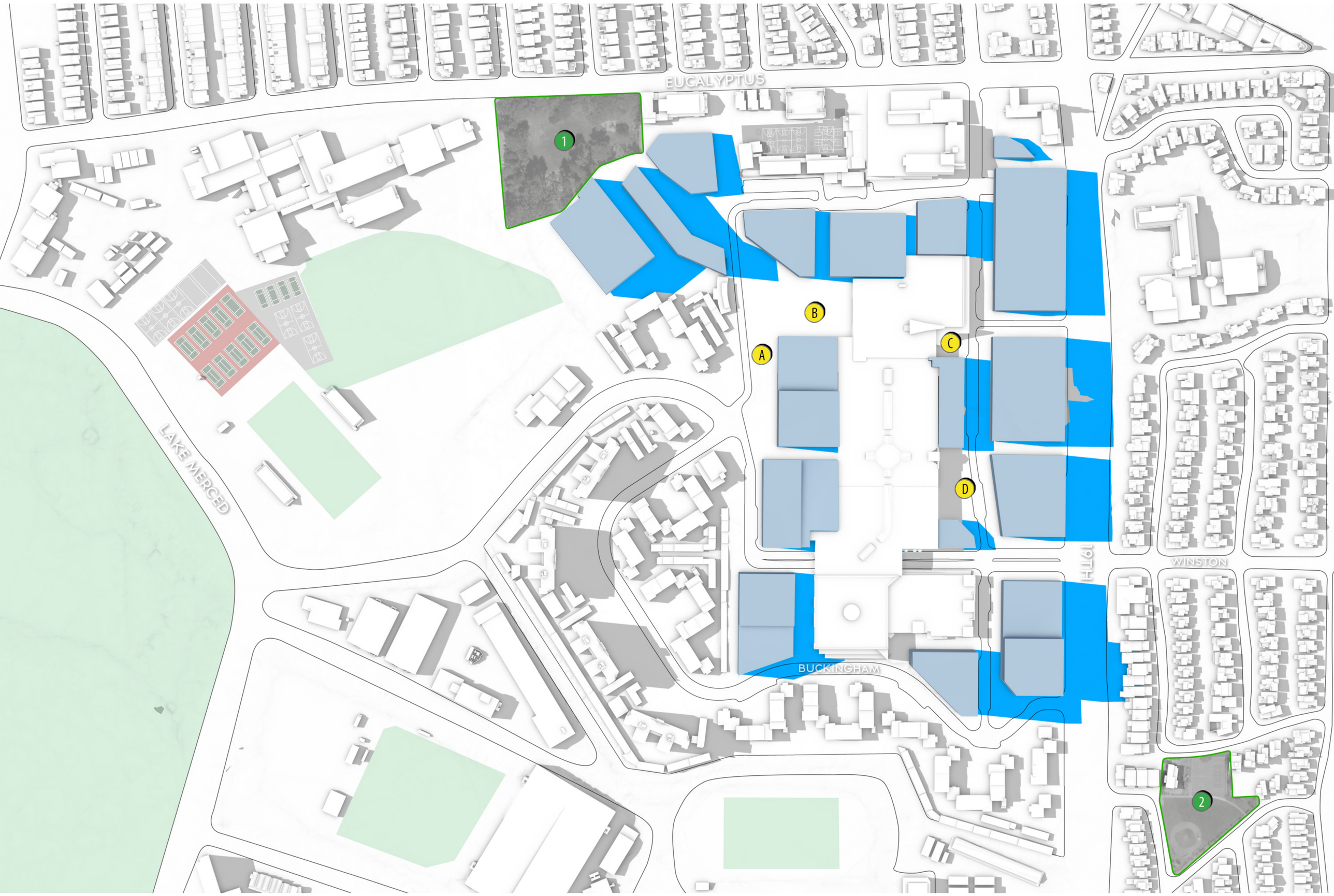
Proposed Open Spaces

- A
- B
- C
- D

C1.13

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

6:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

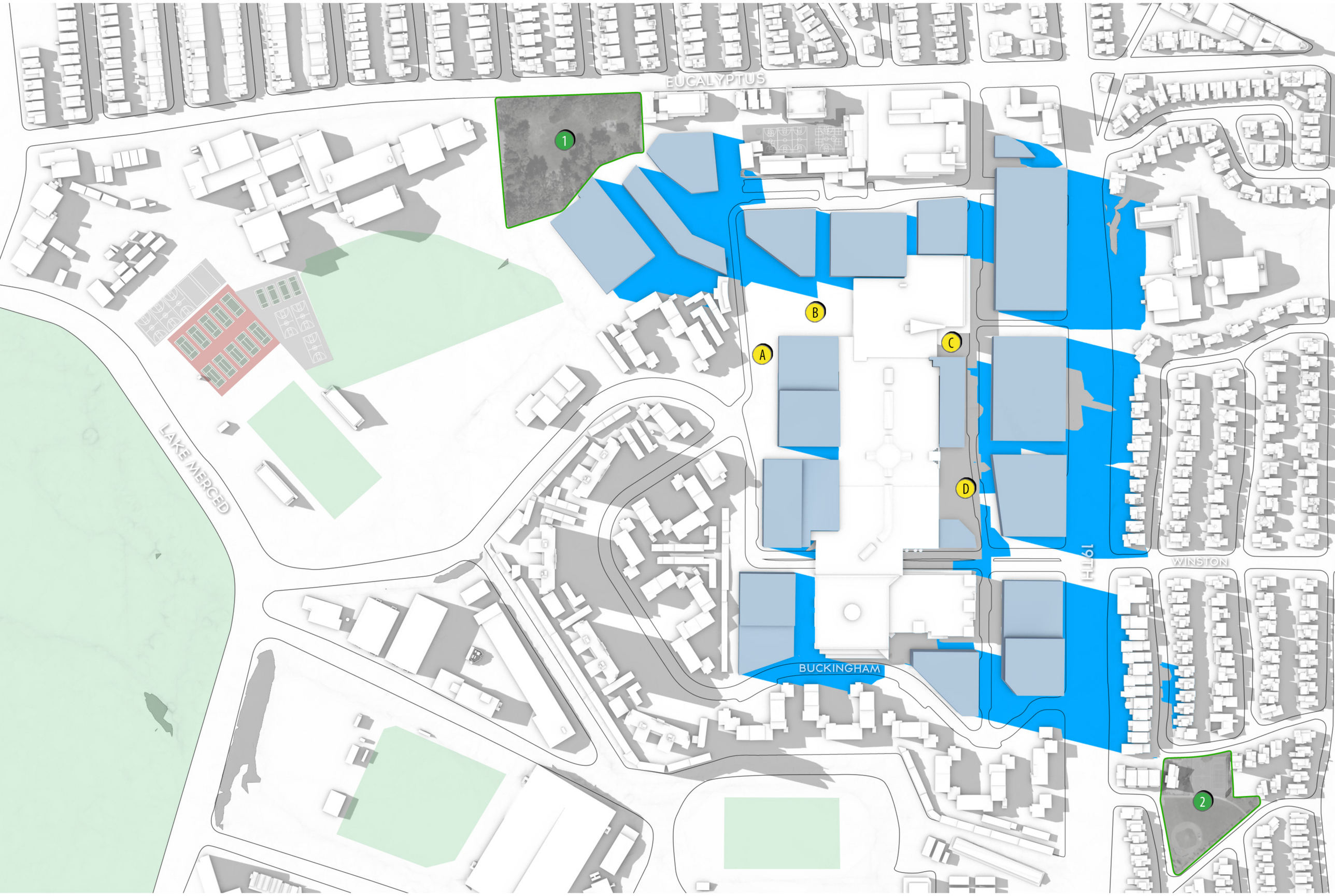
Proposed Open Spaces

- A
- B
- C
- D

C1.14

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

7:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

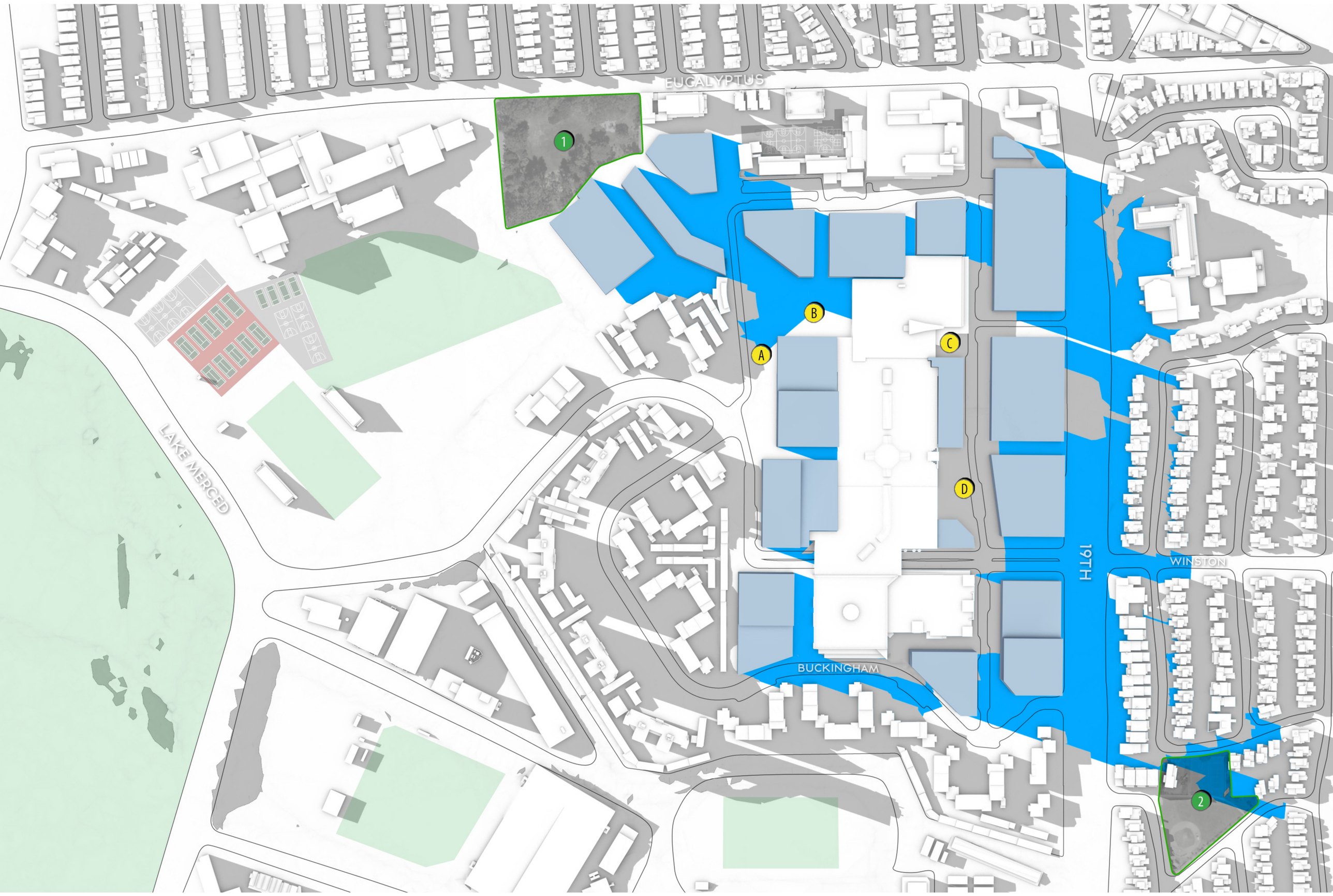
Proposed Open Spaces

- A
- B
- C
- D

C1.15

STONESTOWN PROJECT (REVISED VARIANT)

Summer Solstice (*No Mirror Date*)



N

SUMMER SOLSTICE (*NO MIRROR DATE*)
JUNE 21

7:36 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

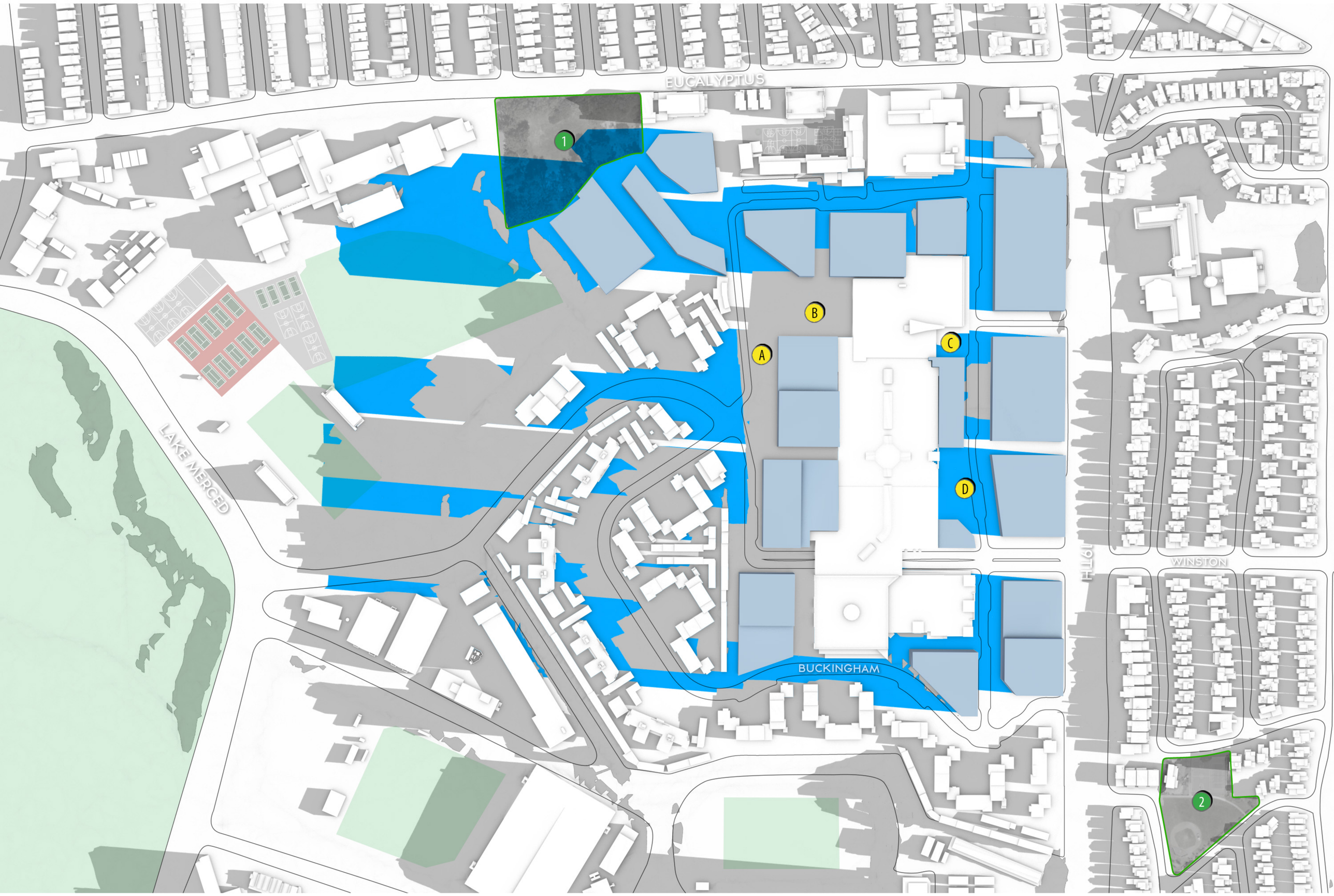
Proposed Open Spaces

- A
- B
- C
- D

C1.16

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

7:57 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

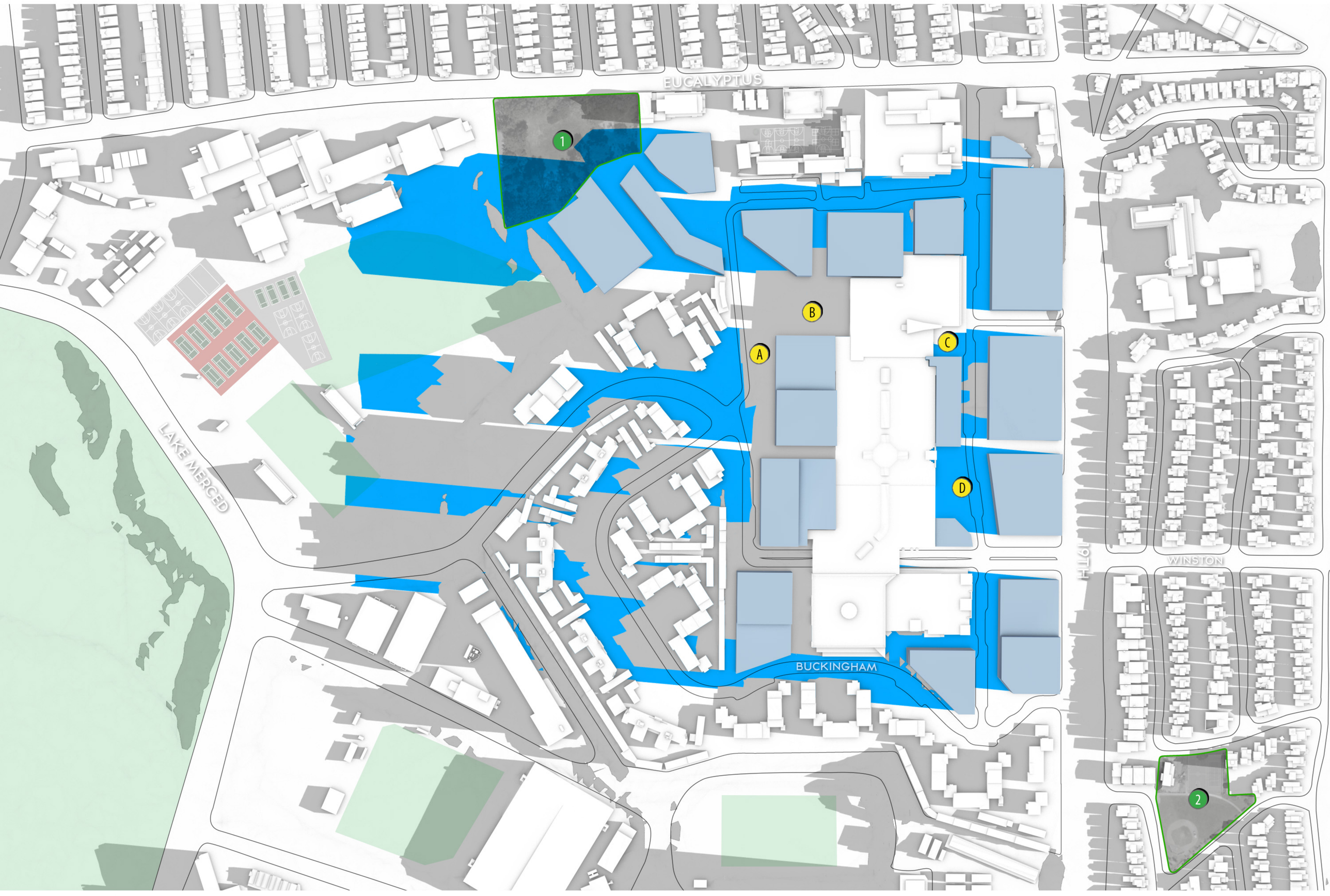
Proposed Open Spaces

- A
- B
- C
- D

C1.17

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

8:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

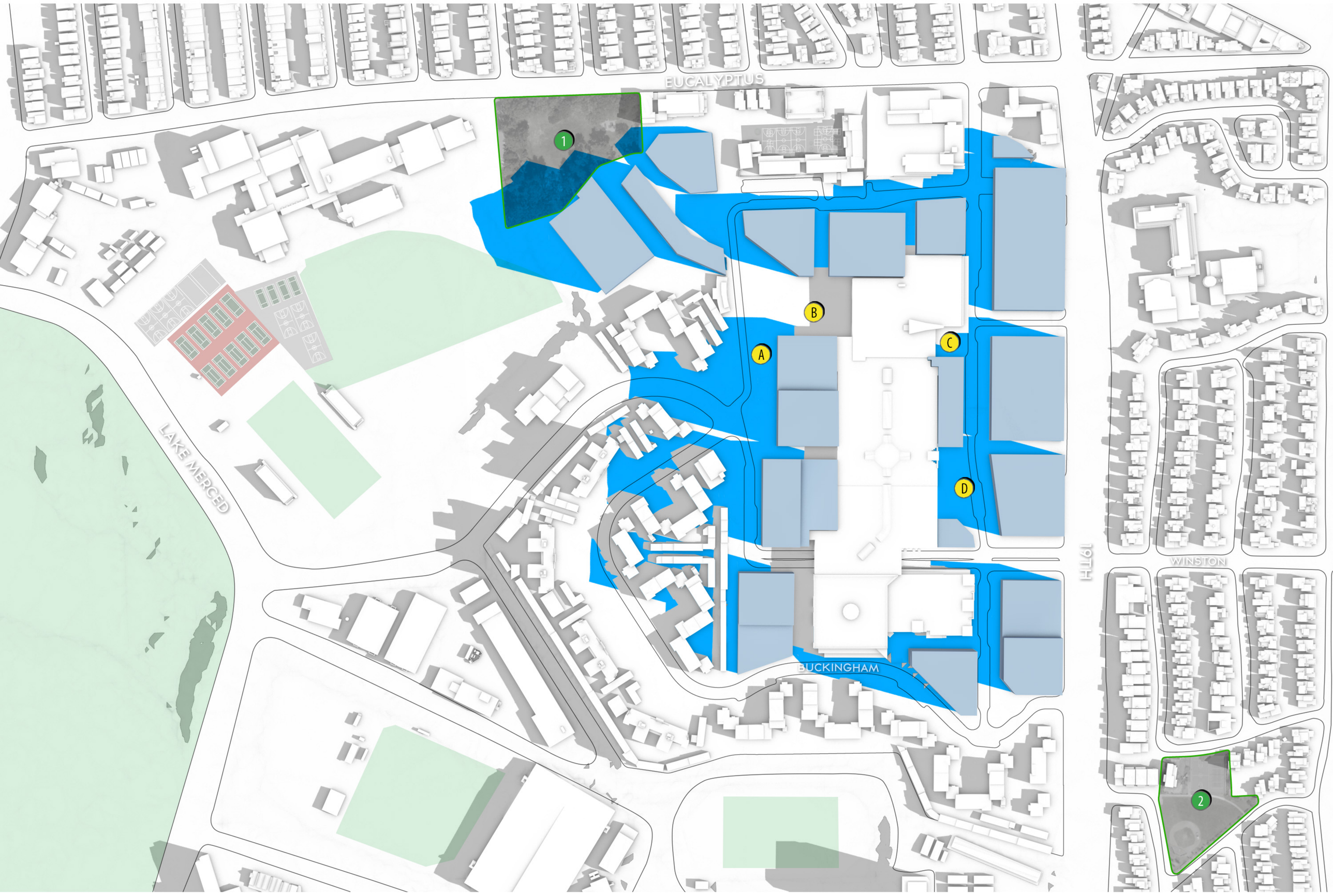
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.18 STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.19

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

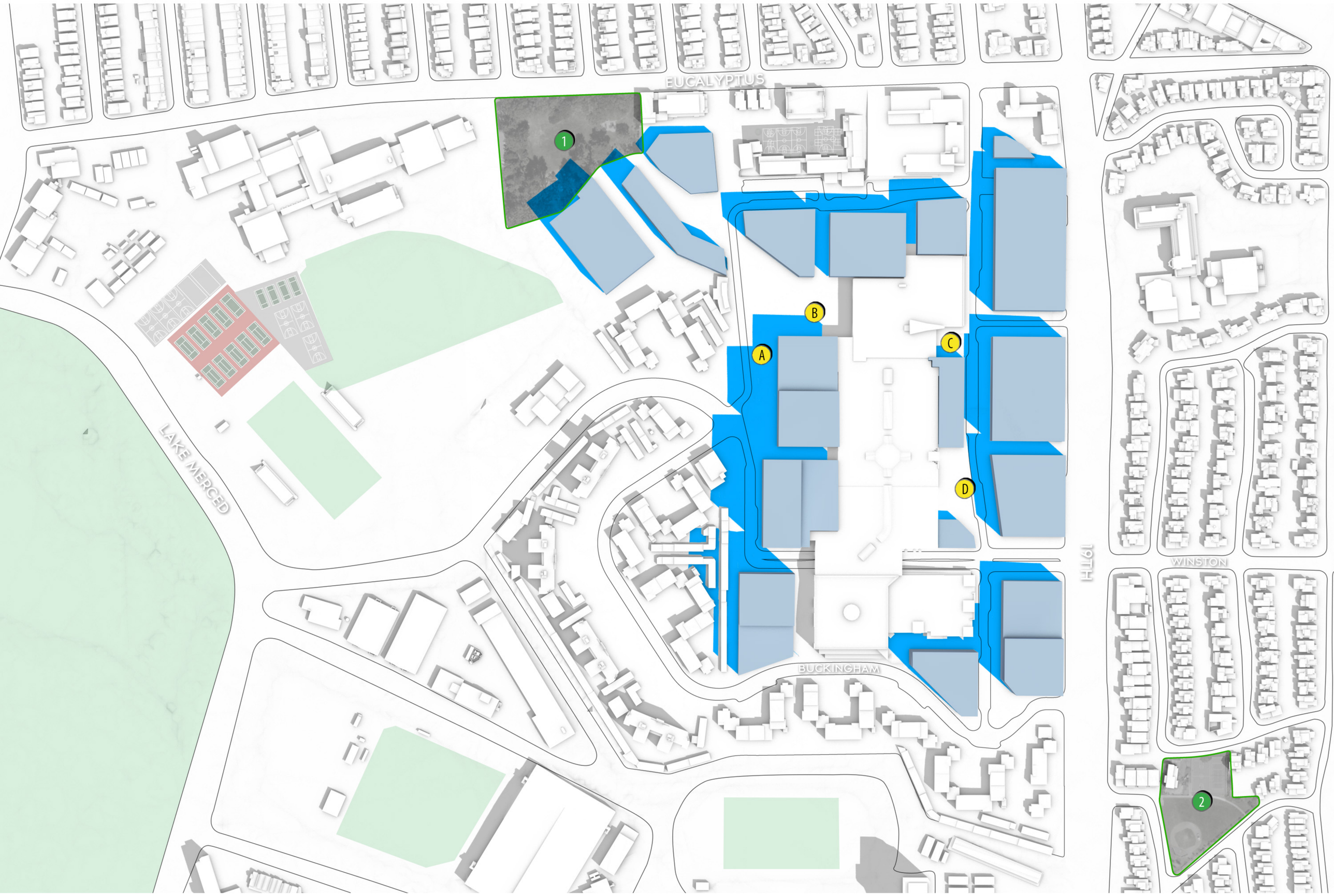
Proposed Open Spaces

- A
- B
- C
- D

C1.20

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.21

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.22

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

1:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.23

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes

N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

2:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

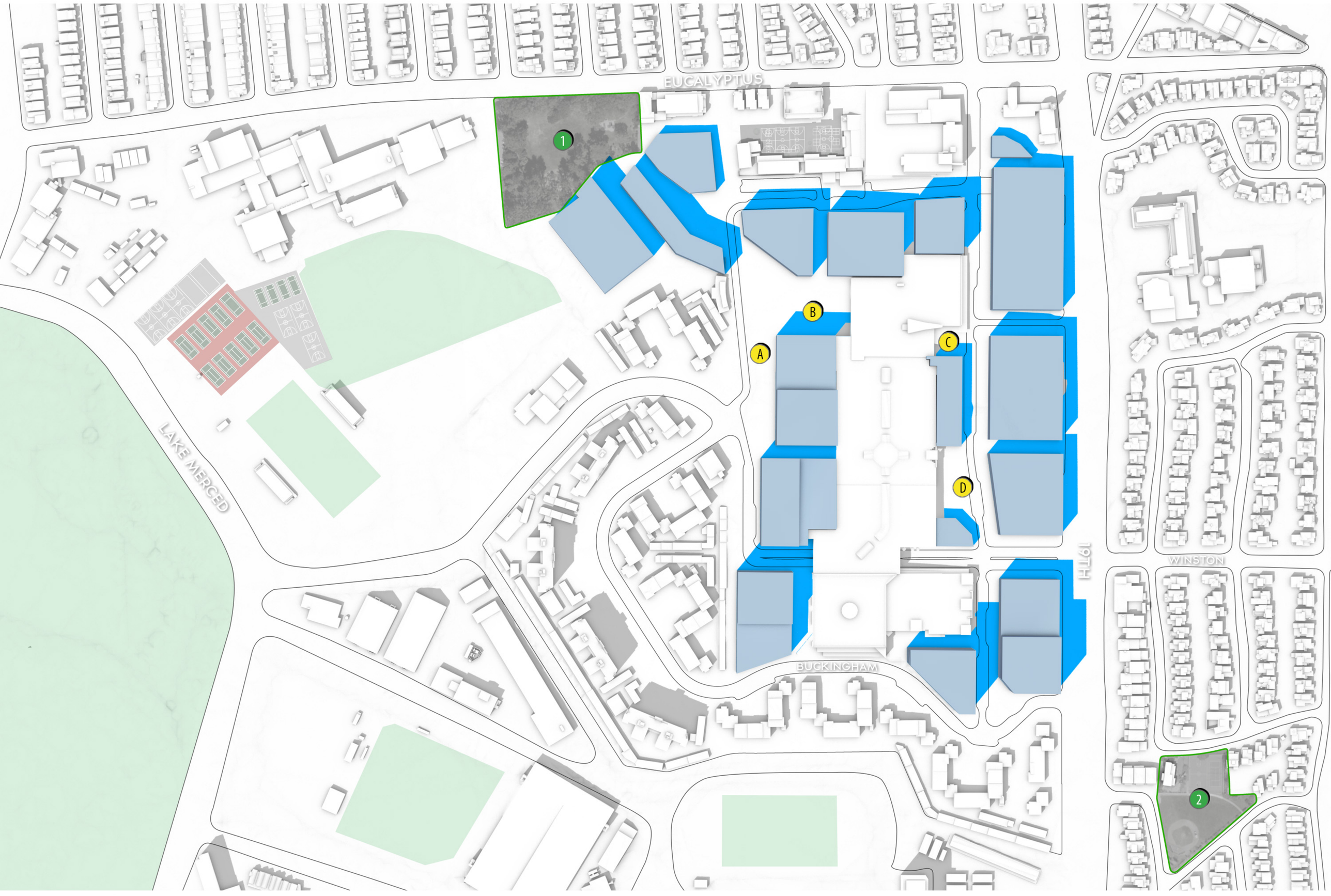
Proposed Open Spaces

- A
- B
- C
- D

C1.24

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

3:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

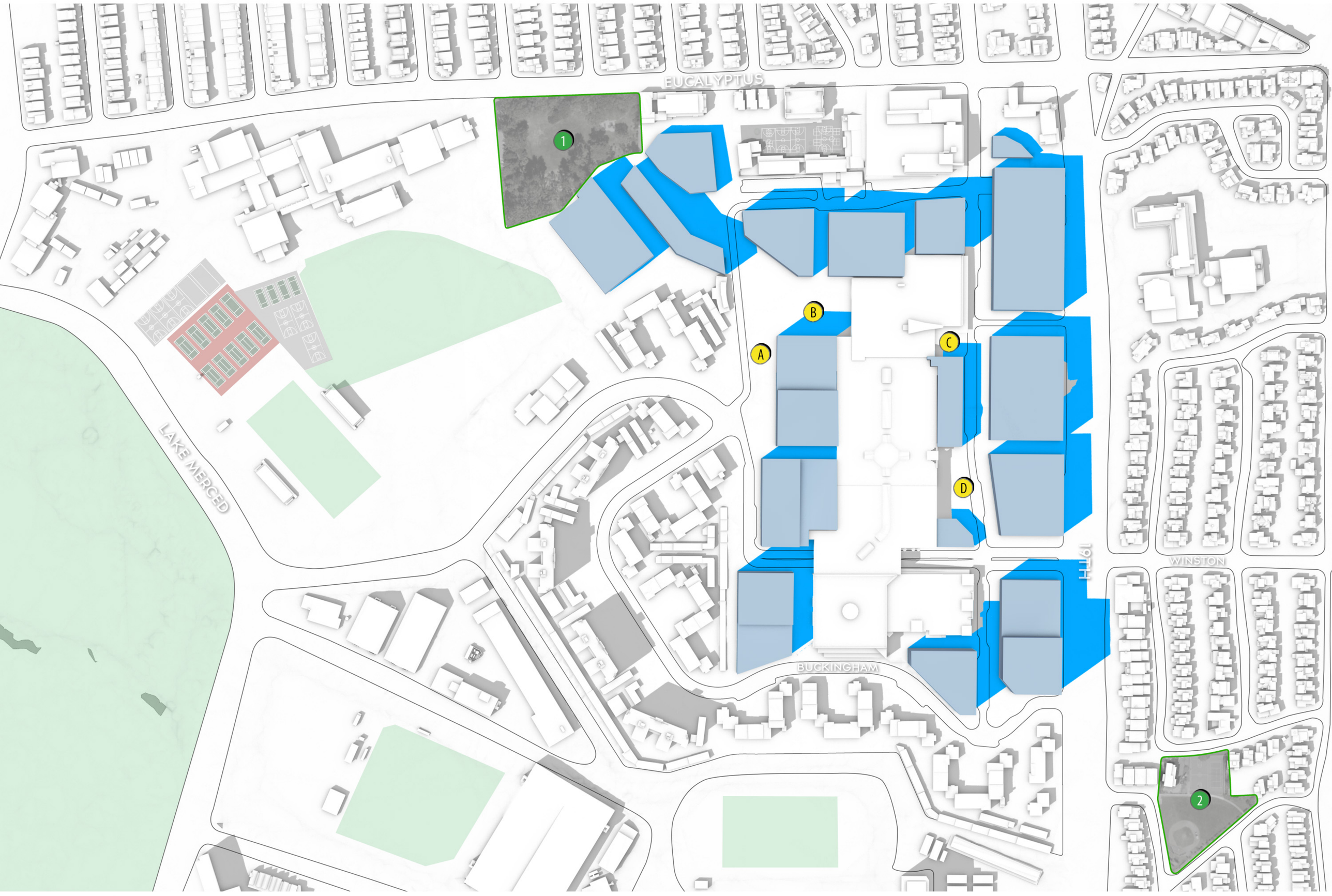
Proposed Open Spaces

- A
- B
- C
- D

C1.25

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

4:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

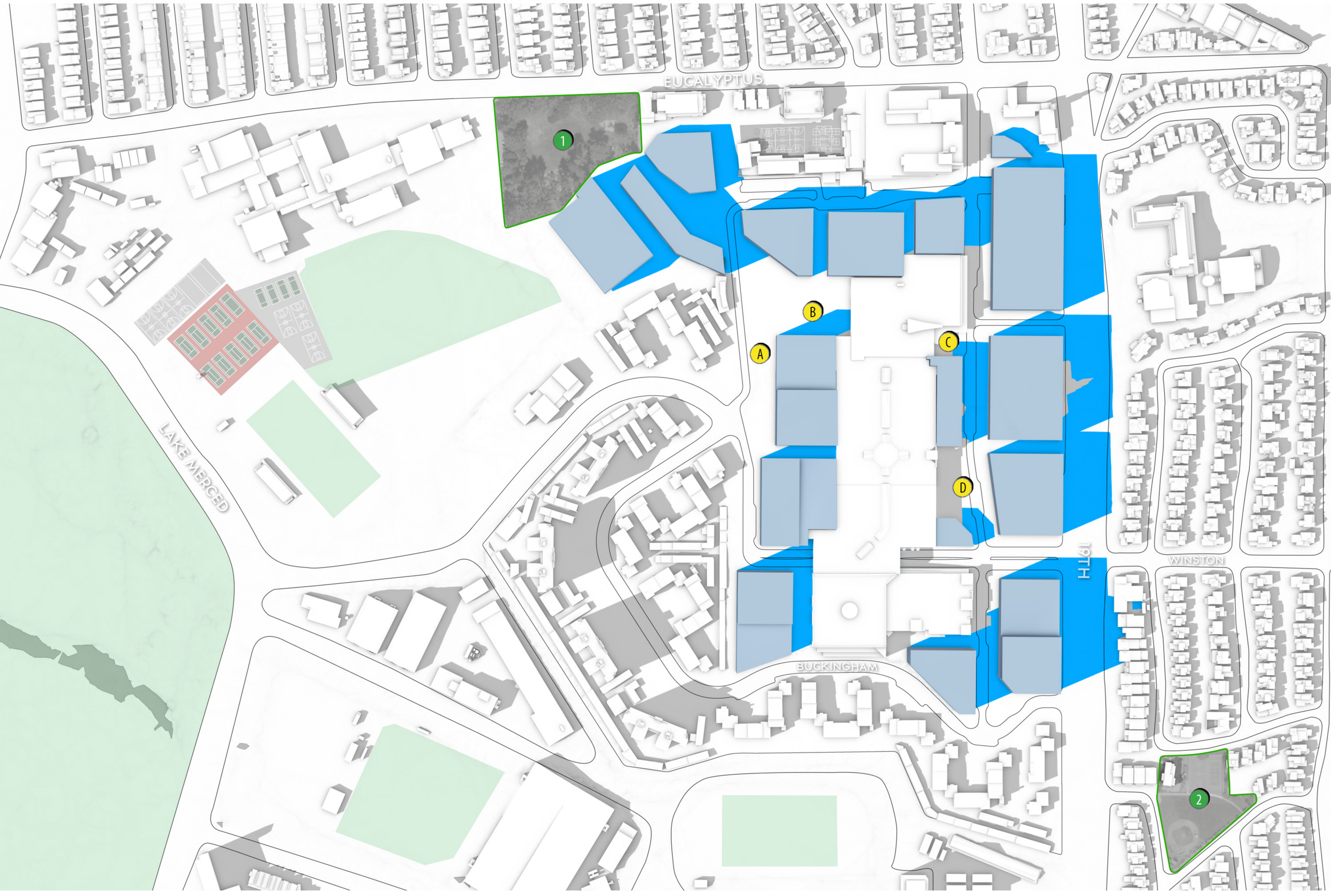
Proposed Open Spaces

- A
- B
- C
- D

C1.26

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

5:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

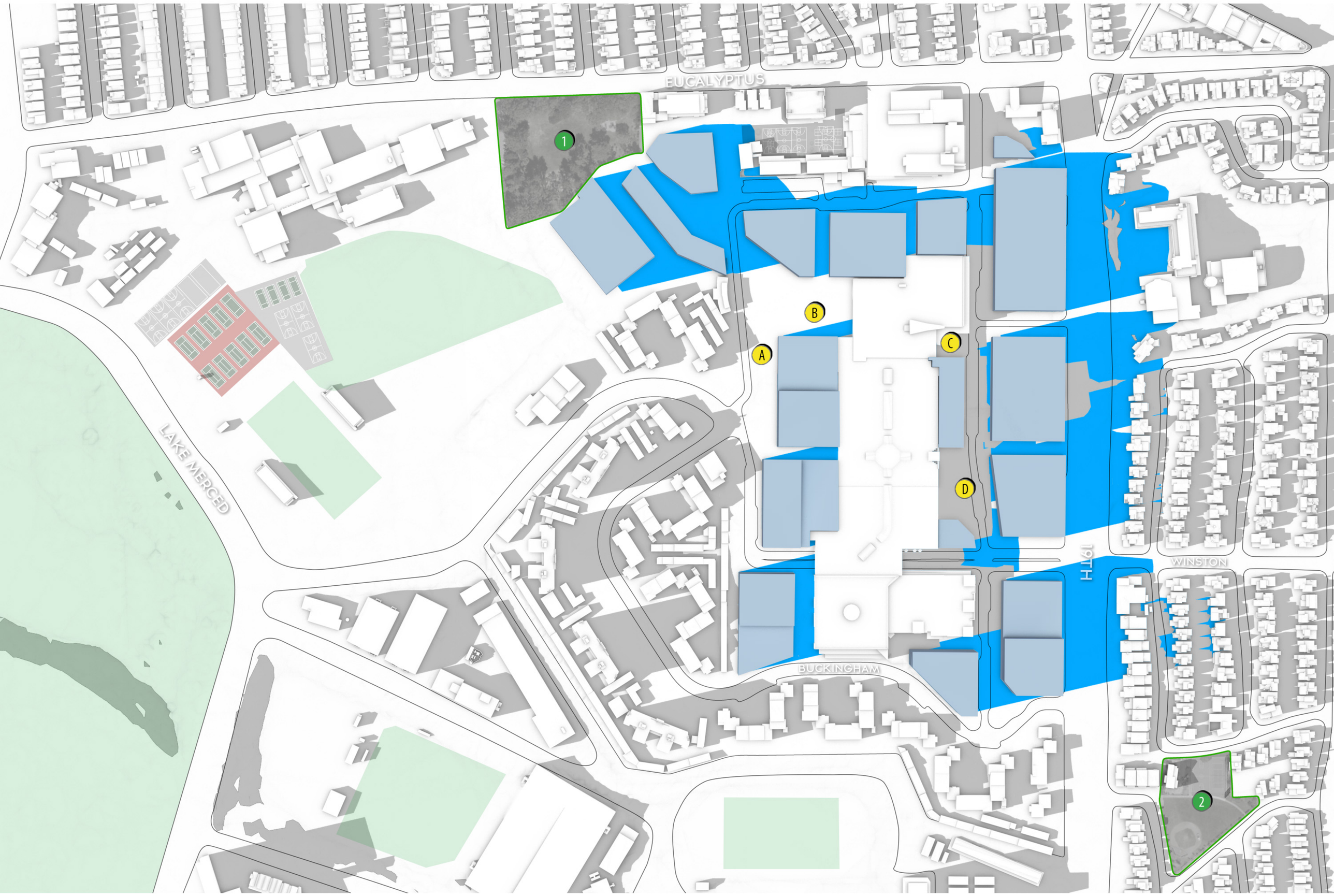
Proposed Open Spaces

- A
- B
- C
- D

C1.27

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

6:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

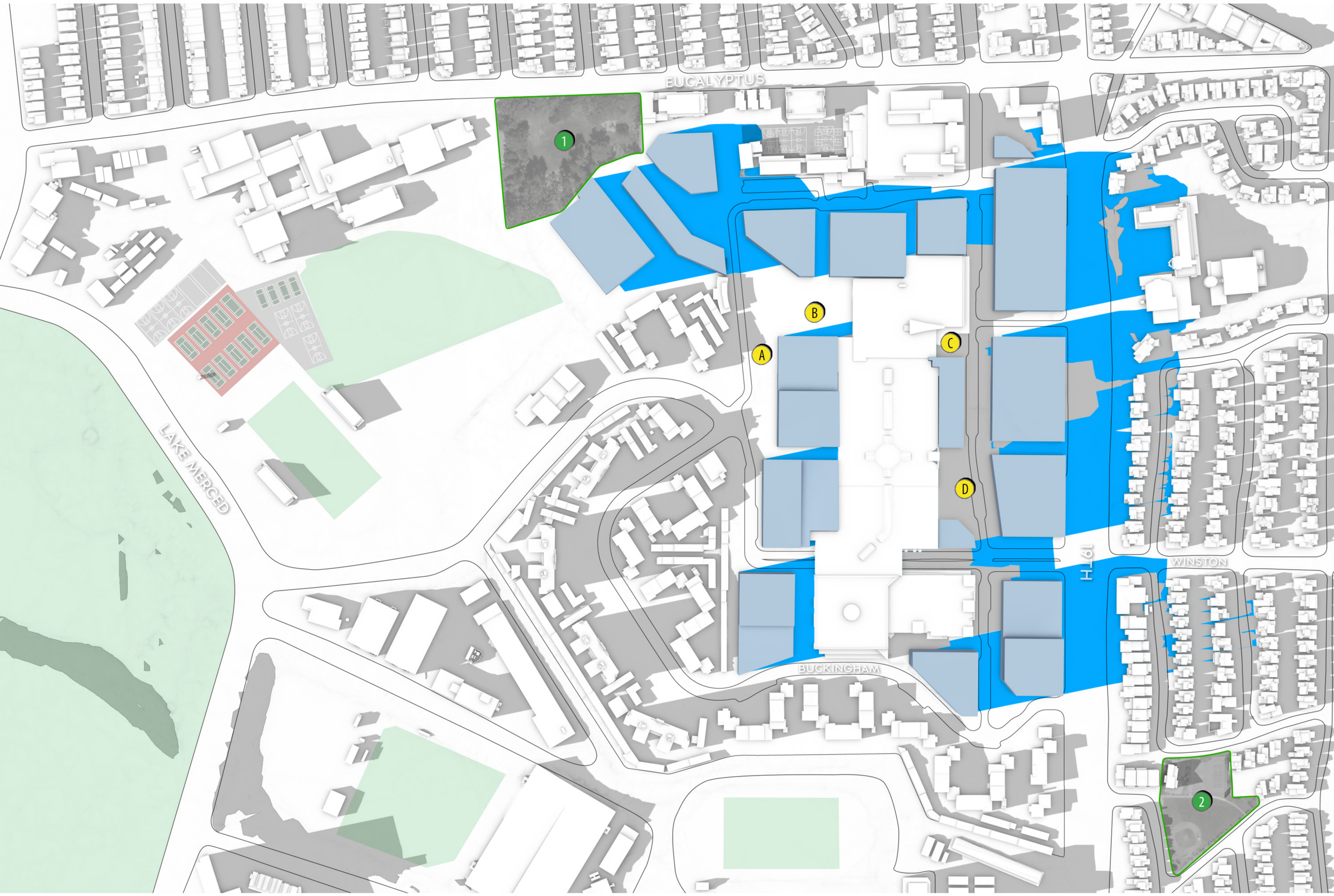
Proposed Open Spaces

- A
- B
- C
- D

C1.28

STONESTOWN PROJECT (REVISED VARIANT)

Fall/Spring Equinoxes



N

FALL EQUINOX (*SPRING SIMILAR*)
SEPTEMBER 21

6:10 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

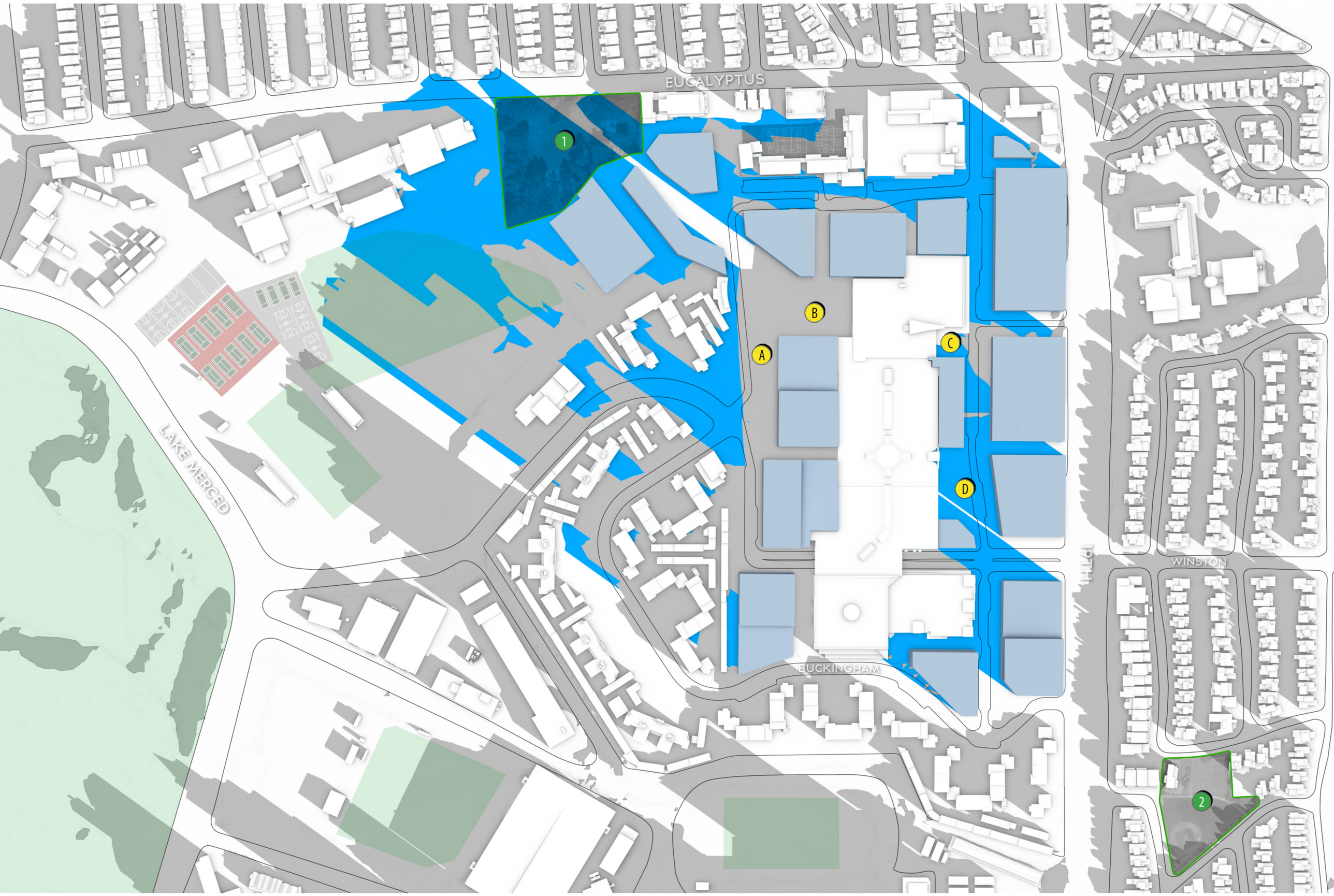
Proposed Open Spaces

- A
- B
- C
- D

C1.29

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

8:20 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

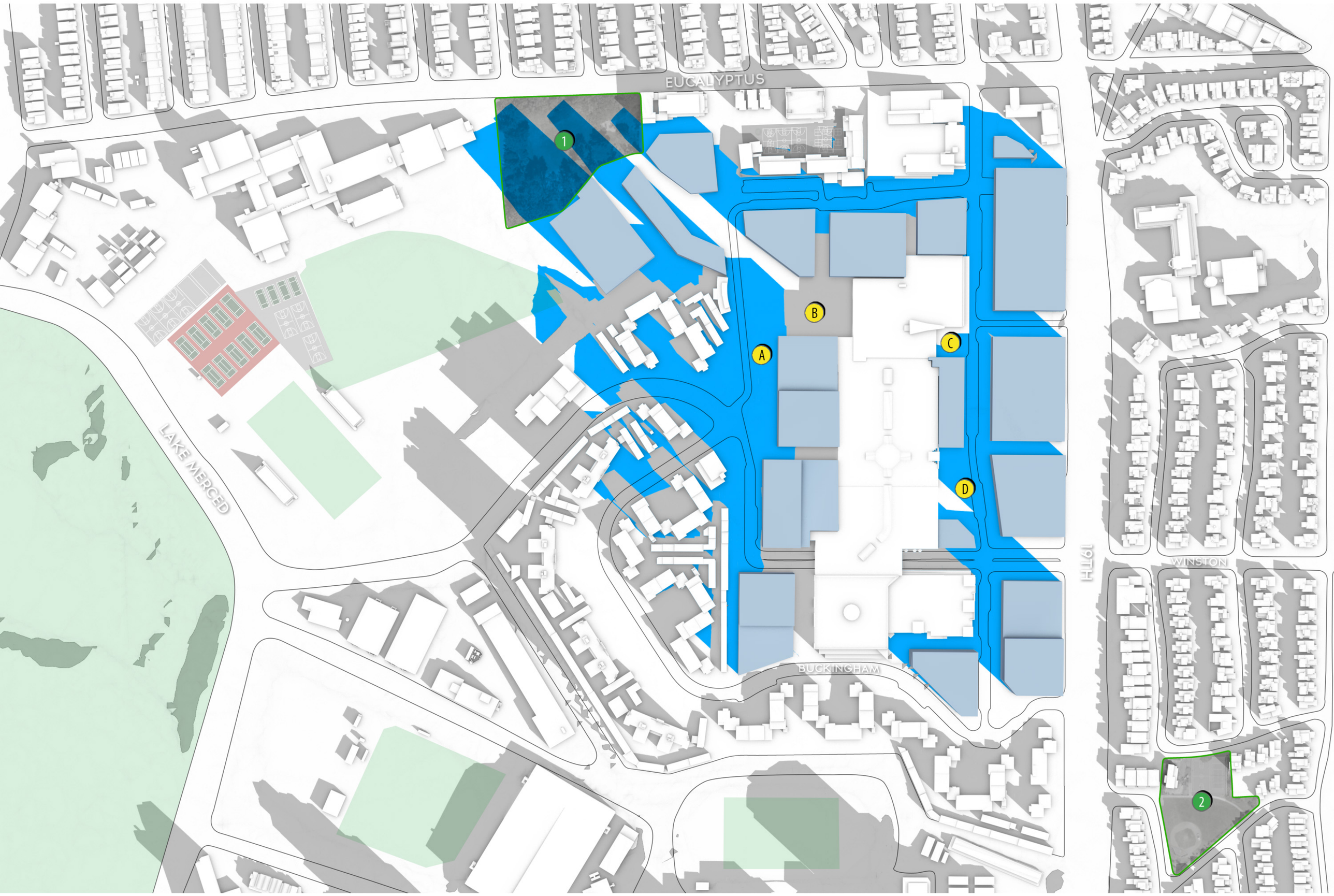
Proposed Open Spaces

- A
- B
- C
- D

C1.30

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

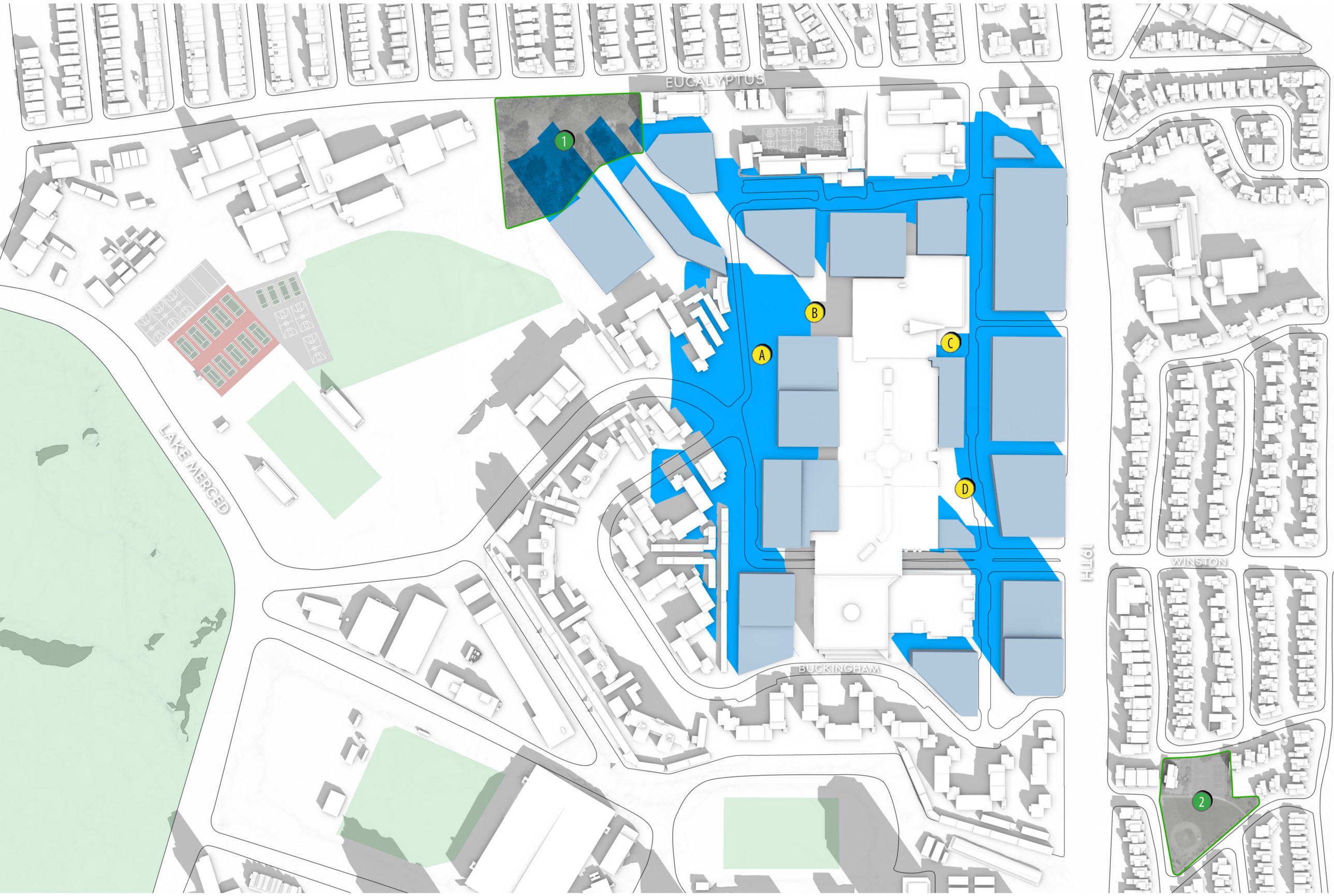
Proposed Open Spaces

- A
- B
- C
- D

C1.31

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.32

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.33

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

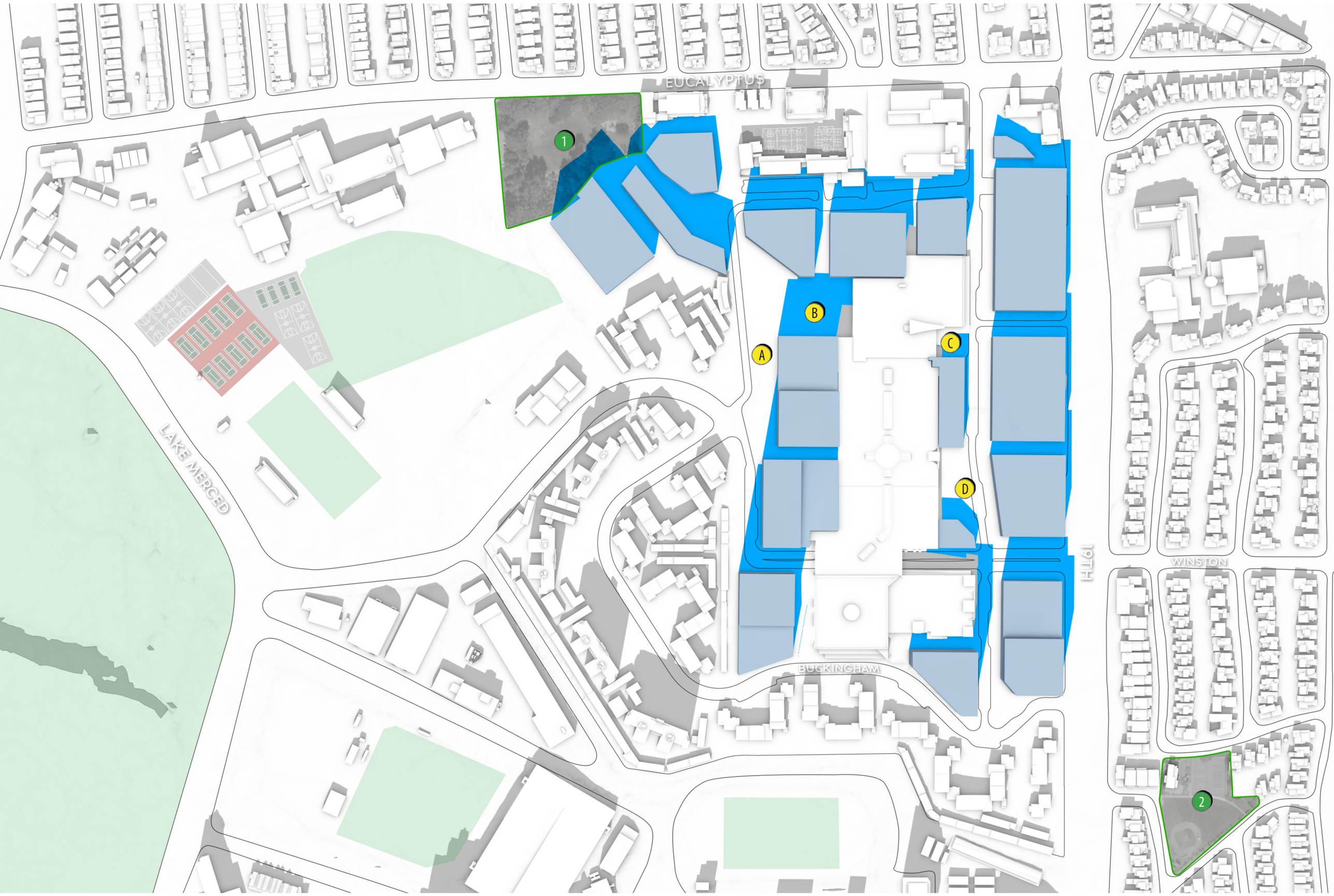
Proposed Open Spaces

- A
- B
- C
- D

C1.34

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

1:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

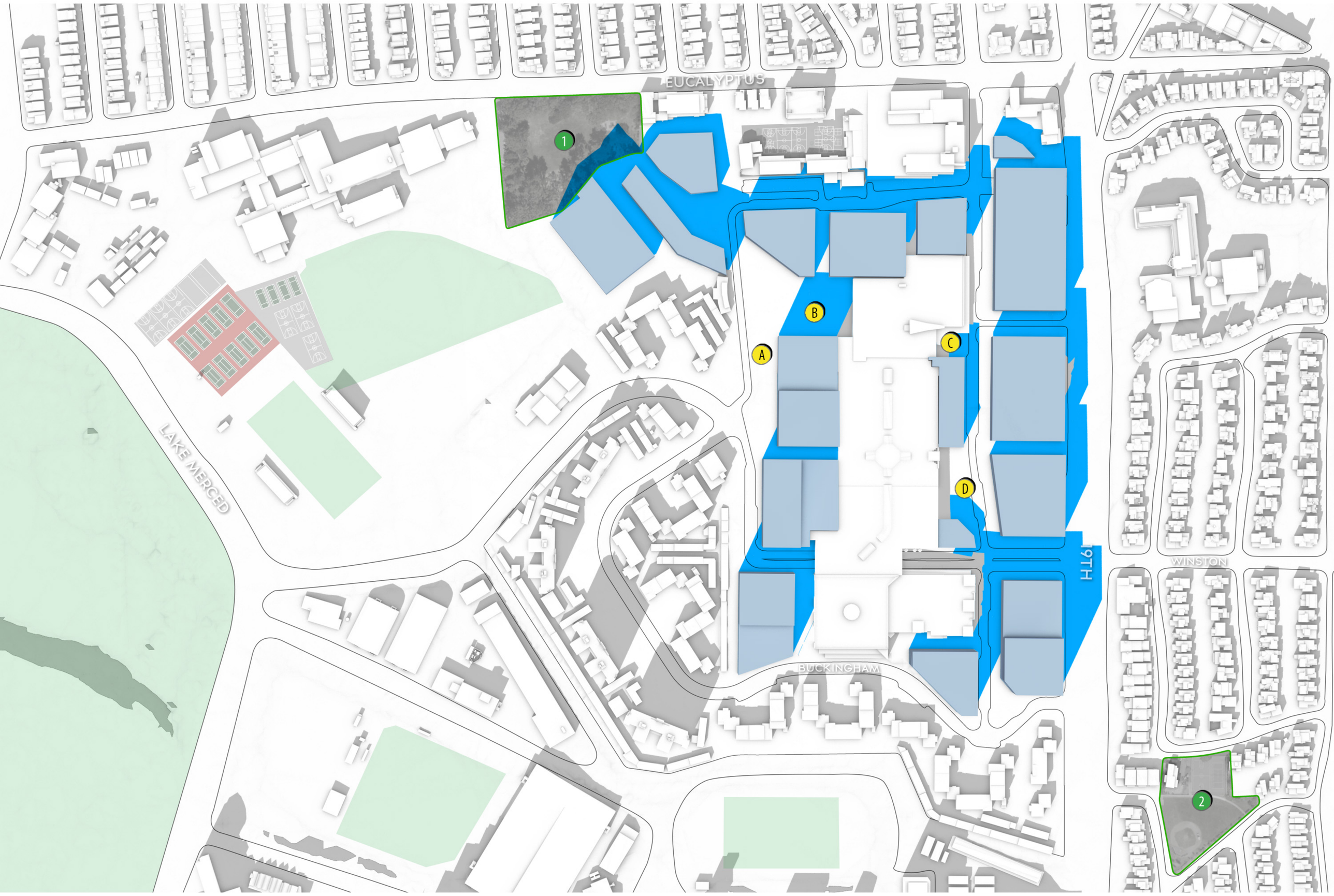
Proposed Open Spaces

- A
- B
- C
- D

C1.35

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

2:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.36

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)

N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

3:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

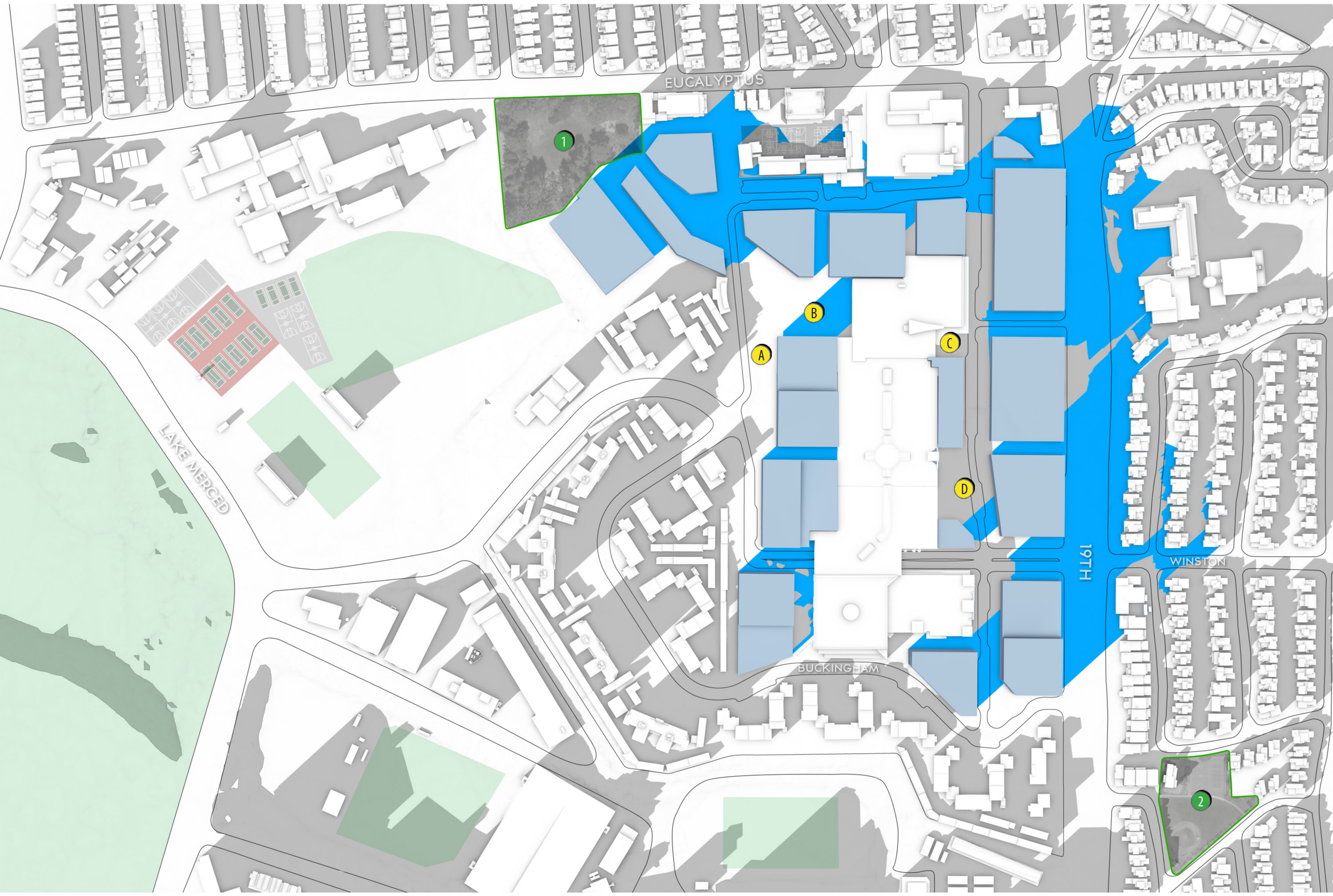
Proposed Open Spaces

- A
- B
- C
- D

C1.37

STONESTOWN PROJECT (REVISED VARIANT)

Winter Solstice (*No Mirror Date*)



N

WINTER SOLSTICE (*NO MIRROR DATE*)
DECEMBER 21

3:55 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

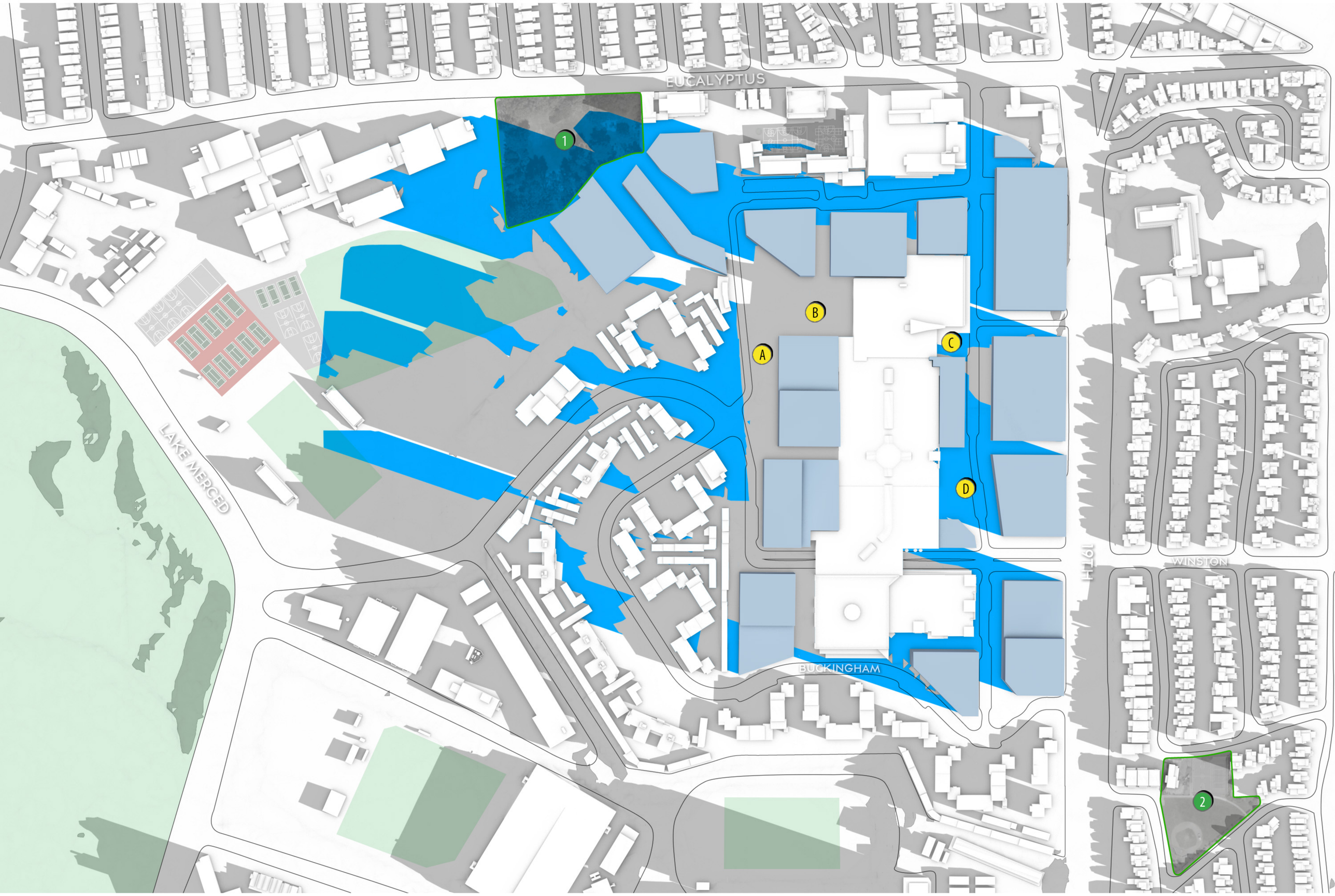
Proposed Open Spaces

- A
- B
- C
- D

C1.38

STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

8:23 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

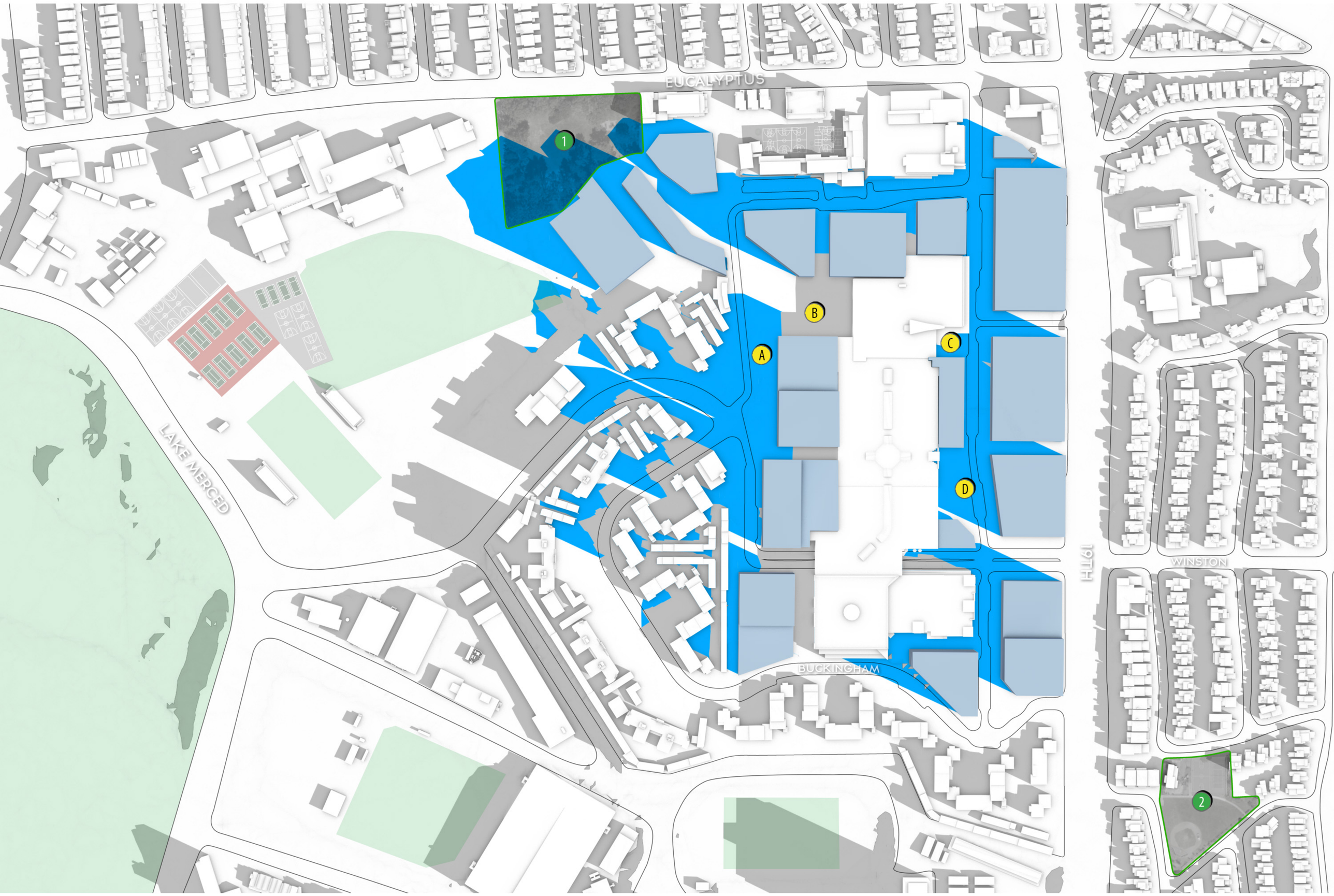
Proposed Open Spaces

- A
- B
- C
- D

C1.39

STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)



N

OCTOBER 18
(FEBRUARY 22 MIRROR)

9:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.40

STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

10:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces

1. Rolph Nicol Park
2. Junipero Serra Playground

Proposed Open Spaces

- A
- B
- C
- D

C1.41

STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

11:00 AM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

C1.42

STONESTOWN PROJECT (REVISED VARIANT)

October 18 (*February 22 Mirror Date*)

N

OCTOBER 18
(FEBRUARY 22 MIRROR)

12:00 PM

LEGEND

- Existing Structures
- Existing Shadows
- Stonestown Project (Revised Variant)
- Proposed Project's Net New Shadow

Rec/Park Open Spaces
- 1 Rolph Nicol Park
- 2 Junipero Serra Playground

Proposed Open Spaces
- A
- B
- C
- D

ATTACHMENT I

Revised Variant Water Supply Assessment

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. **23-0194**

WHEREAS, Under the California Environmental Quality Act (CEQA) and California Water Code Section 10910(g)(1), the San Francisco Public Utilities Commission (SFPUC) is required to prepare and approve a Water Supply Assessment (WSA) for the cumulative water demands presented by the proposed 3251 20th Avenue (Stonestown) Project, which would redevelop approximately 27 acres surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-used residential and retail community in the Lakeshore area of southwest San Francisco; and

WHEREAS, The 3251 20th Avenue (Stonestown) Project is required to comply with the City's Non-potable Water Ordinance, Article 12C of the San Francisco Health Code, and as a result, the Project will offset its potable water use through the use of alternate water sources; and

WHEREAS, A WSA is an informational document that assesses the adequacy of water supplies to serve a proposed project and is required to be prepared as part of the CEQA environmental review process; and

WHEREAS, The water demand associated with the 3251 20th Avenue (Stonestown) Project is encompassed within the 2020 Urban Water Management Plan water demand projections; and

WHEREAS, The water demand associated with the 3251 20th Avenue (Stonestown) Project is also encompassed within the 2023 Interim Water Demand Projections, which the SFPUC prepared after the 2020 Urban Water Management Plan water demand projections to account for slightly higher housing unit projections associated with the Housing Element 2022 Updated adopted by the City in January 2023; and

WHEREAS, Approval of a WSA as an informational document is not considered an approval action as defined in section 15378 of the CEQA Guidelines; and

WHEREAS, A WSA must be approved at a public meeting by the governing body of the public water supplier that would serve the proposed project; and

WHEREAS, On October 24, 2022 by Resolution No. 22-0186, this Commission approved a WSA for the 3251 20th Avenue (Stonestown) Project, which concluded that the SFPUC has adequate water supplies to meet the proposed project's water demands through 2040; and

WHEREAS, Following this Commission's approval of the WSA, the SFPUC updated its project total retail water demand projections to account for the adopted Housing Element 2022 Update; and

WHEREAS, Following this Commission's approval of the WSA, the project description was revised to include more residential units, less non-retail sales and service use, and no hotel, resulting in higher water demand estimates for the current proposed project compared to those provided in the WSA approved on October 24, 2022; and

WHEREAS, The SFPUC staff prepared the attached Revised WSA for the proposed 3251 20th Avenue (Stonestown) Project, analyzing water supply and demand under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement (Scenario 1), (2) Implementation of the Proposed Voluntary Agreement (Scenario 2), and (3) Implementation of the Bay-Delta Plan Amendment (Scenario 3); and

WHEREAS, The Revised WSA concludes that the SFPUC's total projected water supplies through 2045 will (1) meet the demands of the proposed project in normal years under all three scenarios, (2) meet the demands of the proposed project in dry years without rationing beyond the SFPUC's level of service (LOS) goal of no more than 20% system-wide rationing under Scenario 1, (3) meet the demands of the proposed project in dry years but require rationing closer to the LOS goal under Scenario 2, and (4) not reliably meet the demands of the proposed project without rationing at a level greater than that required to achieve the LOS goal under Scenario 3; and

WHEREAS, In dry years, the proposed project may have lower levels of mandatory water use reduction compared to existing buildings because of the installation of water-efficient plumbing fixtures and non-potable water systems associated with new construction, and the relatively small volume of water demand generated by the proposed project itself would not exacerbate the projected shortfalls resulting from implementation of the Bay-Delta Plan Amendment; now, therefore, be it

RESOLVED, This Commission approves the attached Revised Water Supply Assessment for the proposed 3251 20th Avenue (Stonestown) Project pursuant to California Water Code Section 10910(g).

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at it's meeting of October 24, 2023.

Secretary, Public Utilities Commission

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

September 26, 2023

TO: Commissioner Newsha K. Ajami, President
Commissioner Sophie Maxwell, Vice President
Commissioner Tim Paulson
Commissioner Anthony Rivera
Commissioner Kate H. Stacy

THROUGH: Dennis J. Herrera, General Manager DJH

FROM: Steven R. Ritchie, Assistant General Manager, Water Steven R. Ritchie

RE: Revised Water Supply Assessment for the 3251 20th Avenue (Stonestown) Project

---

Summary

Introduction

The California Water Code (Sections 10910 through 10915) requires urban water suppliers like the San Francisco Public Utilities Commission (SFPUC) to furnish a Water Supply Assessment (WSA) to the city or county that has jurisdiction to approve the environmental documentation for certain qualifying projects (as defined in Water Code Section 10912(a)) subject to the California Environmental Quality Act (CEQA). The WSA process typically relies on information contained in a water supplier's Urban Water Management Plan (UWMP) and involves answering specific questions related to the estimated water demand of the proposed project. This memo serves as the WSA for the proposed 3251 20th Avenue (Stonestown) Project (proposed project), for use in the preparation of an environmental impact report by the San Francisco Planning Department (case no. 2021-012028ENV, San Francisco Planning Department).

This WSA is a revision to and supersedes the WSA that was previously prepared for the same proposed project dated September 29, 2022 and approved on October 24, 2022 (Resolution No. 22-0186). This WSA was revised to account for (1) revisions to the proposed project variant resulting in additional residential units, less non-retail sales and service use, and no hotel use compared to the original variant; and (2) recent changes to San Francisco retail water demand projections reflecting the adopted Housing Element 2022 Update described in the next section.

1.1.1 2020 Urban Water Management Plan and 2023 Interim Water Demand Projections

The Commission, by Resolution No. 21-0100, adopted the SFPUC's current 2020 UWMP. The water demand projections in the UWMP incorporated housing unit growth projections from the Housing Element 2022 Update objective and employment growth projections from the 2017 Land Use Allocation (LUA 2017); San Francisco Planning Department provided both projections. Since the SFPUC's adoption of the 2020 UWMP in June 2021, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR) in November 2022. The Housing Element EIR, which supported the City's adoption of the Housing Element in January

London N. Breed
Mayor

Newsha K. Ajami
President

Sophie Maxwell
Vice President

Tim Paulson
Commissioner

Anthony Rivera
Commissioner

Kate H. Stacy
Commissioner

Dennis J. Herrera
General Manager

2023, assumed slightly higher housing unit projections than those used in the 2020 UWMP, but was still in line with the objective to produce an average of 5,000 housing units per year. Nonetheless, as a result of the slightly higher housing unit projections associated with the Housing Element EIR, the SFPUC determined that its 2020 UWMP no longer accounted for all projected retail water demands.

The SFPUC will not be updating its UWMP until 2025. Therefore, during this interim period, the SFPUC has prepared the 2023 Interim Water Demand Projections (Attachment A) to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. The San Francisco Planning Department provided the updated housing unit projections for SFPUC to update its water demand projections. The water demand projections are presented in five-year increments through 2045, meeting Water Code requirements.

Growth associated with the proposed project was encompassed within the growth projections used in the 2020 UWMP, and therefore encompassed within the updated growth projections used in the 2023 Interim Water Demand Projections. Consequently, water demand associated with the proposed project was encompassed within the water demand projections in the 2020 UWMP, and therefore encompassed within the 2023 Interim Water Demand Projections. In other words, **the proposed project has already been accounted for in SFPUC's water supply planning**.

The WSA for a qualifying project within the SFPUC's retail service area[1] may use information from the UWMP and, as applicable, the 2023 Interim Water Demand Projections. Therefore, ***the 2020 UWMP and 2023 Interim Water Demand Projections are incorporated by reference throughout this WSA, as shown in bold, italicized text.*** The 2020 UWMP and 2023 Interim Water Demand Projections may be accessed at www.sfpuc.org/uwmp.

As described in detail in ***Section 7.3.1*** of the UWMP, in December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment). The City, along with multiple other water agencies, filed suit in early 2019 challenging the validity of the Bay-Delta Plan Amendment. That lawsuit, which is consolidated with other legal challenges, is currently pending in Sacramento Superior Court. In January 2021, the SWRCB moved to implement the Bay-Delta Plan Amendment on the Tuolumne River by issuing a water quality certification under Section 401 of the Clean Water Act in the Federal Energy Regulatory Commission (FERC) licensing proceedings for the hydropower projects associated with the New Don Pedro and La Grange dams. The City and other water users on the Tuolumne River have filed pending legal and administrative challenges to these SWRCB actions. FERC has not yet reissued a license for the New Don Pedro Hydropower Project, and the legal challenges to the water quality certification are pending and remain unresolved. Alongside the water quality certification, on August 8, 2022, the SWRCB issued a CEQA Notice of Preparation for an alternative means of implementing the Bay-Delta Plan Amendment.

Recognizing the obstacles to implementing the Bay-Delta Plan Amendment, the SWRCB, by Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment, directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such

[1] SFPUC's "retail service area" refers to water customers inside the City and County of San Francisco (City), as well as select areas outside of the City.

agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB (Proposed Voluntary Agreement). Since 2019, SFPUC has participated in negotiations with the State and other stakeholders regarding the Proposed Voluntary Agreement. On November 9, 2022, SFPUC signed a non-binding Memorandum of Understanding with various representatives of the State environmental and resource agencies, outlining conceptual deal points for a Tuolumne River Voluntary Agreement. As of the date of the issuance of this Water Supply Assessment, those negotiations remain ongoing.

Implementation of the Bay-Delta Plan Amendment is uncertain given the ongoing negotiations, litigation, and regulatory proceedings; these are further described in ***Section 7.3.1*** of the UWMP. Given the current uncertainty regarding the extent and timing of the implementation of the Bay-Delta Plan Amendment, this WSA analyzes water supply and demand through 2045 under three scenarios: (1) No implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement (Scenario 1), (2) Implementation of the Proposed Voluntary Agreement (Scenario 2), and (3) Implementation of the Bay-Delta Plan Amendment (Scenario 3).

1.1.2 Basis for Requiring a WSA for the Proposed Project

Except for the WSA approved on October 24, 2022 (Resolution No. 22-0186), which is superseded by this revised WSA, the proposed project has not been the subject of a previous WSA, nor has it been part of a larger project for which a WSA was completed.

The proposed project qualifies for preparation of a WSA under Water Code Section 10912(a) because it is a mixed-use residential development that includes more than 500 dwelling units. The proposed project is characterized further in Section 1.2.

1.2 Proposed Project Description

The proposed project is located on an approximately 41-acre site in the Lakeshore area in southwest San Francisco. The project sponsor (Brookfield Properties Development) proposes to redevelop the approximately 27 acres surrounding the existing on-site Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use residential and retail community. Under the proposed project, the existing 760,000-square-foot (sf) Stonestown Galleria shopping mall would remain, with changes to the façade, entrances, and exits. The existing parking garage in the southwest corner of the project site, the vacant theater at the northwest corner of the site, and the CitySports and commercial building at the northeast corner of the site would be demolished and redeveloped as part of the proposed project.

Overall, the proposed project would include up to approximately 2,930 residential units; up to 160,000 sf of new retail sales and service use space; up to 200,000 sf of new non-retail sales and service use; up to approximately 100,000 sf of hotel use; approximately 53,000 sf of institutional uses to include an approximately 15,000-square-foot childcare facility and space for community use; approximately 4,250 parking spaces; 6 acres of open space; and infrastructure improvements.

One variant to the proposed project is also under consideration, which would include the development of the 0.8-acre parcel that is currently occupied by Authentic Church at 3355 19th Avenue, adjacent to the project site between Eucalyptus and Winston drives. Under the variant, the redevelopment of the 27 acres surrounding the Stonestown Galleria would be the same as the proposed project; however, the

additional 0.8-acre Authentic Church parcel would be developed with an additional 561 residential units (3,491 residential units total); 104,000 sf less non-retail sales and service use (up to 96,000 sf total); additional 611 parking spaces (4,861 spaces total); and no hotel use.

For the purpose of the WSA, only the variant is assessed for water supply as it would result in a higher water demand estimate and would encompass the proposed project demands. Refer to Attachment B for additional details on both the proposed project and variant. All subsequent references to the "proposed project" in this memo refer to the variant unless otherwise noted.

Project construction would occur in six phases over the course of approximately eight years, from 2024 to approximately 2032. The first operational year is assumed to be 2027. By 2030, construction of Phases 1 through 3 is assumed to be completed, consisting of up to approximately 1,893 residential units (1,867,500 sf), up to 66,000 sf of new retail sales and service use space; up to 12,000 sf of new non-retail sales and service use; and up to approximately 21,000 sf of institutional uses.

For additional details on the proposed project, see Attachment B.

2.0 Water Supply

This section reviews San Francisco's existing and planned water supplies.

2.1 Regional Water System

See ***Section 3.1 of the UWMP*** for descriptions of the San Francisco Regional Water System (RWS), ***Section 6.1 of the UWMP*** for water rights held by City and County of San Francisco, and ***Section 7.1 of the UWMP*** for the SFPUC Water System Improvement Program (WSIP).

2.2 Existing Retail Supplies

Retail water supplies from the RWS are described in ***Section 6.1 of the UWMP***.

Local groundwater supplies, including the Westside Groundwater Basin, are described in ***Section 6.2.1 of the UWMP***.

Local recycled water supplies, including the Harding Park Recycled Water Project and Pacifica Recycled Water Project, are described in ***Section 6.2.1 of the UWMP***.

2.3 Planned Retail Water Supply Sources

The San Francisco Groundwater Supply Project is described in ***Section 6.2.1.1 of the UWMP***.

The Westside and Treasure Island Recycled Water Projects are described in ***Section 6.2.2 of the UWMP***.

2.4 Summary of Current and Future Retail Water Supplies

A breakdown of water supply sources for meeting SFPUC retail water demand through 2045 in normal years is provided in ***Section 6.2.5 of the UWMP***. For dry years, see the next section.

2.5 Dry-Year Water Supplies

A description of dry-year supplies developed under WSIP is provided in ***Section 7.2 of the UWMP***.

2.6 Additional Water Supplies

The SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would increase overall water supply resilience through the Alternate Water Supply Program. A description of the Alternative Water Supply Program and the supplies being studied is provided in ***Section 7.4 of the UWMP***.

3.0 Water Demand

This section reviews the projected retail water demands and the demand associated with the proposed project.

3.1 Projected Retail Water Demand

The projected retail water demand through 2045 is described in ***Section 4.1 of the UWMP and updated in the 2023 Interim Water Demand Projections (Attachment A)***. This section of the UWMP also describes the methodology used for demand projections and the factors considered. Updates specific to the to the change in housing unit projections are described in the 2023 Interim Water Demand Projections.

3.2 Proposed Project Water Demand

The project sponsor's consultants provided a memo describing the methods and assumptions used to estimate the water demand of the proposed project, along with the resulting demand (Attachment B).

Because the proposed project must comply with San Francisco's Non-potable Water Ordinance (Article 12C of the San Francisco Health Code), estimates for both potable and non-potable demands were submitted as part of the WSA request. The Non-potable Water Ordinance requires new development projects with 100,000 square feet or more of gross floor area, that apply for a site permit after January 1, 2022, to install and operate an onsite non-potable water system. Commercial buildings must meet their toilet and urinal flushing and drain trap priming demands through the collection, treatment, and use of available blackwater and condensate. Residential and mixed-use buildings must meet their toilet and urinal flushing, irrigation, clothes washing, and drain trap priming demands through the collection, treatment, and use of available graywater and condensate. While not required, residential and mixed-use projects may use treated blackwater if desired. As indicated in the water demand memo provided on behalf of the project sponsor in Attachment B, the proposed project would exceed the requirements of the Non-potable Water Ordinance by also using non-potable water to meet heating and cooling demands, in additional demands for toilet and urinal flushing, irrigation, clothes washing, and drain trap priming.

Both potable and non-potable demands for the project were estimated using the SFPUC's Non-potable Water Calculator and supplemented with additional calculations for heating and cooling demands and alternate estimates of persons per household. The SFPUC reviewed the memo to ensure that the methodology is appropriate for the types of proposed water uses, the assumptions are valid and thoroughly documented along with verifiable data sources, and a professional standard of care was used. The SFPUC concluded that the demand estimates provided on behalf of the project

sponsor are reasonable. Water demand associated with the proposed project over the 20-year planning horizon is shown in the following Table 1.

The non-potable demand estimates in Table 1 are based on building uses anticipated at the time the WSA was requested, i.e., during the planning and environmental review stage of the proposed project. It is understood that these estimates will likely change as the proposed project's design progresses, and information submitted for the WSA request is not part of the proposed project's compliance with the Non-potable Water Ordinance. City review and approval of a proposed onsite water system must be performed separately through the Non-potable Water Program. However, the intent of providing a breakdown of potable and non-potable demand estimates in this WSA is to demonstrate that the proposed project will incorporate water reuse per City requirements and the proposed project's sustainability goals, if any. As noted earlier, the total demand of the proposed project, regardless of non-potable use, is already encompassed in the 2023 Interim Water Demand Projections. Furthermore, total demand represents the most conservative estimate and accounts for back-up potable supplies that must be provided by the SFPUC in the event that non-potable supplies serving the proposed project are unavailable.

Table 1: Water Demand Based on Project Phasing (mgd)

	2025	2030	2035	2040	2045
Potable Demand	--	0.103	0.191	0.191	0.191
Non-potable Demand	--	0.075	0.118	0.118	0.118
Total Demand	--	0.178	0.309	0.309	0.309
Potential Potable Water Savings as Percentage of Total Demand	--	40%	38%	38%	38%

mgd = million gallons per day

Notes:
Total demand conservatively assumes that all demands are met with potable supplies.

The San Francisco Planning Department has determined that the proposed project is encompassed within the housing projections described in the Housing Element 2022 Update and the employment projections from LUA 2017, as indicated in the letter from the Planning Department to the SFPUC (Attachment A). Therefore, the demand of the proposed project is also encompassed within the San Francisco retail water demands that are presented in the ***2023 Interim Water Demand Projections***, which considers retail water demand based on the housing and employment projections provided by the Planning Department. The following Table 2 shows the demand of the proposed project relative to total retail demand.

Table 2: Proposed Project Demand Relative to Total Retail Demand

	2025	2030	2035	2040	2045
Total Retail Demand (mgd)[1]	71.3	73.0	75.0	77.9	81.1
Total Demand of Proposed Project (mgd)	--	0.178	0.309	0.309	0.309
Total Demand of Proposed Project as Percentage of Total Retail Demand[2]	--	0.24%	0.41%	0.40%	0.38%

Notes:
1. Retail water demands per ***Table 3 of the 2023 Interim Water Demand Projections***.
2. The proposed project is accounted for in the housing and employment projections provided by the Planning Department; therefore, total demands associated with the proposed project are accounted for in the 2023 Interim Water Demand Projections.

4.0 Conclusion

4.1 Comparison of Projected Supply and Demand

For all scenarios presented here, local supplies (i.e., supplies not from the RWS) correspond to those in ***Table 6-5 of the UWMP***. Procedures for determining RWS supply availability per the SFPUC's Water Shortage Allocation Plan (WSAP) are described in ***Section 8.2.4 of the UWMP***.

As explained previously in Section 3.2, water demands associated with the proposed project are already captured in the retail demand projections presented in the UWMP. The proposed project is expected to represent up to 0.41% of the total retail water demand. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections*** and reflect both passive and active conservation, onsite water reuse savings, and water loss.

4.1.1 Scenario 1: No Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement

Table 3 below is adapted from ***Table 5 of the 2023 Interim Water Demand Projections*** and compares the SFPUC's retail water supplies and demands through 2045 during normal year, single dry-, and multiple dry-year periods under Scenario 1.

As shown in Table 3, under Scenario 1 without implementation of the Bay-Delta Plan Amendment, existing and planned supplies would meet all projected RWS demands in all years. Even though system-wide shortages of RWS supplies would occur in the 4th and 5th years of a multi-year drought at 2045 projected levels of demand, retail customers would reduce their demands by 5% as required by the Water Supply Agreement between SFPUC and its Wholesale Customers. To achieve a small reduction such as this, the SFPUC may prohibit certain discretionary outdoor water uses and/or call for voluntary water use reduction by its retail customers pursuant to its Water Shortage Contingency Plan (***Appendix K of the UWMP***). The required level of water use reduction is well below the SFPUC's RWS level of service (LOS) goal of limiting water use reduction to no more than 20% on a system-wide basis (i.e., an average throughout the RWS) in drought years. In 2008, by Resolution No. 08-0200, the Commission adopted this goal.

4.1.2 Scenario 2: Implementation of the Proposed Voluntary Agreement

A Voluntary Agreement has yet to be accepted by SWRCB as an alternative to the Bay-Delta Plan Amendment and thus the shortages that would occur with its implementation are not known with certainty. However, given that the objectives of the Proposed Voluntary Agreement are to provide fishery improvements while protecting water supply through flow and non-flow measures, the RWS supply shortfalls under the Proposed Voluntary Agreement would be less than those under the Bay-Delta Plan Amendment, and therefore would require water use reductions of a lesser degree than that which would occur under Scenario 3. The degree of water use reduction would also more closely align with the SFPUC's RWS LOS goal of limiting water use reduction to no more than 20% on a system-wide basis in drought years.

4.1.3 Scenario 3: Implementation of the Bay-Delta Plan Amendment

Table 4 below provides projected supplies and demands under Scenario 3. The RWS is projected to experience significant shortfalls in single dry and multiple dry years through 2045, regardless of whether the proposed project is constructed. These significant shortfalls are a result of implementation of the Bay-Delta Plan Amendment and not attributed to the incremental retail demand associated with the proposed project. Shortfalls would range from about 11 to 29 mgd, corresponding to water use reduction in the retail service area ranging from 15-36%, over the next 20 years.

Table 3: Projected Supply and Demand Comparison Under Scenario 1 (No Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years[2]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand[3]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Total Retail Supply[4]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2030	Total Retail Demand[3]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Total Retail Supply[4]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2035	Total Retail Demand[3]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Total Retail Supply[4]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2040	Total Retail Demand[3]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Total Retail Supply[4]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2045	Total Retail Demand[3, 5]	81.1	81.1	81.1	81.1	81.1	77.0	77.0
	Total Retail Supply[4]	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Shortfall	0.0	0.0	0.0	0.0	0.0	4.1	4.1
	Shortfall as % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%

Notes:
1. During all single dry years, no RWS system-wide shortages are in effect.
2. During multiple dry years, no RWS system-wide shortages are in effect until years 4 and 5 at 2045 levels of demand. During those years, a 10% system-wide shortage is in effect.
3. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections***.
4. Local supplies (i.e., supplies not from the RWS, including groundwater and recycled water) correspond to those in ***Table 6-5 of the UWMP***. Local supplies are assumed to be used before RWS supplies to meet retail demand.
5. As amended in 2018, the WSAP Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the RWS are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. This provision is in effect in years 4 and 5 of a multi-dry year sequence at 2045 levels of demand.

Table 4: Projected Supply and Demand Comparison Under Scenario 3 (Implementation of the Bay-Delta Plan Amendment) (mgd)

		Normal Year	Single Dry Year[1]	Multiple Dry Years[2]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand[3]	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Total Retail Supply[4]	70.7	59.5	59.5	51.5	51.5	51.5	51.5
	Shortfall	0.0	-11.8	-11.8	-19.8	-19.8	-19.8	-19.8
	Shortfall as % of Demand	0.0%	-16.5%	-16.5%	-27.8%	-27.8%	-27.8%	-27.8%
2030	Total Retail Demand[3]	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Total Retail Supply[4]	72.4	61.4	61.4	53.4	53.4	53.4	53.4
	Shortfall	0.0	-11.6	-11.6	-19.6	-19.6	-19.6	-19.6
	Shortfall as % of Demand	0.0%	-15.9%	-15.9%	-26.8%	-26.8%	-26.8%	-26.8%
2035	Total Retail Demand[3]	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Total Retail Supply[4]	74.5	63.8	63.8	55.5	55.5	55.5	51.4
	Shortfall	0.0	-11.2	-11.2	-19.5	-19.5	-19.5	-23.6
	Shortfall as % of Demand	0.0%	-14.9%	-14.9%	-26.0%	-26.0%	-26.0%	-31.5%
2040	Total Retail Demand[3]	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Total Retail Supply[4]	77.4	66.4	66.4	57.9	57.9	52.0	52.0
	Shortfall	0.0	-11.5	-11.5	-20.0	-20.0	-25.9	-25.9
	Shortfall as % of Demand	0.0%	-14.8%	-14.8%	-25.7%	-25.7%	-33.2%	-33.2%
2045	Total Retail Demand[3]	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Total Retail Supply[4]	80.6	60.1	60.1	60.1	60.1	52.1	52.1
	Shortfall	0.0	-21.0	-21.0	-21.0	-21.0	-29.0	-29.0
	Shortfall as % of Demand	0.0%	-25.9%	-25.9%	-25.9%	-25.9%	-35.8%	-35.8%

Notes:

1. During a single dry year, system-wide shortages of 30 – 40% are in effect (see ***Table 8-3 of the 2020 UWMP***). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan (WSAP).
2. During multiple dry years, system-wide shortages of 30 – 55% are in effect (see ***Table 8-3 of the 2020 UWMP***). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the WSAP.
3. Total retail demands correspond to those in ***Table 3 of the 2023 Interim Water Demand Projections***.
4. Local supplies (i.e., supplies not from the RWS, including groundwater and recycled water) correspond to those in ***Table 6-5 of the UWMP***. Local supplies are assumed to be used before RWS supplies to meet retail demand.

4.2 Potential for Shortages in SFPUC Service Area

The inflow to SFPUC reservoirs can vary greatly from year to year, based on the hydrology of the region. When inflows are low during dry years, the potential exists for water supply shortages in the SFPUC service area. The occurrence of shortages depends on the magnitude and duration of dry conditions, and also on the system demand for water supply.

- In an evaluation of historical hydrology (1920 – 2017) combined with 2020 system demand, the potential for water supply shortages due to dry hydrology is low.
- When projected system demand in 2045 (an increase over 2020 demand) is evaluated along with historical hydrology, the potential for shortage increases but remains relatively low.
- When large increases in instream flow requirements (such as those associated with the Bay-Delta Plan update) are included in either of the above evaluations, the potential for water shortages in the SFPUC system increases markedly. The instream flow requirements are analogous to an increase in demand in this evaluation.

4.3 Water Use Reduction Implications to the Proposed Project

While the levels of water use reduction described above apply to the retail service area as a whole (i.e., 15-36% under Scenario 3), the SFPUC may allocate different levels of water use reduction to individual retail customers based on customer type (e.g., dedicated irrigation, single family residential, multi-family residential, commercial) to achieve the required level of retail system-wide demand reduction. Allocation methods and processes that have been considered in the past and may be used in future droughts are described in the SFPUC's 2020 Water Shortage Contingency Plan (***Appendix K of the UWMP***). For both residential and commercial customers, the SFPUC may implement varying levels of water use reductions based on the baseline level of water use, e.g., require less reduction from customers that use less water to begin with. Under the 2020 Water Shortage Contingency Plan, the allocation method or combination of methods that would be applied during water shortages caused by drought would be subject to the discretion of the General Manager.

In accordance with the Water Shortage Contingency Plan, the level of water use reduction that would be imposed on the proposed project would be determined at the time of a drought or other water shortage and cannot be established with certainty prior to the shortage event. However, newly constructed buildings, such as the proposed project, have water-efficient fixtures and non-potable water systems that comply with the latest regulations and should be better prepared than older buildings to meet the required reductions.

4.4 Findings

Regarding the availability of water supplies to serve the proposed project beginning in 2027, the SFPUC finds, based on the entire record before it, as follows:

- During normal years, the SFPUC's total projected water supplies will meet the projected demands of its retail customers, including those of the proposed project, existing customers, and foreseeable future development under Scenario 1, Scenario 2, and Scenario 3.
- During single dry years and multiple dry years under Scenario 1—No implementation of the Bay-Delta Plan Amendment or a Voluntary Agreement—the SFPUC can meet the projected demands of its retail customers, including those of the proposed project, existing customers, and foreseeable future development without the need for water use reduction beyond the LOS goal of 20% system-wide water use reduction.

- During single dry years and multiple dry years under Scenario 2—Implementation of a Voluntary Agreement—the SFPUC would still face a shortfall in single dry and multiple dry years, thus requiring water use reduction, but to a lesser degree and in closer alignment to the LOS goal of no more than 20% system-wide water use reduction compared to that which would occur under Scenario 3. Because negotiations in furtherance of the November 9, 2022 Voluntary Agreement Memorandum of Understanding continue in earnest, and litigation challenging the adoption of the Bay-Delta Plan Amendment remains pending, SFPUC further finds that the supply and demand that would result under Scenario 2 are more likely to occur than those projected in Scenario 3.
- During single dry years and multiple dry years under Scenario 3—Implementation of the Bay-Delta Plan Amendment—the SFPUC cannot reliably meet the projected demands of its retail customers, including the proposed project, existing customers, and foreseeable future development, without water use reduction at a level greater than that required to achieve the LOS goal of a maximum of 20% system-wide average water use reduction. The SFPUC estimates it would impose up to 36% water use reductions across the retail service area.
- The SFPUC's 2020 Water Shortage Contingency Plan describes allocation methods and processes that may be used in future droughts. For both residential and commercial customers, the SFPUC may implement varying levels of water use reductions based on the baseline level of water use, e.g., require less reduction from customers that use less water to begin with. For the proposed project specifically, these policies may result in lower levels of mandatory water use reduction as a result of the installation of water-efficient plumbing fixtures and non-potable water systems associated with new construction.
- Under Scenario 3, the relatively small volume of water demand generated by the proposed project itself would not exacerbate the projected shortfalls resulting from implementation of the Bay-Delta Plan Amendment. Regardless of whether the proposed project is constructed, with implementation of the Bay-Delta Plan Amendment, the SFPUC's existing and planned water supplies will not meet the water demands of its retail service area in dry years without significant demand reductions.

Approval of this WSA by the Commission is not equivalent to approval of the development project for which the WSA is prepared. A WSA is an informational document required to be prepared for use in the City's environmental review of a project under CEQA. It assesses the adequacy of water supplies to serve the proposed project and cumulative demand.

Furthermore, this WSA is not a "will serve" letter and does not verify the adequacy of existing distribution system capacity to serve the proposed project. A "will serve" letter and/or hydraulic analysis must be requested separately from the SFPUC City Distribution Division to verify hydraulic capacity.

While this WSA contains information provided by or on behalf of the project sponsor regarding the proposed project's plans for onsite water reuse and demand estimates using the SFPUC's Non-potable Water Calculator, any information submitted to the SFPUC for preparation of this WSA does not fulfill the requirements of the Non-potable Water Ordinance. City review and approval of a proposed onsite water system must be performed separately through the Non-potable Water Program.

If there are any questions or concerns, please contact Steve Ritchie at (415) 934-5736 or SRitchie@sfwater.org.

Attachments: Attachment A, 2023 Interim Water Demand Projections
Attachment B, 3251 20th Avenue (Stonestown) Project Demand Memo

Attachment A –

2023 Interim Water Demand Projections

2023 Interim Water Demand Projections

for the City and County of San Francisco

Prepared by:

San Francisco Public Utilities Commission

September 2023

San Francisco Water Power Sewer

Services of the San Francisco Public Utilities Commission

Table of Contents

1.0 Introduction 1

1.1 Purpose of Water Supply Assessments 1

1.2 Purpose of this Document 1

1.3 What this Document Does and Does Not Address 1

2.0 Housing Unit Projections 2

3.0 Retail Water Demands 2

4.0 Water Supply and Demand Comparisons 5

4.1 With Bay-Delta Plan Amendment 5

4.2 Without Bay-Delta Plan Amendment 5

List of Tables

Table 1: Housing Unit Projections 2

Table 2: Multi-Family Residential Water Demands (million gallons per day [mgd]) 3

Table 3: Retail Water Demands (mgd) 4

Table 4: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios With Bay-Delta Plan Amendment (mgd) 6

Table 5: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios Without Bay-Delta Plan Amendment (mgd) 8

List of Appendices

Appendix A: San Francisco Planning Memorandum

Appendix B: Woodard & Curran Memorandum

1.0 Introduction

1.1 Purpose of Water Supply Assessments

The California Water Code (Sections 10910 through 10915) requires urban water suppliers to evaluate water supply availability to inform environmental review for qualifying projects ("water demand projects") defined in Water Code Section 10912(a). Water Code Section 10910 requires the preparation of a "water supply assessment" (WSA) for water demand projects that include a determination of whether available water supplies are sufficient to serve the demand generated by the project, as well as reasonably foreseeable cumulative demand over a 20 year period, including years of normal precipitation, single dry, and multiple dry years. If the water supplies needed by a water demand project were accounted for in the water supplier's most recently adopted Urban Water Management Plan (UWMP), under Water Code Section 10910(c)(2), the water supplier may incorporate the requested information from the UWMP in preparing a WSA for a water demand project.

1.2 Purpose of this Document

The SFPUC most recently adopted the 2020 UWMP update for the City and County of San Francisco in June 2021. As described in the 2020 UWMP, Section 4.1.2, Projected Retail Demands, the 2020 UWMP relied on the San Francisco Planning Department's (SF Planning) housing projections based on the Housing Element 2022 Update, which was still under development when the 2020 UWMP was adopted. One of the objectives of the Housing Element 2022 Update was to produce an average of 5,000 housing units per year with adjustments for certain large development plans. Since the SFPUC's adoption of the 2020 UWMP in June 2021, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR) in November 2022. The Housing Element EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher housing unit projections than those used in the 2020 UWMP, but was still in line with the objective to produce an average of 5,000 housing units per year. Nonetheless, as a result of the slightly higher housing unit projections associated with the Housing Element EIR, the SFPUC determined that its 2020 UWMP no longer accounted for all projected retail water demands.

The SFPUC will not be updating its UWMP until 2025. Therefore, during this interim period, the SFPUC has prepared the 2023 Interim Water Demand Projections herein to document the SFPUC's projected retail water supplies when compared to projected retail water demands associated with the adopted Housing Element 2022 Update. This document also adjusts the retail water supply projections to meet the updated retail water demands.

The information in this document, in concert with the background information provided in the 2020 UWMP that are not superseded by the 2023 Interim Water Demand Projections herein, can be used in the development of WSAs for pending water demand projects.

1.3 What this Document Does and Does Not Address

This document only updates the following items from the 2020 UWMP as they are directly related to the change in housing unit projections:

- Retail water demand projections, specifically demands of the in-City multi-family residential sector, through 2045
- Retail water supply and demand comparisons (i.e., surpluses and shortfalls) during normal, single dry, and multiply dry years through 2045

This document does not update the following items from the 2020 UWMP as they are not directly related to the change in housing unit projections:

- Population projections associated with the Housing Element 2022 Update
- Employment projections associated with the Housing Element 2022 Update
- Retail water demands for the single family residential and non-residential sectors
- Retail water loss
- Retail water savings associated with Conservation and Onsite Water Reuse programs
- Suburban retail water demands
- Wholesale water demands
- Status of water supply projects

2.0 Housing Unit Projections

SF Planning provided updated housing unit projections in alignment with the Housing Element EIR in a memorandum to the SFPUC dated August 18, 2023 (Appendix A). Per SF Planning's recommendation, it is assumed that the number of single-family detached houses will not increase from existing stock and that all future net housing growth will take the form of multi-family structures.

Table 1 compares the updated housing unit projections to those used in the 2020 UWMP in 5-year increments from 2025 to 2045. SFPUC used the updated housing unit projections as inputs to the same water demand forecasting model (i.e., econometric model) that was developed for the 2020 UWMP, described in the next section.

Table 1: Housing Unit Projections

	2025	2030	2035	2040	2045
Used in 2020 UWMP	425,118	450,923	476,728	502,533	528,338
2023 Update	432,667	458,333	483,600	509,000	534,000
Net Change	**7,549**	**7,410**	**6,872**	**6,467**	**5,662**

3.0 Retail Water Demands

As described in the 2020 UWMP, Section 3.2, Retail Service Area, retail customers include the residents, businesses, and industries located within City limits, referred to as the in-City retail service area. Retail service is also provided to a patchwork of customers located outside the City, such as the Town of Sunol, San Francisco International Airport, Lawrence Livermore National Laboratory, and Castlewood County Service Area. These areas are not contiguous and are collectively referred to as the suburban retail service area.

The SFPUC uses econometric models to project the demands for its in-City single family residential, multi-family residential, and commercial/industrial sectors. Other in-City non-residential demands (i.e., irrigation and municipal) and suburban retail demands are estimated based on historical consumption and supplement the demands projected by the econometric models. Water loss is forecasted separately. For

more information about how retail water demand projections were developed for the 2020 UWMP, refer to Section 4.1.2, Projected Retail Demands, of the 2020 UWMP.

The SFPUC, with the support of its consultant team that developed the econometric models used for the 2020 UWMP, re-ran the model specific to the multi-family residential sector using the updated housing unit projections described in the previous section. No other model inputs were changed from those that were used for the 2020 UWMP. The resulting model outputs are detailed in Appendix B and summarized in Table 2 below. Multi-family residential demands increased by about 0.5 to 0.6 mgd, or 1.5 to 2.5%, compared to those in the 2020 UWMP.

Table 2: Multi-Family Residential Water Demands (million gallons per day [mgd])

	2025	2030	2035	2040	2045
Used in 2020 UWMP	23.7	25.6	27.9	30.3	33.0
2023 Update	24.3	26.2	28.4	30.9	33.5
Difference	**0.6**	**0.6**	**0.6**	**0.5**	**0.5**
% Difference from 2020 UWMP	**2.5%**	**2.3%**	**2.0%**	**1.8%**	**1.5%**

Total retail water demand projections are shown in Table 3, which supersedes Table 4-1 of the 2020 UWMP. These projections comprise the updated multi-family residential demands from Table 2 and the unchanged demands for the remaining sectors. The demands of the remaining sectors are not updated as they are not directly related to the change in housing unit projections. Total retail demands increased by about 0.6 to 0.8% compared to those in the 2020 UWMP.

Table 3: Retail Water Demands (mgd)

Retail Sector or Use Type	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
In-City Retail						
Single-Family Residential	14.5	13.7	13.5	13.4	13.5	13.5
Multi-Family Residential	22.9	24.3	26.2	28.4	30.9	33.5
Non-residential	20.9	22.9	22.9	22.8	23.1	23.6
Water Loss[c]	7.2	6.0	6.0	6.0	6.0	6.0
Subtotal In-City Retail Demand	65.3	66.9	68.6	70.6	73.5	76.7
Suburban Retail						
Single-Family Residential[d]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential	3.1	4.0	4.0	4.0	4.0	4.0
Groveland CSD[e]	0.3	0.3	0.3	0.3	0.3	0.3
Water Loss[c]	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Suburban Retail Demand	3.5	4.4	4.4	4.4	4.4	4.4
Total Retail Demand	**68.8**	**71.3**	**73.0**	**75.0**	**77.9**	**81.1**
% Difference from 2020 UWMP	**N/A**	**0.8%**	**0.8%**	**0.8%**	**0.7%**	**0.6%**

a Actual consumption data are obtained from customer billing data.

b Single family residential and multi-family residential demand projections are from an econometric model developed for the SFPUC. Non-residential demands include commercial/industrial demands, which are also from an econometric model, as well as municipal and irrigation demands, which are assumed to remain constant at the previous five-year average level.

c Water losses include both apparent and real losses. Suburban retail water losses are considered to be negligible. Actual water loss in 2020 is based on SFPUC's July 2019 – June 2020 water loss audit.

d Suburban retail residential demands are for single family only as no multi-family residential buildings are served.

e Groveland Community Services District (CSD) is accounted for as a retail customer for the purpose of this table and subsequent retail supply and demand comparisons in the 2020 UWMP. Demand projections were provided by Groveland CSD based on its population projections and assumed per capita water use of 107 GPCD (projections are subject to change as part of its UWMP process). In the corresponding standardized tables in UWMP 2020 Appendix B, Groveland CSD is not reported as retail, but rather wholesale.

4.0 Water Supply and Demand Comparisons

This section compares the SFPUC's retail water supplies (unchanged from the 2020 UWMP) and demands (updated in Table 3) through 2045 during normal, single dry, and multiple dry years. The supply and demand comparisons are presented for two Regional Water System (RWS) supply scenarios: (1) with full implementation of the Bay-Delta Plan Amendment and (2) without implementation of the Bay-Delta Plan Amendment. For more information about these scenarios and how their corresponding supplies were estimated, refer to Section 8, Water Supply Reliability Assessment, of the 2020 UWMP[1].

4.1 With Bay-Delta Plan Amendment

The instream flow requirements of the Bay-Delta Plan Amendment would impact the RWS supplies in single dry years and multiple dry years. The comparison of retail demands and supplies under the Bay-Delta Plan Amendment is presented in Table 4, which supersedes Table 8-4 of the 2020 UWMP and demonstrates the following:

- **Normal Years:** During normal hydrologic years, the SFPUC will have adequate supplies to meet its projected retail water demands. This is unchanged from the 2020 UWMP.
- **Single Dry Year:** During single dry years, there would be an anticipated 30 to 40% shortage of RWS supplies. When the supplies available to retail customers (RWS plus local supplies) are compared to the projected retail demands, a retail supply shortfall of 15% to 26% (11 to 21 mgd) is expected in single dry year conditions. These shortfalls are less than 1%, or 1 mgd, higher than estimated in the 2020 UWMP.
- **Multiple Dry Years:** If a multiple dry year event occurs, there would be anticipated shortages in RWS supplies of 30 to 49%, depending on demand levels. When the supplies available to retail customers (RWS plus local supplies) are compared to the projected retail demands, there is an anticipated shortfall of almost 36%, or 29 mgd, by the fifth dry year at 2045 projected levels of demand. This shortfall is less than 1%, or 1 mgd, higher than estimated in the 2020 UWMP.

4.2 Without Bay-Delta Plan Amendment

Without implementation of the Bay-Delta Plan Amendment, existing and planned supplies would meet all projected RWS demands in all years except deep into a multi-year drought at 2045 projected levels of demand. The comparison of retail demands and supplies is presented in Table 5, which supersedes Table 8-6 of the 2020 UWMP and demonstrates the following:

- **Normal Years:** During normal hydrologic years, the SFPUC will have adequate supplies to meet its projected retail water demands. This is unchanged from the 2020 UWMP.
- **Single Dry Year:** During single dry years, there are no anticipated shortages of RWS supplies. This is unchanged from the 2020 UWMP.
- **Multiple Dry Years:** In the multiple dry year scenario, the SFPUC would only experience system-wide shortages in RWS supplies of 10% during years 4 and 5 of an extended drought at 2045

[1] Section 7.3.1, page 7-5, of the 2020 UWMP states, "Although the [State Water Resources Control Board] has stated it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, given the current level of uncertainty, it is assumed for the purposes of this draft UWMP that the Bay-Delta Plan Amendment will be fully implemented starting in 2023." To date, the Bay-Delta Plan Amendment has not been implemented and the SFPUC currently does not have an anticipated date for implementation.

levels of demand. In a 10% shortage, retail customers would reduce their demands by 5% as required by the Water Supply Agreement between SFPUC and its Wholesale Customers. As a result of this demand reduction, there is a projected surplus of 5.3%, or 4.1 mgd, which is 0.1 mgd greater than that estimated in the 2020 UWMP.

Table 4: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios With Bay-Delta Plan Amendment (mgd)

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Baseline Retail Demand[c]	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	70.7	59.5	59.5	51.5	51.5	51.5	51.5
	Retail Groundwater[e]	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*
	Retail Recycled Water[f]	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
	RWS Supply Utilized by Retail[g]	*67.2*	*56.0*	*56.0*	*48.0*	*48.0*	*48.0*	*48.0*
	Difference (Supply Surplus or Shortfall)	0.0	-11.8	-11.8	-19.8	-19.8	-19.8	-19.8
	Difference as Percentage of Demand	0.0%	-16.5%	-16.5%	-27.8%	-27.8%	-27.8%	-27.8%
2030	Total Retail Demand	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Baseline Retail Demand[c]	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	72.4	61.4	61.4	53.4	53.4	53.4	53.4
	Retail Groundwater[e]	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*67.5*	*56.5*	*56.5*	*48.5*	*48.5*	*48.5*	*48.5*
	Difference (Supply Surplus or Shortfall)	0.0	-11.6	-11.6	-19.6	-19.6	-19.6	-19.6
	Difference as Percentage of Demand	0.0%	-15.9%	-15.9%	-26.8%	-26.8%	-26.8%	-26.8%
2035	Total Retail Demand	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Baseline Retail Demand[c]	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	74.5	63.8	63.8	55.5	55.5	55.5	51.4
	Retail Groundwater[e]	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*68.6*	*57.9*	*57.9*	*49.6*	*49.6*	*49.6*	*45.5*
	Difference (Supply Surplus or Shortfall)	0.0	-11.2	-11.2	-19.5	-19.5	-19.5	-23.6
	Difference as Percentage of Demand	0.0%	-14.9%	-14.9%	-26.0%	-26.0%	-26.0%	-31.5%

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2040	Total Retail Demand	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Baseline Retail Demand[c]	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	77.4	66.4	66.4	57.9	57.9	52.0	52.0
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*70.5*	*59.5*	*59.5*	*51.0*	*51.0*	*45.1*	*45.1*
	Difference (Supply Surplus or Shortfall)	0.0	-11.5	-11.5	-20.0	-20.0	-25.9	-25.9
	Difference as Percentage of Demand	0.0%	-14.8%	-14.8%	-25.7%	-25.7%	-33.2%	-33.2%
2045	Total Retail Demand	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Baseline Retail Demand[c]	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	80.6	60.1	60.1	60.1	60.1	52.1	52.1
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*73.7*	*53.2*	*53.2*	*53.2*	*53.2*	*45.2*	*45.2*
	Difference (Supply Surplus or Shortfall)	0.0	-21.0	-21.0	-21.0	-21.0	-29.0	-29.0
	Difference as Percentage of Demand	0.0%	-25.9%	-25.9%	-25.9%	-25.9%	-35.8%	-35.8%

Normal, single dry, and multiple dry year conditions are on a water year basis.

a During a single dry year, system-wide shortages of 30 – 40% are in effect (see Table 8-3 of the 2020 UWMP). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the Water Shortage Allocation Plan (WSAP).

b During multiple dry years, system-wide shortages of 30 – 55% are in effect (see Table 8-3 of the 2020 UWMP). For this analysis, shortages greater than 20% are considered to have the same retail/wholesale allocation as the maximum Stage 4, 16-20% system-wide shortage in the WSAP.

c Total retail demands correspond to those in Table 3 and reflect passive and active conservation, onsite water reuse savings, and water loss. Demands for Groveland Community Services District is included in the table above.

d As amended in 2018, the WSAP Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the Regional Water System (RWS) are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. An N/A on this row means that either this 5% rationing requirement doesn't apply (i.e. no declared water shortage), or retail customers are already rationing greater than 5%.

e Groundwater supplies are assumed to be equivalent to projected demands for the San Francisco Groundwater Supply Project (ramping up to 4 mgd by 2040) and Castlewood County Service Area (0.4 mgd). Groundwater availability would not be affected by dry year conditions.

f Recycled water supplies are assumed to be equivalent to projected demands related to the Westside Recycled Water Project (1.6 mgd by 2021 and 1.8 mgd by 2030), Harding Park and Fleming Golf Courses (0.23 mgd), and Sharp Park Golf Course (up to 0.1 mgd) and Treasure Island (0.2 mgd by 2025 and 0.4 mgd by 2030). Recycled water availability would not be affected by dry year conditions.

g Procedures for RWS allocations and the WSAP are described in Section 8.3 of the 2020 UWMP. Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, in normal years, if groundwater and recycled water supplies are not available, up to 81 mgd of RWS supply could be used.

Table 5: Retail Supply and Demand Comparison for Projected Normal & Dry Year Scenarios Without Bay-Delta Plan Amendment (mgd)

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2025	Total Retail Demand	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Baseline Retail Demand[c]	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*	*71.3*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	71.3	71.3	71.3	71.3	71.3	71.3	71.3
	Retail Groundwater[e]	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*	*1.4*
	Retail Recycled Water[f]	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*	*2.1*
	RWS Supply Utilized by Retail[g]	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*	*67.8*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2030	Total Retail Demand	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Baseline Retail Demand[c]	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*	*73.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	73.0	73.0	73.0	73.0	73.0	73.0	73.0
	Retail Groundwater[e]	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*	*2.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*	*68.1*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2035	Total Retail Demand	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Baseline Retail Demand[c]	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*	*75.0*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	Retail Groundwater[e]	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*	*3.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*	*69.1*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		Normal Year	Single Dry Year[a]	Multiple Dry Years[b]				
				Year 1	Year 2	Year 3	Year 4	Year 5
2040	Total Retail Demand	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Baseline Retail Demand[c]	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*	*77.9*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
	Total Retail Supply	77.9	77.9	77.9	77.9	77.9	77.9	77.9
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*	*71.0*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2045	Total Retail Demand	81.1	81.1	81.1	81.1	81.1	77.0	77.0
	Baseline Retail Demand[c]	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*	*81.1*
	5% Retail Demand Reduction[d]	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*-4.1*	*-4.1*
	Total Retail Supply	81.1	81.1	81.1	81.1	81.1	81.1	81.1
	Retail Groundwater[e]	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*	*4.4*
	Retail Recycled Water[f]	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*	*2.5*
	RWS Supply Utilized by Retail[g]	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*	*74.2*
	Difference (Supply Surplus or Shortfall)	0.0	0.0	0.0	0.0	0.0	4.1	4.1
	Difference as Percentage of Demand	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	5.3%

Normal, single dry, and multiple dry year conditions are on a water year basis.

a During all single dry years, no RWS system-wide shortages are in effect.

b During multiple dry years, no RWS system-wide shortages are in effect until years 4 and 5 at 2045 levels of demand. During those years, a 10% system-wide shortage is in effect.

c Total retail demands correspond to those in Table 3 and reflect passive and active conservation, onsite water reuse savings, and water loss. Demands for Groveland Community Services District is included in the table above.

d As amended in 2018, the Water Shortage Allocation Plan (WSAP) Tier One Allocation Plan requires retail customers to conserve a minimum of 5% during droughts. If, during a declared water shortage, retail demands on the Regional Water System (RWS) are lower than the retail allocation in a dry year, retail demands on the RWS will be reduced by 5%. An N/A on this row means that either this 5% rationing requirement doesn't apply (i.e. no declared water shortage), or retail customers are already rationing greater than 5%.

e Groundwater supplies are assumed to be equivalent to projected demands for the San Francisco Groundwater Supply Project (ramping up to 4 mgd by 2040) and Castlewood County Service Area (0.4 mgd). Groundwater availability would not be affected by dry year conditions.

f Recycled water supplies are assumed to be equivalent to projected demands related to the Westside Recycled Water Project (1.6 mgd by 2021 and 1.8 mgd by 2030), Harding Park and Fleming Golf Courses (0.23 mgd), and Sharp Park Golf Course (up to 0.1 mgd) and Treasure Island (0.2 mgd by 2025 and 0.4 mgd by 2030). Recycled water availability would not be affected by dry year conditions.

g Procedures for RWS allocations and the WSAP are described in Section 8.3 of the 2020 UWMP. Groundwater and recycled water are assumed to be used before RWS supplies to meet retail demand. However, in normal years, if groundwater and recycled water supplies are not available, up to 81 mgd of RWS supply could be used.

Appendix A – San Francisco Planning Memorandum

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

August 18, 2023

Paula Kehoe
Director of Water Resources, SFPUC
525 Golden Gate Street, 10th Floor
San Francisco, CA 94102

Re: Projections of growth for San Francisco through 2050

Dear Paula:

On October 27, 2020, the Planning Department provided SFPUC household and job growth projections to inform the citywide water demand projections in the 2020 update of the SFPUC's Urban Water Management Plan (UWMP). The SFPUC adopted the 2020 UWMP in June 2021. Since that time, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (Housing Element EIR or EIR) in November 2022. The EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher household projections than those used in the UWMP. As you requested, this memo provides the EIR's household projections[1] to inform a minor update to SFPUC's water demand projections.

Citywide Growth Projections

Table 1 shows the Planning Department's housing projections for the years 2020-2050. We recognize that the 2020 UWMP water planning horizon extends only to 2045.

Table 1: Development Projections

	2020	2025	2030	2035	2040	2045	2050
Housing Units	407,000	432,667	458,333	483,600	509,000	534,000	559,000

The Housing Element update is required to be adopted every eight years by state law and was approved by the Board of Supervisors in January 2023 and certified by the state Department of Housing and Community Development on February 1, 2023. One of the primary goals of the Housing Element 2022 Update is to improve housing affordability by increasing the rate of housing production compared with the past several decades. The projections are based on the Housing Element objective of producing an average of approximately 5,000

[1] The Housing Element EIR assumed slightly less job growth than that assumed in the Planning Department's October 27, 2020 memo used to inform the 2020 UWMP water demand projections (i.e., EIR assumed 869,000 jobs in 2045 whereas October 2020 memo assumed 894,255 jobs). Given that the 2020 UWMP water demand projections used more conservative (i.e., slightly higher) job growth assumptions, there is no need to update the water demand projections to account for the Housing Element EIR job growth assumptions.

housing units per year, with adjustments for certain large development plans. These projections were analyzed in the Housing Element EIR. (The projections can be found in Appendix C of the EIR.) The Housing Element EIR considered two projection years – 2035 and 2050. For the purposes of generating the 5-year incremental projections required by the SFPUC through 2045, the Planning Department assumes a constant, straight-line average pace of housing production for the periods of 2020-2035 and 2035-2050.

Regarding the typology of projected new housing stock, our memo provided to SFPUC dated October 27, 2020, to inform preparation of the 2020 UWMP, contained analysis supporting a Planning Department recommendation that the SFPUC assume for the purposes of modelling citywide projected housing development in San Francisco that **the number of single-family detached houses will not increase from existing stock and that all future net housing growth will take the form of multi-family structures.** This recommendation is unchanged.

Sincerely,

Joshua Switzky
Acting Director of Citywide Planning

cc:
Fan Lau, SFPUC
Lisa Gibson, Planning
Wade Wietgrefe, Planning
Debra Dwyer, Planning
Julie Moore, Planning
Scott Edmondson, Planning
Peter Miljanich, City Attorney
Andrea Ruiz-Esquide, City Attorney

Appendix B – Woodard & Curran Memorandum

TECHNICAL MEMORANDUM

TO: Paula Kehoe, Director of Water Resources, San Francisco Public Utilities Commission

Fan Lau, Water Resources Division, San Francisco Public Utilities Commission

PREPARED BY: Chris Hewes, Woodard & Curran

REVIEWED BY: Katie Cole, Woodard & Curran

DATE: August 25, 2023

RE: SFPUC Demand Forecast Model Re-Run with Updated Housing Unit Forecast

In 2020, the San Francisco Public Utilities Commission (SFPUC) engaged The Brattle Group to develop an econometric-based water demand forecast model (Model) to generate retail water demands for the SFPUC's 2020 Urban Water Management Plan (UWMP). A key input to the Model was household development forecasts provided by the San Francisco Planning Department (October 27, 2020 memo from Joshua Switzky, Land Use & Community Planning Program Manager). At the time, these forecasts were in draft form, developed during preparation of the city's General Plan Housing Element (Housing Element 2022 Update). Since June 2021 when the 2020 UWMP was published, the Planning Commission certified the Housing Element 2022 Update Environmental Impact Report (EIR) in November 2022. The EIR, which supported the City's adoption of the Housing Element in January 2023, assumed slightly higher household forecasts than those used in the UWMP.

Woodard & Curran worked with the Model developers to re-run it with the updated housing development forecasts provided by the San Francisco Planning Department (see Section 1 – Updated Model Inputs). The resulting Model outputs (water demands) were combined with other values external to the Model that together provide full retail water demand for SFPUC (see Section 2 – Updated Results).

1. UPDATED MODEL INPUTS

See **Table 1** for the updated housing development forecast provided by the San Francisco Planning Department (August 18, 2023 memo from Joshua Switzky, Acting Director of Citywide Planning). Per SFPUC's guidance in the previous Model effort, and re-confirmed by the San Francisco Planning Department for the current Model effort, it was assumed that there will not be an increase in the number of single-family detached houses from the existing stock. Therefore, the water demand forecast for the single-family sector is the same as the prior outputs. All future housing growth is expected to occur in the multi-family residential sector. No other inputs to the Model were changed (e.g., employment forecast, econometric variables, etc.).

Table 1: Housing Development Forecast

Housing Units	2020	2025	2030	2035	2040	2045
For 2020 UWMP	399,313	425,118	450,923	476,728	502,533	528,338
For 2023 Update	407,000	432,667	458,333	483,600	509,000	534,000

2. UPDATED RESULTS

See **Table 2** for the updated outputs directly from the Model. **Table 3** shows the updated multi-family residential sector forecast details. Tables 2 and 3 contain rows that specify the water savings associated with the Onsite Water Reuse Program. These savings were estimated for the 2020 UWMP but are not updated for this memo as (1) they are estimated separately from the Model and (2) the types of new multi-family residential projects and their participation in the Onsite Water Reuse Program are currently unknown.

See **Table 4** for a comparison of the previous and updated multi-family residential sector forecasts.

See **Table 5** for the updated retail demand forecast, which incorporates additional information that is external to the Model, as it was presented in the 2020 UWMP (e.g., municipal and irrigation demands in the "non-residential" sector, as well as Suburban Retail demands).

Table 2: Model Outputs (mgd)

		FY2019-20	FY2024-25	FY2029-30	FY2034-35	FY2039-40	FY2044-45
Single Family Residential							
Unadjusted Baseline Demand		14.32	13.83	13.63	13.60	13.63	13.65
Conservation:	*Active*	0.00	-0.15	-0.18	-0.17	-0.13	-0.11
Total		14.32	13.68	13.45	13.43	13.49	13.54
Multifamily Residential							
Unadjusted Baseline Demand		23.09	24.63	26.74	29.21	31.85	34.46
Conservation:	*Active*	0.00	-0.15	-0.20	-0.18	-0.11	-0.06
	Non-Potable / Onsite Reuse	-0.07	-0.21	-0.35	-0.63	-0.91	-0.91
Other Accounts:	*Fire*	0.01	0.01	0.01	0.01	0.01	0.01
Total		23.03	24.28	26.19	28.41	30.85	33.51
Commercial and Industrial							
Unadjusted Baseline Demand		17.81	17.25	17.33	17.49	17.93	18.38
Conservation:	*Active*	0.00	-0.28	-0.30	-0.30	-0.28	-0.23
	Non-Potable / Onsite Reuse	-0.03	-0.09	-0.15	-0.27	-0.39	-0.39
Other Accounts:	*Docks / Ships*	0.02	0.02	0.02	0.02	0.02	0.02
	Builders / Contractors	0.18	0.18	0.18	0.18	0.18	0.18
	Fire	0.04	0.04	0.04	0.04	0.04	0.04
Total		18.02	17.12	17.11	17.16	17.51	18.00
Grand Total		55.38	55.08	56.76	59.00	61.85	65.05

Notes:

FY2019-20: This column is a forecast that assumes no COVID-19 pandemic and average weather conditions. Actual demand for FY2019-20 is shown in Table 5 of this memo.
Unadjusted Baseline Demand: This is the raw output of the statistical forecast model.
Conservation Adjustments: These estimates are the output of the SFPUC Conservation model and have not been updated in this memo.
Multifamily Residential Fire Accounts: These values were supplied by SFPUC and have not been updated in this memo.
Commercial and Industrial: These forecasts are unchanged from the previous forecasts.
Grand Total: This row does not include water losses, suburban accounts, irrigation accounts, or municipal accounts. The volumes from these additional sector types are included in Table 5 of this memo and are unchanged from the previous forecasts.

Table 3: Multi-Family Demand Forecast Details

	FY2019-20	FY2024-25	FY2029-30	FY2034-35	FY2039-40	FY2044-45
Number of Units	282,814	308,481	334,147	359,414	384,814	409,814
Residents per Unit	2.30	2.30	2.30	2.30	2.30	2.30
Avg. Consumption per Capita (gal / day)						
Unadjusted Baseline Demand	35.50	34.71	34.79	35.34	35.99	36.56
Conservation: *Active*	0.00	-0.21	-0.27	-0.23	-0.12	-0.06
Non-Potable / Onsite Reuse	-0.11	-0.30	-0.47	-0.78	-1.05	-0.98
Demand per Capita	35.39	34.20	34.05	34.33	34.82	35.52
Avg. Consumption per Unit (gal / day)						
Unadjusted Baseline Demand	81.66	79.84	80.01	81.27	82.78	84.09
Conservation: *Active*	0.00	-0.49	-0.63	-0.52	-0.29	-0.14
Non-Potable / Onsite Reuse	-0.25	-0.70	-1.07	-1.79	-2.41	-2.25
Demand per Unit	81.40	78.65	78.31	78.97	80.09	81.70
Total Consumption (MGD)						
Unadjusted Baseline Demand	23.09	24.63	26.74	29.21	31.85	34.46
Conservation: *Active*	0.00	-0.15	-0.20	-0.18	-0.11	-0.06
Non-Potable / Onsite Reuse	-0.07	-0.21	-0.35	-0.63	-0.91	-0.91
Total Demand	23.02	24.27	26.18	28.40	30.84	33.50

Notes:

FY2019-20: This column is a forecast that assumes no COVID-19 pandemic and average weather conditions. Actual demand for FY2019-20 is shown in Table 5 of this memo.
Unadjusted Baseline Demand: This is the raw output of the statistical forecast model.
Conservation Adjustments: These estimates are the output of the SFPUC Conservation model and have not been updated in this memo.

Table 4: Multi-Family Residential Water Demand Forecast (mgd)

Multi-Family Residential	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
From 2020 UWMP	22.9	23.7	25.6	27.9	30.3	33.0
From 2023 Update (from Table 3)	22.9	24.3	26.2	28.4	30.9	33.5
Difference	0.0	0.6	0.6	0.6	0.5	0.5

a Actual consumption data are obtained from customer billing data.

b Multi-family residential demand projections are from an econometric model developed for the SFPUC.

Table 5: Retail Water Demand Forecast (mgd)

Retail Sector or Use Type	Actual[a]	Projected[b]				
	2020	2025	2030	2035	2040	2045
In-City Retail						
Single-Family Residential	14.5	13.7	13.5	13.4	13.5	13.5
Multi-Family Residential	22.9	24.3	26.2	28.4	30.9	33.5
Non-residential	20.9	22.9	22.9	22.8	23.1	23.6
Water Loss[c]	7.2	6.0	6.0	6.0	6.0	6.0
Subtotal In-City Retail Demand	65.3	66.9	68.6	70.6	73.5	76.7
Suburban Retail						
Single-Family Residential[d]	0.1	0.1	0.1	0.1	0.1	0.1
Non-Residential	3.1	4.0	4.0	4.0	4.0	4.0
Groveland CSD[e]	0.3	0.3	0.3	0.3	0.3	0.3
Water Loss[c]	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Suburban Retail Demand	3.5	4.4	4.4	4.4	4.4	4.4
Total Retail Demand	**68.8**	**71.3**	**73.0**	**75.0**	**77.9**	**81.1**

a Actual consumption data are obtained from customer billing data.

b Single family residential and multi-family residential demand projections are from an econometric model developed for the SFPUC. Non-residential demands include commercial/industrial demands, which are also from an econometric model, as well as municipal and irrigation demands, which are assumed to remain constant at the previous five-year average level.

c Water losses include both apparent and real losses. Suburban retail water losses are considered to be negligible. Actual water loss in 2020 is based on SFPUC's July 2019 – June 2020 water loss audit.

d Suburban retail residential demands are for single family only as no multi-family residential buildings are served.

e Groveland Community Services District (CSD) is accounted for as a retail customer for the purpose of this table and subsequent retail supply and demand comparisons in the 2020 UWMP. Demand projections were provided by Groveland CSD based on its population projections and assumed per capita water use of 107 GPCD (projections are subject to change as part of its UWMP process). In the corresponding standardized tables in UWMP 2020 Appendix B, Groveland CSD is not reported as retail, but rather wholesale.

Attachment B –

3251 20th Avenue (Stonestown) Project Demand Memo

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
628.652.7600
www.sfplanning.org

September 18, 2023

To: Fan Lau, P.E. – San Francisco Utilities Commission
From: Florentina Craciun, AICP – Environmental Planning

Re: 3251 20th Avenues (Stonestown) Water Supply Assessment Request
Planning Department File No. 2021-012028ENV

The purpose of this memorandum is to request that the San Francisco Public Utilities Commission (SFPUC) prepare a revised Water Supply Assessment (WSA) for the proposed project at 3251 20th Avenue (Stonestown), in compliance with CEQA Guidelines Section 15155 and Sections 10910 through 10915 of the California Water Code. A prior Project Water Demand Memo and WSA analysis was prepared for the project and was reviewed and approved by the SFPUC Commission on October 24, 2022. This Project Water Demand Memo request provides updated information based on current requirements for a modified project at 3251 20th Avenue (Stonestown Mall).

The project sponsor (Brookfield Properties Development) proposes to redevelop the approximately 27 acres of surface parking surrounding the existing Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use residential and retail community. Under the Revised Variant, the existing 775,000-square-foot mall would remain, with changes to the façade, entrances, and exits. Overall, the proposed project would include up to approximately 3,491 residential units; up to 160,000 square feet of new retail sales and service use space; up to 96,000 square feet of non-retail sales and service use; approximately 63,000 square feet of institutional uses; approximately 4,700 parking spaces; 6 acres of open space; and infrastructure improvements.

The project sponsor provided project information intended to meet the requirements outlined in the SFPUC guidance memo dated January 13, 2022. A summary of the project description, average daily water demands, and supporting tables prepared by the project sponsor's consultant (based on the SFPUC District Scale Non-Potable Water Calculator Version 9.1), are attached.

Should you have questions or need additional information from the Planning Department or the project sponsor, please contact me at 628.652.7510 or Florentina.craciun@sfgov.org.

Sincerely,

Florentina Craciun, AICP

575 Market Street
Suite 3700
San Francisco, CA 94105
415.896.5900 phone
415.896.0332 fax

esassoc.com

memorandum

date	July 28, 2023
to	Florentina Craciun, San Francisco Planning Department, Environmental Planning
from	Susan Yogi and Jill Feyk-Miney, ESA
subject	Revised Stonestown Development Project Demand Memorandum for Preparation of Water Supply Assessment Case No. 2021-012028ENV

This memorandum presents the revised project description and project information regarding water demand in order for the San Francisco Public Utilities Commission (SFPUC) to prepare a Water Supply Assessment (WSA) for the Stonestown Development Project (proposed project). The SFPUC prepared the WSA for the proposed project based on the 2020 Urban Water Management Plan for the City and County of San Francisco. As described on page 2 of this memorandum, the original proposed project included a variant (original variant), which considered additional development. The previous WSA calculator was prepared using the original variant's projected demand because it represents the most conservative buildout for the project site from a water demand perspective. The SFPUC approved the WSA for the proposed project by Resolution No. 22-0186 on October 24, 2022. Since then, the project sponsor has revised the original variant to add residential units and reduce non-retail sales and service and hotel uses (herein referred to as the "revised variant"). The "proposed project" as described in this memorandum refers to the original and revised variant. This memorandum is expected to be attached to the revised WSA as an appendix and referenced in the WSA as needed. **Table 1** provides the basic information of the proposed project.

Revised Variant Description

The proposed Stonestown Development project is located on an approximately 41-acre site in the Lakeshore area in southwest San Francisco. The project sponsor (Brookfield Properties Development) proposes to redevelop the approximately 27 acres surrounding the existing on-site Stonestown Galleria shopping mall into a master-planned, multi-phased, mixed-use residential and retail community. Under the proposed project, the existing 760,000-square-foot Stonestown Galleria shopping mall would remain, with changes to the façade, entrances, and exits. The existing parking garage in the southwest corner of the project site, the vacant theater at the northwest corner of the site, and the CitySports and commercial building at the northeast corner of the site would be demolished and redeveloped as part of the proposed project.

TABLE 1
PROJECT INFORMATION

Project Name	Stonestown Development Project
Case No.	2021-012028ENV
Estimated Construction Completion	2032
Project Contact	Florentina Craciun – 628.652.7510, Florentina.Craciun@sfgov.org
Current Land Use(s)	Retail Sales and Services (shopping mall) Parking Lots Institutional
Proposed Land Use(s)	Residential Retail Sales and Services Non-Retail Sales and Services Parking Lots Hotel (the revised variant does not include hotel uses) Institutional
Project Address	3251 20th Avenue
Block/Lot	7295/Lots 2, 4, 6, 7, 35, 37, 38; 7296/Lots 5, 6, 7, 8, 9, 10
Project Site Size	1,781,604 square feet (40.9 acres)
Days In Operation Per Year	365 residential days; 365 retail days; 260 general office days, 260 childcare days

Overall, the proposed project would include up to approximately 2,930 residential units; up to 160,000 square feet of new retail sales and service use space; up to 200,000 square feet of new non-retail sales and service use[1]; up to approximately 100,000 square feet of hotel use; approximately 53,000 square feet of institutional uses to include an approximately 15,000-square-foot childcare facility and space for community use; approximately 4,250 parking spaces; 6 acres of open space; and infrastructure improvements. The original variant would include the development of the 0.8-acre parcel that is currently occupied by Authentic Church (Block/Lot 7295/002) at 3355 19th Avenue, adjacent to the project site between Eucalyptus and Winston drives. Under the original variant, the redevelopment of the 27 acres surrounding the Stonestown Galleria would be the same as the proposed project; however, the additional 0.8-acre Authentic Church parcel would be developed with an additional 150 residential units; 10,000 square feet of institutional use; and 200 parking spaces in a partially below grade parking structure. However, as compared to the original variant, the revised variant would include 3,491 residential units (an additional 411 residential units including 200 senior housing units), an additional 411 parking spaces, 104,000 square feet less non-retail sales and service use, and no hotel use. **Table 2** presents the existing, original variant, revised variant, and net change from the original variant.

The WSA calculator prepared for the land uses proposed under the revised variant provide a conservative estimate of water demand for the proposed project (see **Attachment 1**).

1 "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (San Francisco Planning Code section 102, herein referred to as "planning code").

TABLE 2
PROJECT CHARACTERISTICS: ORIGINAL AND REVISED VARIANT

Project Characteristics	Existing	Proposed Project Including Authentic Church Variant (Original Variant)	Revised Variant	Net Change from Original Variant
Residential Use	0	3,200,000 sf	Up to 3,534,000	+334,000
Retail Sales and Services Use[a]	760,000 sf mall	**Up to 160,000 sf**	**Up to 160,000 sf**	No Change
	13,300 sf, 30-foot-tall vacant theater	710,000[d] sf of the existing mall retained	710,000[d] sf of the existing mall retained	
	15,000 sf, 15- to 30-foot-tall commercial building	13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished	13,300 sf vacant theater, 50,000 sf CitySports building, and 15,000 sf commercial building to be demolished	
		81,700 sf net new	81,700 sf net new	
Non-Retail Sales and Service Use[b]	0	Up to 200,000 net new sf	Up to 96,000	-104,000
Hotel	0	Up to 100,000 sf (200 rooms) net new	0	-100,000 (-200 rooms)
Institutional Use[c]	30,000 sf, 30-foot-tall church	**Up to 63,000 sf**	**Up to 63,000 sf**	No change
		30,000 sf church demolished	30,000 sf church demolished	
		33,000 sf net new**;** including an approximately 15,000-square-foot childcare facility	33,000 sf net new**;** including an approximately 15,000-square-foot childcare facility	
Proposed Total Dwelling Units (Approximate Number)	***0***	***3,080***	***3,491***	***+411***
Proposed Parking	**Number (approximate)**			
Vehicle parking spaces:	**3,400**	**4,450**	**4,861**	**+411**
Car-Share parking spaces	0	82	82	No Change
Open Space	**Area**			
Publicly accessible open space	1.6 acres	Approximately 6 net new acres		No Change
Private residential open space	N/A	Approximately 36 square feet per unit if located on balcony, or approximately 48 square feet per unit if commonly accessible to residents, or as otherwise refined in the planning code.		No Change
Building Characteristics				
Stories	1 to 3 stories	3 to 18 stories		No Change
Height	15 to 65 feet	30 to 190 feet		No Change
Ground floor	Retail sales and service	All blocks would include ground floor active uses, which could include any combination of retail sales and service, non-retail sales and service, institutional, or residential space facing the street		No Change

NOTES

a. "Retail Sales and Service Use" is a use category that includes, but not limited to: the sale of goods, typically in small quantities, or services directly to the ultimate consumer or end user with some space for retail service on site, excluding Retail Entertainment Arts and Recreation, and Retail Automobile Uses and including, but not limited to: Adult Business, Animal Hospital, Bar, Cannabis Retail, Chair and Foot Massage, Tourist Oriented Gift Store, General Grocery, Specialty Grocery, Gym 2 Hotel, Jewelry Store, Kennel, Laundromat, Liquor Store, Massage Establishment, Mortuary (Columbarium), Motel, Non-Auto Sales, Pharmacy, Restaurant, Limited Restaurant, General Retail Sales and Service, Financial Service, Fringe Financial Service, Limited Financial Service, Health Service, Personal Service, Retail Professional Service, Self-Storage, Tobacco Paraphernalia Establishment, and Trade Shop (planning code section 102).

b. "Non-Retail Sales and Service Use" includes the sale of goods or services to other businesses rather than the end user, or that does not provide for direct sales to the consumer on site. Uses in this category include, but are not limited to: Business Services, Catering, Commercial Storage, Design Professional, General Office, Laboratory, Life Science, Non-Retail Professional Service, Trade Office, Wholesale Sales, and Wholesale Storage (planning code section 102).

c. "Institutional Use" includes Child Care Facility, Community Facility, Private Community Facility, Hospital, Job Training, Medical Cannabis Dispensary, Religious Institution, Residential Care Facility, Social Service or Philanthropic Facility, Post-Secondary Educational Institution, Public Facility, School, and Trade School (planning code section 102).

d. The 50,000 sf CitySports building would be demolished and is subtracted from the existing mall square footage to be retained.

Project construction would occur in six phases over the course of approximately eight years, from 2024 to approximately 2032 (see **Table 3**). The first operational year is assumed to be 2027. By 2030, construction of Phases 1–3 is assumed to be completed, consisting of up to approximately 1,893 residential units (1,867,500 square feet), up to 66,000 square feet of new retail sales and service use space; up to 12,000 square feet of new non-retail sales and service use;[2] and up to approximately 21,000 square feet of institutional uses.[3] The revised variant would have the same construction schedule as the original variant for Phases 1 through 5, but would extend Phase 6 by approximately 3 months.

TABLE 3
PRELIMINARY ORIGINAL AND REVISED ESTIMATED CONSTRUCTION SCHEDULE

Construction Phase	Start	Finish	Duration (Months)
Phase 1	4/1/2024	1/11/2028	45
Phase 2	4/1/2025	12/22/2028	44
Phase 3	6/1/2026	10/1/2028	28
Phase 4[a]	4/1/2027	12/1/2030	44
Phase 5	4/1/2028	11/1/2031	43
Phase 6	4/1/2029	4/1/2032 (original) 6/30/2032 (revised)	36 (original) 39 (revised)
Total	***4/1/2024***	***4/1/2032 (original)*** ***6/30/2032 (revised)***	***96 (original)*** ***99 (revised)***

SOURCE: Brookfield Properties Development, 2022 and 2023.
NOTE:
a. The construction of the Authentic Church Variant would be accommodated within Phase 4.

The original and revised variant would meet the requirements of all applicable City and County of San Francisco ordinances related to water conservation and resources, including:

- The original and revised variant would construct potable water distribution pipelines to serve the new uses. The existing potable water pipeline in the segments of 20th Avenue and Buckingham Way would be relocated to the proposed alignments of these streets. To reduce potable water demand, high-efficiency fixtures and appliances would be installed in new buildings comply with the state's Title 24 requirements and the City's Residential Water Conservation Ordinance (San Francisco Housing Code, Ch. 12A) and Commercial Water Conservation Ordinance (San Francisco Building Code, Ch. 13A).
- The project site is located within a designated recycled water use area, and the original and revised variant would provide the piping needed to distribute recycled water when it becomes available, as required under San Francisco's Recycled Water Use Ordinance (San Francisco Public Works Code, Article 22).
- The original and revised variant would comply with San Francisco's Non-potable Water Ordinance (San Francisco Health Code, Article 12C) and would include the diversion and reuse of water from HVAC/cooling systems, graywater, blackwater (from commercial uses only), and rainwater for toilet and urinal flushing, cooling towers, residential laundry, drain trap priming, and irrigation or landscaped areas.

2 "Non-Retail Sales and Service Use" includes business services, catering, commercial storage, design professional, general office, laboratory, life science, non-retail professional service, trade office, wholesale sales, and wholesale storage (planning code section 102).

3 Brookfield Properties Development, 2023, Stonestown Program Summary Spreadsheet, February 7, 2023.

- Landscaped areas would be installed, constructed, operated, and maintained in accordance with the Water Efficient Irrigation Ordinance (San Francisco Administrative Code, Ch. 63).

Revised Variant Water Demand

Table 4 shows the estimated daily and annual water demand for the original and revised variant by land use category. As shown, the total water use for the revised variant would be approximately 309,400 gallons per day (gpd), or 112.92 million gallons per year (gpy). Of the total water demand, 104.06 million gpy would be for indoor water use and 8.85 million gpy would be for irrigation and HVAC/cooling purposes. In addition, because the revised variant would comply with the City's Non-potable Water Ordinance and Recycled Water Use Ordinance, other water saving measures involving water efficient fixtures and onsite reuse, could result in the availability of up to 56.38 million gpy of non-potable water to offset projected water demand. Approximately 42.94 million gpy or 38 percent of revised variant demand is expected to be met by non-potable supply. The calculations were developed using the SFPUC District Scale Non-Potable Water Calculator, Version 9.1.

TABLE 4
ORIGINAL AND REVISED VARIANT ESTIMATED WATER DEMAND

Proposed Use	Original Variant Estimated Daily Water Demand (gpd)	Original Variant Estimated Annual Water Demand (gpy)	Revised Variant Estimated Daily Water Demand (gpd)	Revised Variant Estimated Annual Water Demand (gpy)
Commercial water demand (indoor)	15,746	5,747,220	6,288	2,295,041
Multi-Family water demand (indoor)[a]	209,507	76,469,901	278,813	101,766,679
Landscape irrigation demand (outdoor)	6,259	2,284,409	6,259	2,284,409
HVAC/Cooling demand (outdoor)[b]	17,091	6,238,215	18,003	6,570,986
Total	***248,700***	***90,739,800***	***309,400***	***112,917,200***

NOTES:

a. The persons per household value of 2.36 was used instead of the default value of 2.01 in the WSA calculator. The WSA calculator's default is based on the 2011 Retail Demand Model Update, while the 2.36 persons per household value is based on the latest U.S. Census data and consistent with the population analyzed in the environmental impact report.

b. The HVAC/Cooling demands are calculated by applying demand factors for each land use and typical usage percentages by month. This is based on the project area's typical climate and the project sponsor's data.

Table 5 summarizes water volumes reported in units of million gallons per day (mgd) for the original and revised variant. Note that the revised variant would not vary demands based on water year type.

TABLE 5
WATER DEMAND BASED ON PROJECT PHASING FOR THE ORIGINAL AND REVISED VARIANTS (MGD)

Demand (mgd)	2025[a]	2030	2035	2040	2045
Original Variant					
Potable Demand	0	0.083	0.152	0.152	0.152
Non-potable Demand	0	0.064	0.097	0.097	0.097
Total Demand	***0***	***0.147***	***0.249***	***0.249***	***0.249***
Potential Potable Water Savings as Percentage of Total Demand	—	41%	39%	39%	39%
Revised Variant					
Potable Demand	0	0.103	0.191	0.191	0.191
Non-potable Demand	0	0.075	0.118	0.118	0.118
Total Demand	***0***	***0.178***	***0.309***	***0.309***	***0.309***
Potential Potable Water Savings as Percentage of Total Demand	—	40%	38%	38%	38%

SOURCE: SFPUC District Scale Non-Potable Water Calculator, Version 9.1

NOTES:

a. Assumes first operational year is 2027.

NON-POTABLE WATER CALCULATOR

Project Summary Sheet Stonestown

Project Contact: Christie Donnelly
510-816-0761
christie.donnelly@brookfieldpropertiesdevelopment.com

Total Gross Square Footage: 5,467,863 **Estimated Final Site/Building Permit Issuance Date:** 1/1/2024

1. Demand and Supply Summary

Demand Met by Non-Potable Supply (gallons/year):	**42,940,015** *38% of total*
Total Annual Water Demand (gallons/year):	**112,917,200**

	6-Month Compliance Periods	
	January - June	**July - December**
Potable Make-Up Allocation (gallons/period):	**1,814,459**	**1,822,444**

2. Building Information Summary

	Site 1	Site 2	Site 3	Project Total
Project / Building Name:	**Stonestown**			**Stonestown**
Project Address:	3251 20th Avenue			3251 20th Avenue San Francisco, CA
Assessor's Block & Lot No. / APN:	7295-004, 005, 035, 037, 038 & 7296			-
Date of Completion:	2038			-
Building Type:	Mixres	MIPS	MIPS	-
Total Building Size (GSF):	5,467,863	0	0	5,467,863
Total Lot Size (ft^2):	1,432,940	0	0	1,432,940
Number of Residential Units:	3,491	0	0	3,491
Impervious Surface Above Grade (ft^2):	664,590	0	0	664,590
Impervious Surface Below Grade (ft^2):	436,030	0	0	436,030
Irrigated Landscaped Area (ft^2):	242,870	0	0	242,870

3. Summary of Non-Potable Demands and Supplies for the Project

Non-Potable Supply Estimates

	Annual Supply (gpy)				
Onsite Alternate Water Sources	**Site 1**	**Site 2**	**Site 3**	**Project Total**	
Graywater:	0	0	0	0	
Blackwater:	55,494,848	0	0	55,494,848	*(includes GW)*
Condensate:	887,083	0	0	887,083	
Rainwater/Stormwater:	0	0	0	0	
Other Supplies:	0	0	0	0	
TOTAL:	**56,381,931**	**0**	**0**	**56,381,931**	

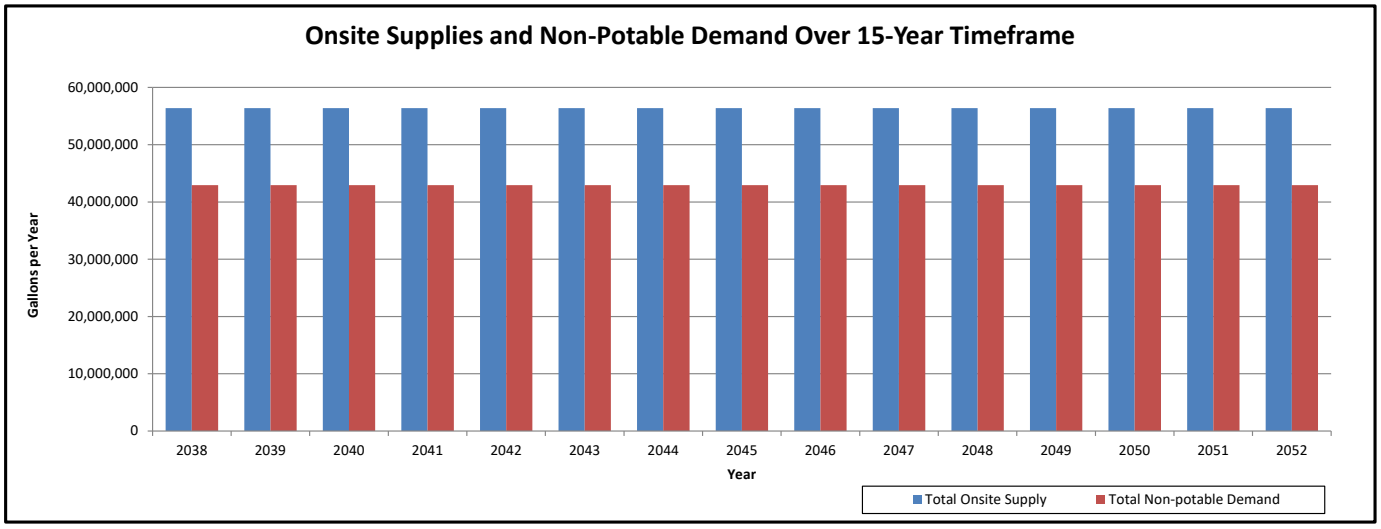
Non-Potable Demand Estimates

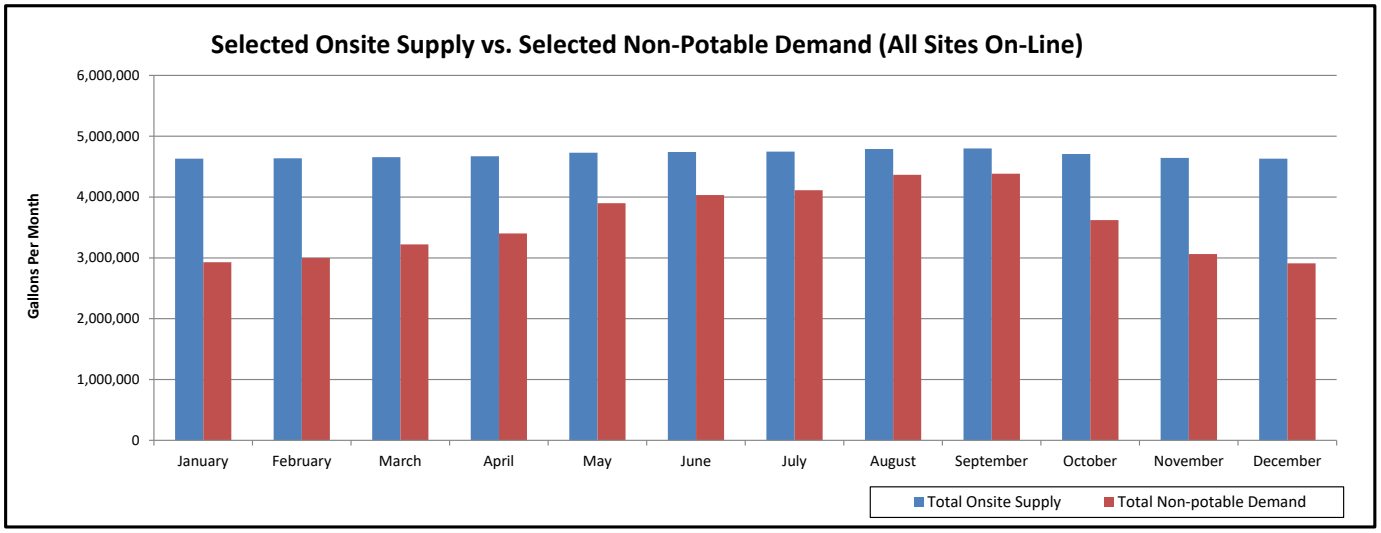
	Annual Demand (gpy)			
Project Non-Potable Demands	**Site 1**	**Site 2**	**Site 3**	**Project Total**
Toilets/Urinals:	20,516,371	0	0	20,516,371
Drain Trap Priming:	0	0	0	0
Irrigation:	2,284,409	0	0	2,284,409
Clothes Washing:	13,568,249	0	0	13,568,249
HVAC/Cooling:	6,570,986	0	0	6,570,986
Other Demands:	0	0	0	0
TOTAL:	**42,940,015**	**0**	**0**	**42,940,015**

4. Project Phasing

This offset analysis assumes the full year of supplies is available to offset non-potable demands. Some scenarios may require storage to allow excess supplies from one part of the year to be used in later months with available demand.

	SITE 1: Stonestown		SITE 2:		SITE 3:		Project Total		
15-Year Timeframe (enter dates on Tab 1)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	NP Offset Supplies (gpy)	Selected NP Demand (gpy)	Re-Used Non-Potable Supplies (gpy)
2038	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2039	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2040	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2041	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2042	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2043	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2044	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2045	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2046	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2047	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2048	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2049	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2050	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2051	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015
2052	56,381,931	42,940,015	0	0	0	0	56,381,931	42,940,015	42,940,015





ATTACHMENT B

AGREEMENT TO IMPLEMENT MITIGATION MONITORING AND REPORTING PROGRAM

Record No.: 2021-012028ENV
Project Title: Stonestown Development Project
Project Sponsor: Christie Donnelly, Brookfield Properties
Lead Agency: San Francisco Planning Department
Staff Contact: Josh Pollak – 628.652.7493
CPC.Stonestown@sfgov.org

The table below indicates when compliance with each mitigation measure must occur. Some mitigation measures span multiple phases. Substantive descriptions of each mitigation measure's requirements are provided on the following pages in the Mitigation Monitoring and Reporting Program.

Adopted Mitigation Measure	Period of Compliance			Compliance with MM Completed?
	Prior to the Start of Construction*	During Construction**	Post-construction or Operational	
Mitigation Measure M-CR-1: Documentation of Historic Resources	X	X	X	
Mitigation Measure M-CR-1b: Salvage Plan	X	X		
Mitigation Measure M-CR-1c: Public Interpretive Program	X		X	
Mitigation Measure M-TR-1: Construction Coordination Plan	X	X		
Mitigation Measure M-TR-4a: Reduce Project Vehicle Trips	X	X	X	
Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure	X	X		
Mitigation Measure M-C-TR-3: Signal Coordination along 19th Avenue	X	X	X	
Mitigation Measure M-TR-6: Driveway and Loading Operations Plan (DLOP)	X		X	
Mitigation Measure M-NO-1: Construction Noise Control	X	X		
Mitigation Measure M-NO-4: Noise Analysis and Attenuation	X			
Mitigation Measure M-NO-5: Noise Limits for Outdoor Amplified Sound			X	
Mitigation Measure M-AQ-1a: Clean Off-Road Construction Equipment	X	X		

Adopted Mitigation Measure	Period of Compliance			Compliance with MM Completed?
	Prior to the Start of Construction*	During Construction**	Post-construction or Operational	
Mitigation Measure M-AQ-1b: Super-compliant VOC Architectural Coatings during Construction		X		
Mitigation Measure M-AQ-1c: Clean On-Road Construction Trucks		X		
Mitigation Measure M-AQ-1d: Super-Compliant VOC Architectural Coatings during Operation			X	
Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators	X		X	
Mitigation Measure M-AQ-1f: Promote Use of Green Consumer Products			X	
Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction			X	
Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure			X	
Mitigation Measure M-AQ-1i: Electric Landscaping Equipment			X	
Mitigation Measure M-AQ-1j: Offset Remaining ROG Emissions		X	X	
Mitigation Measure M-WI-1a: Wind Safety Plan	X	X	X	
Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet	X			
Mitigation Measure M-WI-1c: Maintenance Plan for Landscaping on or off the Project Site and Wind Baffling Measures in the Public Right-of-Way	X	X	X	
Mitigation Measure M-WI-1d: Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in Private Rights-of-Way	X	X	X	
Mitigation Measure M-CR-2: Archeological Monitoring	X	X	X	
Mitigation Measure M-GE-6: Inadvertent Discovery of Paleontological Resources during Construction	X	X	X	

* Prior to any ground disturbing activities at the project site.
** Construction is broadly defined to include any physical activities associated with construction of a development project including, but not limited to site preparation, clearing, demolition, excavation, shoring, foundation installation, and building construction.

X I agree to implement the attached mitigation measure(s) as a condition of project approval.

Property Owner or Legal Agent Signature — Date: 4/18/24

It's Authorized Signatory

Note to sponsor: Please contact CPC.EnvironmentalMonitoring@sfgov.org to begin the environmental monitoring process.

ATTACHMENT B

MITIGATION MONITORING AND REPORTING PROGRAM

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
EIR MITIGATION MEASURES AGREED TO BY PROJECT SPONSOR				
SECTION 3.A, HISTORIC ARCHITECTURAL RESOURCES				
Mitigation Measure M-CR-1a: Documentation of Historic Resources. Prior to issuance of demolition permits for the historic resource, the project sponsor shall undertake Historic American Buildings Survey/Historic American Landscapes Survey/Historic American Engineering Record-like (HABS/HALS/HAER-like) documentation of the historic resource's features. The documentation shall be undertaken by a professional who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History, History, or Architecture (as appropriate) to prepare written and photographic documentation of the UA Stonestown Twin Theater. The specific scope of the documentation shall be reviewed and approved by the planning department, but shall include the following elements: • *Measured Drawings* – A set of measured drawings shall be prepared that depict the existing size, scale, and dimension of the historic resource. Planning department staff will accept the original architectural drawings or an as-built set of architectural drawings (e.g., plans, sections, elevations). Planning department staff will assist the consultant in determining the appropriate level of measured drawings. • *HABS/HALS/HAER-like Photographs* – Either HABS/HALS/HAER standard large-format or digital photography shall be used. The scope of the digital photographs shall be reviewed by planning department staff for concurrence, and all digital photography shall be conducted according to the latest National Park Service (NPS) standards. The photography shall be undertaken by a qualified professional with demonstrated experience in HABS/HALS/HAER photography. Photograph views for the data set shall include contextual views; views of all sides of the resource; oblique views of the resource; and detailed	Project sponsor in consultation with a professional who meets the Secretary of the Interior's Professional Qualification Standards	Prior to issuance of the demolition permit for the UA Stonestown Twin Theater historic resource	Planning Department Preservation Staff	Considered complete upon approval of the documentation and transmittal to repositories

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
views of character-defining features including certain interior spaces. All views shall be referenced on a photographic key. This photographic key shall be on a map of the property and shall show the photograph number with an arrow to indicate the direction of the view. Historical photographs shall also be collected, reproduced, and included in the data set. • *Written Historical and Descriptive Data* – A written historical narrative and report shall be prepared in accordance with the HABS/HALS/HAER Historical Report Guidelines. The report shall follow an outline format that begins with a statement of significance supported by the development of the architectural/engineering and historical context in which the historic resource was constructed. The report shall also include a physical description and bibliographic information. • *Video Recordation* – Video recordation shall be undertaken before demolition or site permits are issued for the historic resource. The project sponsor shall undertake video documentation of the affected historic resource and its setting. The documentation shall be conducted by a professional videographer, one with experience recording architectural resources. The documentation shall be narrated by a qualified professional who meets the standards for history, architectural history, or architecture (as appropriate) set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations Part 61). The documentation shall include detailed information—using visuals in combination with narration—about the materials, construction methods, current condition, historic use, and historic context of the historic resource. • *Softcover Book* – A print-on-demand softcover book shall be produced that includes the content from previous historical reports, historical photographs, documentation photography, measured drawings, and field notes. The Print-on-Demand book shall be made available to the public for distribution. The project sponsor shall transmit the above documentation to the History Room of the San Francisco Public Library, San Francisco Architectural Heritage, California Historical Society, the planning department, the Northwest Information Center, nearby neighborhood or community group repositories that request copies, and no more than two additional repositories as directed by the planning department. The documentation scope will determine the requested documentation type for each				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
facility, and the project sponsor will conduct outreach to identify other interested groups. Drafts of all documentation will be reviewed and approved by the planning department's staff before any demolition permit is granted for the affected historic resource.				
Mitigation Measure M-CR-1b: Salvage Plan. The project sponsor shall make a good faith effort to salvage character-defining features or materials of historical interest to be utilized as part of the interpretative program or to be donated to community or art groups. A salvage plan, which may include materials of historical interest if community or arts groups expressed an interest in such items and commit to relocating them at their own expense, will be reviewed and approved by the planning department's staff before any removal of character-defining features. Planning department preservation staff will coordinate with the project sponsor on implementation of the salvage plan and the project sponsor will provide documentation of the completion of the salvage plan prior to issuance of occupancy permits.	Project sponsor in consultation with planning staff and a qualified architectural historian or historic architect who meets the Secretary of the Interior's Professional Qualification Standards	Prior to removal of character-defining features of/from the UA Stonestown Twin Theater , approval of the salvage plan; prior to issuance of a Final Certificate of Occupancy for completion of the salvage program	Planning Department Preservation Staff	Considered complete upon approval by planning department preservation staff that the salvage plan was implemented by the project sponsor
Mitigation Measure M-CR-1c: Public Interpretive Program. The project sponsor shall facilitate the development of an interpretive program focused on the history of the project site, including an overview of the site history and Native American land acknowledgement, and its identified historic resource. The interpretive program should be developed and implemented by a qualified preservation professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner. The primary goal of the interpretive program is to educate the public about the historic resource and lost character defining features within broader historical, social, and physical landscape contexts. This interpretive plan shall be subject to review and approval by planning department staff. The proposal shall include the proposed format and the publicly accessible location of the interpretive content, as well as high-quality graphics and written narratives. The proposal prepared by the qualified consultant describing the general parameters of the interpretive program shall be approved by planning department staff prior to issuance of demolition permits for the historic resource. The detailed content, media, and other characteristics of such an interpretive program including installation and	Project sponsor in coordination with an architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards	Prior to approval of the demolition permit for the interpretive program proposal and prior to issuance of a Final Certificate of Occupancy for detailed interpretive program, as it applies to the demolition of the UA Stonestown Twin Theater.	Planning Department Preservation Staff	Considered complete when the project sponsor provides documentation of installed interpretive program to planning department preservation staff

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
maintenance schedules for all interpretative components shall be approved by planning department staff prior to issuance of a Final Certificate of Occupancy for the building to be constructed at the location of the historic resource and/or immediately adjacent public open space. The interpretative program shall include but not be limited to the installation of permanent on-site interpretive displays in publicly accessible locations, including the exterior of a building. Historical and current photographs, including some of the photographs required by the Documentation of Historic Resources Mitigation Measure, may be used to illustrate the site's history. Features salvaged from the theater as part of the salvage plan should be considered in the design of the interpretative program.				
SECTION 3.B, TRANSPORTATION AND CIRCULATION				
Mitigation Measure M-TR-1: Construction Coordination Plan. The project sponsor shall prepare a construction coordination plan (plan or plans) for each construction phase or subphase, including to address proposed project or construction activities that result in excavation or temporary occupancy on public or private streets located within the project site as shown in Figure 3.B-9 in the Stonestown Development Project EIR, including 20th Avenue, Buckingham Way, and Streets A through C. The plan(s) shall show potential conflicts with adjacent construction activities, previously approved phased Street Improvement Plans (SIPs), existing City utilities and connections (sewer, water, electrical, fiber, etc.), easements, and pedestrian, bicycle, vehicular, or transit access and circulation to and from the public street network and shall demonstrate how such conflicts will be minimized. The project sponsor shall submit an initial overall draft plan to the planning department for review and approval by public works in consultation with SFMTA, SFPUC, and any other applicable City agency by no later than the first submittal of the first phased Street Improvement Plans (SIP). The project sponsor shall submit an updated draft plan with the first submittal of each subsequent phased SIP that reflects the as-built or current condition of the previous phase(s) and the planned coordination with future phase(s). The project sponsor shall implement the approved plans and update as necessary.	Project Sponsor/ Contractors	Submit prior to each phased Street Improvement Plan (SIP) and updated as necessary during construction	Public Works and Planning Department in consultation with SFMTA, SFPUC, and any other affected City agency	Considered complete upon implementation of the construction coordination plan for all construction phases

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Each plan shall address the requirements of construction within the public right-of-way in the following sections of the SFMTA Regulations for Working in San Francisco Streets (Blue Book) and public works code and other applicable city regulations, including but not limited to: • Blue Book section 3: Traffic Lane Closure Requirements • Blue Book section 5: Sidewalk Closures • Blue Book section 7: Transit Operations • Blue Book section 9: Bicycle Routes • Public Works Code section 2.4.20(b): Contractor Parking Plans • Public Works Code section 724: Temporary Occupancy of Street • Public Works Subdivision Code • Public Works Subdivision Regulations Each plan shall also address how the proposed construction activities within the project site will be coordinated with construction activities within Caltrans' right-of-way.				
Mitigation Measures M-TR-4a Reduce Project Vehicle Trips. The project sponsor shall be responsible for implementing transportation demand management (TDM) measures in a City-approved TDM Plan to limit the number of project- generated vehicle trips to a maximum of 90 percent of the EIR-estimated values of the sum of the phases of project development in the weekday p.m. peak hour (performance standard). *Monitoring and Reporting Plan.* The project sponsor shall retain a qualified transportation consultant approved by the San Francisco Municipal Transportation Agency (SFMTA) or the planning department to begin monitoring vehicle trips in accordance with the approved monitoring and reporting plan. The monitoring shall include counts of the number of vehicles entering and exiting the project site on internal streets at the site boundaries on 19th Street/Winston Drive, 19th Avenue/Street A, 20th Avenue/Eucalyptus Drive, Winston Drive/Buckingham Way, and 20th Avenue/Winston Drive. The counts shall be consistent with the data collection period (e.g., days of week, time of day, months of the year) documented in Appendix C.1 of the EIR. The counts will subtract the baseline (no-project) vehicle trip estimate documented in Appendix C.1 of the EIR to establish the	Project sponsor (including qualified transportation consultant retained by project sponsor)	Annual monitoring, beginning no later than overlap of Phase 1 operations with construction of phase 3, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1 ; Other TDM plan compliance reports are be required per the	Planning department, in consultation with the SFMTA	Monitoring is complete when three consecutive monitoring reports show that the fully built project meets the performance standard or when the project's development agreement expires, whichever is earlier; Other TDM plan compliance reports are considered complete per the

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
project vehicle trip operational (i.e., not construction-related) contribution to the counts. The project sponsor shall begin monitoring when Phase 1 operations overlaps with Phase 3, or at such phase as indicated by the recalculation under Mitigation Measure M-AQ-1j that this performance standard is needed for air quality reductions. The project sponsor shall submit a monitoring and reporting plan to the planning department and SFMTA for review within 30 days of the monitoring, or with TDM Plan monitoring and reporting in a manner consistent with the planning commission's TDM program standards. Thereafter, annual monitoring and reporting plans shall be submitted (referred to as "reporting periods") until three consecutive reporting periods show that the fully built project (i.e., after six phases of the project have been fully constructed) meets the performance standard, or until expiration of the project's development agreement, whichever is earlier. *Adjustments.* If the planning department finds that two consecutive reporting periods demonstrate that the project fails to meet the stated performance standard, the project sponsor shall select and implement additional TDM measures to reduce the number of project-generated vehicle trips to meet the performance standard. These measures could include expansion of measures already included in the project's TDM Plan, other measures identified in the planning commission's TDM program standards Appendix A (as such appendix may be amended by the planning department from time to time) that have not yet been included in the project's approved TDM Plan, or, at the project sponsor's discretion, other measures not included in the planning commission's TDM program standards Appendix A that the planning department and project sponsor agree are likely to reduce peak period driving trips. If additional TDM measures are required because the project fails to meet the stated performance standard for any development phase for two consecutive report periods, the project sponsor shall have 30 months to implement such measures and demonstrate through monitoring a reduction in vehicle trips to meet the performance standard. If the performance standard is not met within 30 months, the project sponsor shall submit to the planning department and SFMTA a memorandum documenting proposed methods of enhancing the effectiveness of the TDM measures and/or additional feasible TDM measures that		Planning Commission's TDM Program Standards		Planning Commission's TDM Program Standards

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
would be implemented by the project sponsor, along with annual monitoring of the project generated vehicle trips to demonstrate their effectiveness in meeting the performance standard until the term of the TDM Plan ends as set forth below. Project sponsor shall have the right to request and pay for a transportation study by a qualified transportation consultant approved by SFMTA or the planning department to confirm the requested measures are effective to achieve the performance standard. The monitoring and reporting plan may be modified by the planning department in consultation with SFMTA to account for transit route or transportation network changes, or major changes to the development program. The modification of the monitoring and reporting plan, however, shall not change the performance standard set forth in this mitigation measure. *Term.* The monitoring and reporting plan shall be terminated upon the earlier of (i) expiration of the project's development agreement, or (ii) three consecutive reporting periods showing that the fully built project has met the performance standard. However, the project sponsor shall continue to be subject to compliance reporting in a manner consistent the planning commission's TDM program standards.				
Mitigation Measure M-TR-4b: Transit Travel Time Reduction Measure. The project sponsor shall coordinate and fund traffic signal coordination with San Francisco Municipal Transportation Agency (SFMTA) to address potential northbound transit delay along 20th Avenue between Eucalyptus Drive and Buckingham Way (S). The project sponsor, in coordination with SFMTA shall be responsible for implementation as outlined in the Transportation Exhibit of the Development Agreement.	SFMTA	During construction of 20th Avenue between Eucalyptus Drive and Buckingham Way (S)	SFMTA	Considered complete upon implementation of traffic signal coordination
Mitigation Measure M-TR-6: Develop a Driveway and Loading Operations Plan (DLOP). The project sponsor shall prepare and submit a DLOP to the planning department in accordance with this Mitigation Measure M-TR-6, and any guidelines issued by the department pursuant to planning code section 155(u)(DLOP code section for certain development projects) ("Guidelines")in consultation with the San Francisco Municipal Transportation Agency (SFMTA). In the event of a conflict between the requirements of this Mitigation Measure M-TR-6 and the Guidelines, the requirements of this Mitigation Measure shall control. The purpose of the DLOP	Project sponsor	Prior to the site or building permit for each building or phase or subphase of project construction	Planning department, in consultation with SFMTA	Upon planning department approval of DLOP; Monitoring is considered complete per the planning'

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
is to reduce potential conflicts between driveway and loading operations, including passenger and freight loading activities, and pedestrians, bicycles, and vehicles, to maximize reliance of on-site loading spaces to accommodate new loading demand, and to ensure that off-site loading activity is considered in the design of the project's new building. Potential conflicts refer to the potential intersection of project-generated vehicle movements with movements of other private street or public right-of-way users in locations like sidewalks, bicycle facilities, transit-only lanes, and mixed-flow travel lanes. The DLOP shall require details requiring the location, quantity, dimensions, and access for off-street and on-street loading facilities and shall prevent vehicle queues. Vehicle queue refers to one or more vehicles waiting to access the project's off-street facility and blocking any portion of any private street or public right-of-way during project operations for: 1. A combined 2 minutes during the peak consecutive 60 minutes or a combined 15 minutes between the hours of 6 a.m. and 10 p.m.; and 2. For at least three 24-hour periods in any consecutive seven-day period. The DLOP shall be developed incrementally, with a stand-alone plan developed and approved for each building or phase or subphase of project construction. A project phase may not begin construction until its DLOP has received Planning approval. The DLOP may also include, but not limited to, the following measures to reduce potential conflicts: • **Locating Loading Facilities Away from Transit Lines:** Locate loading entrances away from internal circulation streets that include Muni bus routes, where feasible, including; 20th Avenue, Winston Drive, Buckingham Way (southern segment between Winston Drive and 20th Avenue). Locate entrances to parcels E1, E3, E4 along side streets rather than along 20th Avenue, or design driveway or loading dock entrance with sufficient storage for vehicles to exit the roadway, to store outside of any bike facilities, and to avoid blocking sidewalks. • **Designing and Managing Trash/Recycling/Compost Collection:** Meet with the appropriate representative from Recology (or other firm) to determine the location and type of trach/recycling/compost bins, frequency of collections,				department's DLOP guidelines

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
and procedures for collection activities, including the location of Recology trucks during collection and indicate such room(s) for each building on the building plans. Identify procedures for collection such that the collection bins are not placed within any sidewalk, bicycle facility, parking lane, or travel lane adjacent to the project site at any time. • **Managing the Loading Docks:** Maintain accurate truck logs to document the time and duration of truck activities. Direct residential and commercial tenants to schedule all move-in and move-out activities and deliveries of large items (e.g., furniture) with the management for their respective building(s). For institutional, retail, and office uses on site, employ attendant(s) for the applicable parking garage and/or loading dock. The attendant would typically be stationed at the applicable driveway to direct vehicles entering and exiting the building and to avoid any safety-related conflicts on the sidewalk during a.m. and p.m. peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the garage and loading dock. • **Installing Audible and/or Visual Warning Devices:** Install audible and/or visible warning devices where the off-street facility interfaces with a private street or public right-of-way to alert other private street or public right-of-way users of vehicles entering or exiting the off-street facility. • **Allowing for Unassisted Delivery Systems:** Design loading dock areas to allow for unassisted delivery systems (i.e., a range of delivery systems that eliminate the need for human intervention at the receiving end), particularly for use when the receive site is not in operation. Examples could include the receiver site providing a key or electronic fob to loading vehicle operators, which enables the loading vehicle operator to deposit the goods inside the business or in a secured area that is separated from the business. The DLOP shall be implemented by the project sponsor in accordance with any guidelines issued by the department pursuant to planning code section 155(u).				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Mitigation Measure M-C-TR-3: Signal Coordination along 19th Avenue. The project sponsor or vertical developer shall pay a fair-share contribution for SFMTA to design and install up to two additional closed-circuit televisions (CCTVs) along Muni routes 28 and 28R southbound at the 19th Avenue/Winston Drive and 19th Avenue/Sloat Boulevard intersections, subject to approval by SFMTA staff. If approved for installation, the project fair-share contribution shall be 17 percent, which is $6,800 in 2022 dollars, of the total cost [with the San Francisco Area consumer price index (CPI) escalation]. The cost of the CCTVs is $40,000 (in 2022 dollars; cost shall be escalated using CPI to year of payment).	SFMTA and Project Sponsor or vertical developer.	Payment shall be rendered after the program's implementation by SFMTA.	SFMTA	Considered complete upon (1) payment to SFMTA for program implementation **OR** (2) SFMTA decision to not implement CCTV program or (3) 20 years after the certification of the EIR if no decision is made by SFMTA regarding the program.
SECTION 3.C, NOISE AND VIBRATION				
Mitigation Measure M-NO-1: Construction Noise Control. The project sponsor shall submit a project-specific construction noise control plan to the environmental review officer (ERO) for approval prior to issuance of any demolition or building permit. The construction noise control plan shall be prepared by a qualified acoustical engineer, with input from the construction contractor, and include measures to reduce construction noise with the target to meet performance standards of 90 dBA 1-hour L_{eq}, 10 dBA above the ambient noise level, nor an interior level of 45 dBA during nighttime hours at noise sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels, and motels). The project sponsor shall ensure that requirements of the construction noise control plan are included in contract specifications. The construction noise control plan shall include specific measures to reduce nighttime construction noise. The construction noise control plan shall include the following measures to the degree feasible, or other equally effective measures, to reduce construction noise levels:	Project sponsor/ qualified acoustical consultant/construction contractor	Prior to issuance of any demolition or building permit	Planning department	Considered complete after receipt of noise monitoring reports and completion of construction activities

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
• Use "quiet" models of air compressors and other stationary equipment where such technology exists; • Use construction equipment with lower noise emission ratings to the extent feasible, particularly for air compressors; • Prohibit the idling of inactive construction equipment for more than 5 minutes; • Muffle and maintain all equipment used on site. All internal combustion engine driven equipment shall be fitted with mufflers that are in good working condition; • Position stationary noise sources, such as temporary generators and pumps, as far from nearby receptors to the extent feasible, within temporary enclosures and shielded by barriers (which could reduce construction noise by as much as 5 dB) or other measures, to the extent feasible; • Avoid placing stationary noise-generating equipment (e.g., generators, compressors) within noise-sensitive buffer areas (as determined by the acoustical consultant) immediately adjacent to neighbors; • Enclose or shield stationary noise sources from neighboring noise-sensitive properties with noise barriers to the extent feasible. To further reduce noise, locate stationary equipment in pit areas or excavated areas, if feasible; • Install temporary barriers, barrier-backed sound curtains, and/or acoustical panels around working powered impact equipment and, if necessary, around the construction area perimeter. When temporary barrier units are joined together, the mating surfaces shall be flush with each other. Gaps between barrier units, and between the bottom edge of the barrier panels and the ground, shall be closed with material that completely closes the gaps, and dense enough to attenuate noise; • Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be "quiet" gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used,				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
which could achieve a reduction of 5 dBA. Quieter equipment shall be used when feasible, such as drills rather than impact equipment; The construction noise control plan shall include specific measures to reduce nighttime construction noise. In addition, the construction noise control plan shall include the following measures for notifying the public of construction activities, complaint procedures, and monitoring of construction noise levels: • Designate a construction manager; • Notify neighboring noise-sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating or nighttime noise activities (i.e., activities that may generate noise levels greater than 90 dBA at noise sensitive receptors) about the estimated duration of the activity; • Post a sign on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction; • Implement a procedure for notifying the planning department of any noise complaints within one week of receiving a complaint; • Develop a list of measures for responding to and tracking complaints pertaining to construction noise; such measures may include the evaluation and implementation of additional noise controls at sensitive receptors; and • Conduct noise monitoring (measurements) at the beginning of major construction phases (e.g., demolition, grading, excavation), during high-intensity construction activities, and during nighttime construction to determine the effectiveness of noise attenuation measures and, if necessary, implement additional noise control measures. Selection of the monitoring locations shall be coordinated between the planning department, construction contractor and, if warranted, affected residential property owners. The program shall be set up to alert the construction manager or other designated person(s) when noise levels exceed allowable limits (10 dBA above established ambient levels). If noise levels are found to exceed applicable noise limits due to construction-related activities, corrective action shall be taken, such as moving specific construction activities if feasible, fixing faulty or poorly operating equipment, and installing portable barriers.				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Mitigation Measure M-NO-4: Noise Analysis and Attenuation.				
Prior to approval of the first building permit, the project sponsor shall submit documentation to the Environmental Review Officer (ERO), demonstrating with reasonable certainty that the proposed approach to the construction of the various building types fixed mechanical equipment (such as heating, ventilation and air conditioning [HVAC] equipment) meets the noise limits specified in section 2909 of the noise ordinance (i.e., a 5 dB increase above the ambient noise level at the property plane for noise from residential uses or an 8 dB increase above the ambient noise level at the property plane for noise from commercial or industrial uses; and interior noise limits of 55 dBA and 45 dBA for daytime and nighttime hours inside any sleeping or living room in a nearby dwelling unit on a residential property assuming windows open, respectively). Acoustical treatments required to meet the noise ordinance may include but are not limited to: • Enclosing noise-generating mechanical equipment; • Installing relatively quiet models of air handlers, exhaust fans, and other mechanical equipment; • Using mufflers or silencers on equipment exhaust fans; • Orienting or shielding equipment to protect noise sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat) to the greatest extent feasible; • Increasing the distance between noise-generating equipment and noise-sensitive receptors; and/or • Placing barriers around the equipment to facilitate the attenuation of noise.	Project sponsor Qualified acoustical engineer or engineering consultant	Prior to the issuance of the first building permit (submittal of documentation of proposed compliance for various building types)	Planning department	Considered complete upon approval of documentation
Emergency Generators. Prior to approval of the first building permit, the property owner shall submit documentation to the ERO, demonstrating with reasonable certainty that project generator(s) do not exceed 75 dBA at the property plane or generator(s) meet the interior noise limits of noise ordinance section 2909(d) (55 dBA and 45 dBA for daytime and nighttime hours assuming windows open, respectively). Acoustical treatments may include, but are not limited to: • Enclosing generator(s);	Property owner and qualified engineer or engineering consultant	Prior to the approval of building permit	Planning department	Considered complete upon approval of documentation

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
• Installing relatively quiet model generator(s); • Orienting or shielding generator(s) to protect noise-sensitive receptors (residences, hospitals, convalescent homes, schools, churches, hotels and motels, and sensitive wildlife habitat) to the greatest extent feasible; • Increasing the distance between generator(s) and noise-sensitive receptors; and/or • Placing barriers around generator(s) to facilitate the attenuation of noise. In addition, all project generator(s) shall be tested only between the hours of 7 a.m. and 8 p.m.	Property owner	During operation for emergency generator testing	Planning department	Considered complete upon approval of documentation
Mitigation Measure M-NO-5: Noise Limits for Outdoor Amplified Sound. • The special-event sponsor shall comply with noise controls and restrictions in the amplified sound event permit. • Speaker systems shall be directed away from the nearest residences to the degree feasible. • Amplified sound equipment use shall be restricted to the hours between 9 a.m. and 10 p.m., unless an amplified sound permit is received from the Entertainment Commission that would outline a different operation window. • Outdoor speaker systems shall be operated such that amplified event noise levels do not exceed 80 dBA at a distance of 100 feet from the equipment or as otherwise required by the permit. • The special-event sponsor shall notify residents within 300 feet of the project site in advance of each special event. The notice shall include the phone number of a contact for noise complaints. • The special-event sponsor shall have a contact person available to respond to noise complaints, monitor noise levels to confirm compliance with permit requirements, and adjust noise levels (if needed).	Special-event sponsor	During operation/ amplified sound events	Entertainment Commission	Ongoing

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
SECTION 3.D, AIR QUALITY				
Mitigation Measure M-AQ-1a: Clean Off-Road Construction Equipment. The project sponsor shall comply with the following: 1. *Engine Requirements.* All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the duration of construction shall meet the following requirements: a. All portable engines, such as generators, shall be electric. If grid electricity is not available, propane or natural gas generators shall be used if feasible. b. Electric engines shall be used for all equipment that is readily available as plug-in or battery-electric equipment, to the maximum extent feasible during each construction phase and activity. Portable equipment shall be powered by grid electricity if available. Electric equipment may include, but is not limited to, concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, and cement and mortar mixers, pressure washers, and pumps. c. Engines that cannot be electrically powered must meet or exceed either U.S. Environmental Protection Agency or California Air Resources Board (air board) Tier 4 Final off-road emission standards, except as provided for below. Exceptions to the requirement for engines that meet Tier 4 Final emission standards shall include only select pieces of specialty equipment, such as those specified below, for which such engines may not be available at the start of a construction phase requiring that equipment. Exceptions may be granted for certain pieces of equipment; examples include bore/drill rigs required for grading/shoring/excavation and for cranes required for building construction. To qualify for an exception, the Project sponsor shall provide the Environmental Review Officer (ERO) with evidence supporting its conclusion that equipment meeting Tier 4 standards is not commercially available and shall use the next cleanest piece of off-road equipment. d. Engines shall be fueled with alternative fuels, including natural gas, propane, hydrogen fuel cell, and electricity, as commercially available and to the maximum extent feasible during each construction phase and activity.	Project sponsor and contractor	Prior to the start of each construction phase or subphase, project sponsor to submit: 1. Construction emissions minimization plan for review and approval, and 2. Signed certification statement	Planning department	Considered complete upon planning department review and acceptance of construction emissions minimization plan, implementation of the plan, and submittal of final report summarizing use of construction equipment pursuant to the plan

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
e. Any other best technology available in the future may be included in the construction emissions minimization plan as substitutions for the above items a–d, provided that the project sponsor submits documentation to the planning department demonstrating that (1) the technology would result in comparable reactive organic gases (ROG) and diesel particulate matter (DPM) emissions reductions and (2) it would not increase other pollutant emissions or exacerbate other impacts, such as noise. This may include new alternative fuels or engine technology for off-road equipment (such as electric or hydrogen fuel cell equipment) that is not available as of 2022. f. The project sponsor shall require the idling time for off-road equipment be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road equipment. Documentation shall be provided to equipment operators in multiple languages (e.g., English, Spanish, Chinese) to remind operators of the 2-minute idling limit. If the majority of the project sponsor's construction staff speak a language other than these, then the documentation shall be provided in that language as well. g. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.				
2. *Waivers.* The ERO may waive the electric engine requirement of above items 1.a and 1.b if electric power is limited or infeasible at the project site. If the ERO grants the waiver, the contractor must submit documentation that the equipment used for onsite power generation meets the requirements of items 1.c and 1.d. a. The ERO may waive the equipment requirements of item 1.c if: (1) the contractor does not have the required type of equipment within its current available inventory or has ordered such equipment at least 60 days in advance and has made a good faith effort to lease or rent such equipment but it is not available; (2) a particular piece of Tier 4 final off-road equipment is technically or financially infeasible; (3) the equipment would not produce desired emissions reduction due to expected operating modes; or (4) there is a compelling emergency need to use off-road equipment that is not Tier 4 Final compliant. If the ERO grants the waiver, the contractor must use the	Project sponsor/ contractor and environmental review officer	If a waiver is requested	Environmental review officer (ERO)	Considered complete upon ERO granting of the waiver

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
next cleanest piece of off-road equipment that is commercially available, or another alternative that results in comparable reductions of ROG and DPM emissions. b. The ERO may waive the alternative fuel requirements of item 1.d if alternative fuels are not commercially available or the use of alternative fuels would negatively affect construction performance, void equipment warranties, or would result in additional ROG or DPM emissions compared to traditional fuels. For purposes of this mitigation measure, "not commercially available" is defined as either: (1) not being used for other large-scale construction projects in the Bay Area occurring at the same time; (2) cannot be obtained without significant delays to critical-path timing of construction; or (3) not available within the larger Bay Area region. The project sponsor must provide sufficient documentation to the ERO when seeking any waiver described above. 3. *Construction Emissions Minimization Plan.* Before starting onsite construction activities, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the ERO for review and approval. The Plan shall state, in reasonable detail, how the contractor will meet the requirements of item 1. a. The Plan shall include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for every construction phase. The description may include but is not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, expected fuel type (e.g., diesel, gasoline, electric, propane, natural gas), and hours of operation. b. The project sponsor shall make the Plan available to the public for review onsite during working hours. The contractor shall post a notice summarizing the Plan. The notice shall also state that the public may ask to inspect the Plan for the project at any time during working hours and shall explain how to request to inspect the Plan. The project sponsor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
4. *Reporting.* After start of construction activities, the project sponsor shall submit annual reports to the ERO documenting compliance with the Plan. Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities, including the start and end dates and duration of each construction phase, and the specific information required in the Plan. The annual reports shall also include documentation supporting the use of waivers if the engine requirements of items 1.a, 1.b, 1.c, and/or 1.d cannot be met.	Project sponsor/ contractor(s)	Annually	Project sponsor to submit reports to the environmental review officer annually	Considered complete upon findings by the ERO that the Plan is being/has been implemented
5. *Certification Statement and Onsite Requirements.* Prior to commencing construction activities, the project sponsor shall certify that all applicable requirements of the Plan have been incorporated into contract specifications.	Project sponsor/ contractor(s)	Prior to each construction phase or subphase, project sponsor to submit signed certification statement	Planning department	Considered complete upon planning department review and acceptance of signed certification statement
Mitigation Measure AQ-1b: Super-Compliant VOC Architectural Coatings during Construction. The project sponsor shall use "super-compliant" volatile organic compound (VOC) architectural coatings during construction for all interior and exterior spaces and shall include this requirement on plans submitted for review to the planning department. The project sponsor shall submit a signed certification statement that this requirement has been incorporated into contract specifications. "Super-Compliant" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113, which requires a limit of 10 grams VOC per liter (http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings).	Project sponsor and contractor	Prior to start of overall construction, project sponsor to submit signed certification statement	Planning department	Considered complete upon planning department review and acceptance of signed certification statement

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Mitigation Measure M-AQ-1c: Clean On-Road Construction Trucks. The project sponsor shall comply with the following for all phases of construction: 1. *Engine Requirements.* a. All on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks, concrete trucks, and vendor trucks) shall be model year 2018 or newer. b. Use alternative fuels as commercially available, such as natural gas, propane, hydrogen fuel cell, and electric vehicles or other fuels where evidence suggests that ROG emissions would be reduced compared to conventional diesel fuel. c. Any other best technology available in the future (i.e., not available as of 2022) may be used in lieu of or in addition to the above items 1.a and 1.b, provided that the project sponsor submits documentation to the ERO demonstrating that (1) the technology would result in comparable ROG emissions reductions and (2) that such measures would not increase other pollutant emissions or result in other impacts, such as noise. This may include new alternative fuels for on-road trucks. d. Require the idling time for on-road vehicles be limited to no more than 2 minutes, except as provided in exceptions to the applicable state regulations regarding idling for on-road vehicles. Documentation shall be provided to truck drivers in multiple languages (e.g., English, Spanish, Chinese) to remind operators of the 2-minute idling limit. If the majority of the project sponsor's construction staff speak a language other than these, then the documentation shall be provided in that language as well.	Project sponsor and contractor	Prior to each phase or subphase of, construction project sponsor to submit: 1. Construction emissions minimization plan for review and approval, and 2. Signed certification statement	Planning department	Considered complete upon planning department review and acceptance of construction emissions minimization plan, implementation of the plan, and submittal of final report summarizing use of on-road trucks pursuant to the plan
2. *Waivers.* The ERO may waive the alternative fuel requirements of item 1.b if alternative fuels are not commercially available or the use of alternative fuels is not technologically feasible, would void truck warranties, or would result in additional ROG or DPM emissions compared to traditional fuels. For purposes of this mitigation measure, "not commercially available" shall be defined as: (1) not being used for other large-scale construction projects in the Bay Area occurring at the same time; (2) cannot be obtained without significant delays to	Project sponsor/ contractor and ERO	If a waiver is requested	ERO	Considered complete upon ERO granting of the waiver

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
critical-path timing of construction; or (3) not available within the larger Bay Area region. 3. *Construction Emissions Minimization Plan.* The Construction Emissions Minimization Plan (Plan), as described in Mitigation Measure M-AQ-1a item 3 above, shall include a description of each general category of on-road trucks required for every construction phase. The description shall also specify the engine model years and fuel type being used (e.g., diesel, electric, natural gas). 4. *Reporting.* The report, as described in Mitigation Measure M-AQ-1a item 4, shall include documentation of compliance with the Plan regarding on-road trucks, in addition to off-road construction equipment. The report shall include documentation supporting the use of waivers if engine requirements under Item 1.a or 1.b cannot be met. 5. *Certification Statement and Onsite Requirements.* The Certification Statement, as described in Mitigation Measure M-AQ-1a item 5 above, shall apply to all applicable requirements for on-road trucks.	Project sponsor/ contractor(s) Project sponsor/ contractor(s)	Annual Prior to each construction phase or subphase, project sponsor to submit signed certification statement	Project sponsor to submit annual reports to the ERO Planning department	Considered complete upon findings by the ERO that the plan is being/has been implemented Considered complete upon planning department review and acceptance of signed certification statement
Mitigation Measure M-AQ-1d: Super-Compliant VOC Architectural Coatings during Operation. The project sponsor or vertical developer shall include in all building rules and/or building operation plans (as applicable, depending on the parcel) a requirement that all future interior and exterior spaces be repainted only with "super-compliant" VOC (i.e., ROG) architectural coatings beyond Bay Area Air Quality Management District (air district) requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). "Super-compliant" coatings refer to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113, which requires a standard of 10 grams VOC per liter or less (http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings). The project sponsor or vertical developer	Project sponsor or vertical developer	Prior to issuance of any certificate of occupancy	Planning department	Considered complete upon planning department review and approval of sponsor documentation

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
shall submit documentation to the ERO demonstrating compliance with this measure.				
Mitigation Measure M-AQ-1e: Best Available Emissions Controls for Stationary Emergency Generators. To reduce emissions of ROG and toxic air contaminants (TACs) associated with operation of the proposed project, the project applicant shall implement the following measures. These features shall be submitted to the ERO for review and approval, and shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City prior to the issuance of any building permits: 1. Permanent stationary emergency generators installed on-site shall have engines that meet or exceed California Air Resources Board Tier 4 Off-Road Compression Ignition Engine Standards (California Code of Regulations Title 13, Section 2423). If the California Air Resources Board adopts future emissions standards that exceed the Tier 4 requirement, the emissions standards resulting in the lowest ROG and DPM emissions shall apply. 2. As non-diesel-fueled emergency generator technology becomes readily available and cost effective in the future, and subject to the review and approval of the City fire department for safety purposes, non-diesel-fueled generators shall be installed in new buildings, provided that alternative fuels used in generators, such as biodiesel, renewable diesel, natural gas, or other biofuels or other non-diesel emergency power systems, are demonstrated to reduce ROG and DPM emissions compared to diesel fuel. 3. For each new diesel backup generator permit submitted to air district for the proposed project, the project applicant shall submit the anticipated location and engine specifications to the planning department ERO for review and approval prior to issuance of a permit for the generator. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment, and any future replacement of the diesel backup generators must be consistent with these emissions specifications. The operator of the facility at which the generator is located shall maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and shall provide this information for review to the planning department within three months of requesting such information.	Project sponsor and contractor	Prior to approval of any building permits authorizing construction or installation of stationary emergency generators, document backup diesel generator specifications on construction permit drawings or other document	Planning department	Considered complete upon planning department review and approval

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Mitigation Measure M-AQ-1f: Promote Use of Green Consumer Products. To reduce ROG emissions associated with the project, the project sponsor shall provide education for residential and commercial tenants concerning green consumer products. Prior to receipt of any certificate of occupancy, the project sponsor shall develop electronic correspondence to be distributed by email annually and upon any new lease signing to residential and/or commercial tenants of each building on the project site that encourages the purchase of consumer products that generate lower than typical VOC emissions. The correspondence shall encourage environmentally preferable purchasing.	Project sponsor	Prior to issuance of any certificate of occupancy	Planning department	Considered complete upon planning department review and approval
Mitigation Measure M-AQ-1g: Operational Truck Emissions Reduction. The project sponsor shall incorporate the following measures into the project design and construction contracts (as applicable) to reduce ROG emissions associated with operational trucks, along with the potential health risk caused by exposure to toxic air contaminants. These features shall be submitted to the planning department ERO for review and approval prior to the issuance of building permits and shall be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. Emissions from project-related diesel trucks shall be reduced by implementing the following measures, if feasible: 1. Equip all truck delivery bays with electrical hook-ups for diesel trucks at loading docks to accommodate plug-in electric truck transport refrigeration units (TRUs) or auxiliary power units during project operations. 2. Provide a notice on the lease to all new tenants or owners of the project or any portion thereof requiring any truck-intensive uses on the site, such as large grocery stores or distribution facilities with their own fleet of trucks, to use TRUs and auxiliary power units that are electric plug-in capable and trucks that use advanced exhaust technology (e.g., hybrid) or alternative fuels. 3. Encourage the use of trucks equipped with diesel TRUs to meet U.S. Environmental Protection Agency Tier 4 emission standards. 4. Prohibit TRUs from operating at loading docks for more than thirty minutes, and post signs at each loading dock presenting this TRU limit.	Project sponsor	Prior to the issuance of any building permits for structures requiring any truck-intensive uses on site	Planning department	Considered complete upon planning department review

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
5. Prohibit trucks from idling for more than two minutes, and post "no idling" signs at the site entry point, at all loading locations, and throughout the project site.				
Mitigation Measure M-AQ-1h: Electric Vehicle Charging Infrastructure. Prior to the issuance of a certificate of occupancy for any project structure with parking, the project applicant shall demonstrate compliance with the 2022 California Green Building Standards (CALGreen Code) Tier 2 voluntary electric vehicle (EV) charging requirements or the mandatory requirements of the most recently adopted version of the City building code, whichever is more stringent. The installation of all EV charging equipment shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City.	Project sponsor and/or vertical developer	Prior to issuance of any certificate of occupancy for buildings that provide parking	Planning department	Considered complete upon planning department review and approval
Mitigation Measure M-AQ-1I: Electric Landscaping Equipment. To reduce ROG emissions associated with the project, the project sponsor shall use only electric landscaping equipment. No landscaping equipment powered by gasoline, diesel, propane, or other fossil fuels shall be used. The project applicant shall incorporate this requirement into the project design and tenant contracts (as applicable).	Project sponsor	Prior to building occupancy	Planning department	Considered complete upon planning department review and approval of sponsor documentation demonstrating compliance
Mitigation Measure M-AQ-1j: Offset Remaining ROG Emissions. The project sponsor, with the oversight of the planning department, shall implement one or more of the following measures to achieve annual reductions or offsets of ROG emissions within the San Francisco Bay Area Air Basin equal to the amount required to reduce total project construction plus operational ROG emissions below 10 tons per year (54 pounds per day on average) after implementation of all other identified mitigation measures as approved through the documentation submitted to the planning department as stipulated in Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a. Based on Table 3.D-9 and Table 3.D-13 in the EIR Section 3.D, Air Quality, the required amount of ROG emission reductions in tons per year is as follows: 0.5 tons for the project and 0.0 tons for the variant in 2030; 2.8 tons for the project and 3.3 tons for the variant in 2031; 4.9 tons for the project	Project sponsor/ contractor(s)	Prior to completion of Phase 1 buildout for the first year when project construction and operational ROG emissions are predicted to first exceed 10 tons per year and 54 lbs/day (2030),	Planning department	Considered complete upon planning department review and acceptance of documentation demonstrating a reduction in ROG emissions or ROG emissions offsets that reduce the project's ROG

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
and 5.3 tons for the variant in 2032; and 4.9 tons for the project and 5.6 tons for the variant each year after full buildout. Alternatively, the project sponsor may submit documentation to the planning department demonstrating that the project has not exceeded the ROG emissions performance standard of 10 tons per year (or 54 pounds per day) for each year or that the required emissions offset is lower than that calculated herein. Such documentation would include a recalculation of the project's ROG emissions from all sources (including the emissions reductions achieved by the project or mitigation measures) using methods generally consistent with those used in the EIR. The following identifies potential mechanisms to offset ROG emissions that exceed the 10 tons per year performance standard. 1. *Directly fund or implement a specific offset project within the San Francisco Bay Area Air Basin.* Emission reduction projects shall occur in the following locations in order of priority to the extent available and feasible: (1) at the project site; (2) off-site within the neighborhood surrounding the project site; (3) within the city and county of San Francisco; and (4) within the San Francisco Bay Area Air Basin. Any offsite emission reduction projects are subject to approval by the City. Such projects could include strategies and control measures such as zero-emission trucks, upgrading locomotives with cleaner engines, replacing existing diesel stationary and standby engines with Tier 4 diesel or cleaner engines, or expanding or installing energy storage systems (e.g., batteries, fuel cells) to replace stationary sources of pollution. Prior to implementing the offset project, it must be approved by the planning department, as consistent with the requirements of this mitigation measure. 2. *Pay mitigation offset fees* to an independent third-party approved by the planning department. The mitigation offset fee, shall fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin. Emission reduction projects shall occur in the following locations in order of priority to the extent available and feasible: (1) at the project site; (2) off-site within the neighborhood surrounding the project site; (3) within the city and county of San Francisco, and (4) within the San Francisco Bay Area Air Basin. The fee will be determined through consultation between the project sponsor and the entity and be based on the type of projects available at the time of the payment.		project sponsor to submit required documentation as specified in the mitigation measure		emissions to below 10 tons per year (54 lbs/day on average) for all construction phases and upon buildout of the project

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
3. *Memorandum of Understanding.* When paying a mitigation offset fee under item 2, the project sponsor shall enter into a memorandum of understanding (MOU) with the entity or other binding agreement. The MOU or agreement shall include details regarding the funds to be paid, the administrative fee, and the timing of the emissions reductions project(s). Acceptance of this fee by the entity shall serve as acknowledgment and a commitment to implement an emissions reduction project(s) within a time frame agreed upon in the MOU or agreement based on the type of project(s) selected, after receipt of the mitigation fee to achieve the emissions reduction objectives specified above.	Project sponsor	Before payment of mitigation offset fee under Item 2 above	Planning department	Considered complete upon planning department review and acceptance of signed MOU
4. *Waivers.* The ERO may waive the requirement to achieve annual reductions or offsets of ROG equal to the amount required to reduce emissions below 10 tons per year (54 pounds per day) after implementation of Mitigation Measures M-AQ-1a through M-AQ-1i and M-TR-4a and if: (1) sufficient ROG emission offset projects within the San Francisco Bay Area Air Basin, as described in item 1, are not available to reduce ROG emissions below 54 pounds per day when they occur during proposed project buildout; or (2) the offset projects or the mitigation offset fees, as described in item 3, are determined to be infeasible as defined under CEQA.	Project sponsor and ERO	If a waiver is requested	Environmental review officer	Considered complete upon granting of the waiver
5. *Offset Verification Report.* The project sponsor shall prepare an Annual Offset Verification Report (Report) as follows: a. *Offset Project Documentation:* Any offset project implemented, or offset fee paid, must result in ROG emission reductions within the San Francisco Bay Area Air Basin that are real, permanent, quantifiable, enforceable, and surplus as defined in the Bay Area Air Quality Management District Regulation 2, Rule 2: New Source Review, sections 2-3-301, 2-2-211, 2-2-603, and 2-2-605. The project sponsor shall certify that each specific emission reduction offset project meets these requirements. Should the project sponsor choose to recalculate the project's annual ROG emissions and ROG offset requirement to achieve the performance standard of 10 tons per year (54 pounds per day on average), the documentation shall quantify the ROG reduction(s) achieved by all offset projects to demonstrate that the gap between the project's mitigated emissions and the significance threshold of 10 tons per year of ROG has been met through the offset project(s). For this	Project sponsor	Prior to completion of Phase 1 buildout for the first year when project construction and operational ROG emissions are predicted to first exceed 10 tons per year and 54 lbs/day (2030), project sponsor to submit required documentation as specified in the	Planning department	Considered complete upon planning department review and acceptance of documentation demonstrating a reduction in ROG emissions or ROG emissions offsets that reduce the project's ROG emissions to below 10 tons per year (54 lbs/day on average) for all

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
option, each annual Offset Verification Report shall demonstrate, based on substantial evidence, that the project has reduced annual ROG emissions below the thresholds of significance of 10 tons per year. The requirement to fund an offset project(s) described in item 1 above and/or to pay mitigation offset fees through the MOU described in items 2 and 3 above shall terminate if the project sponsor is able to demonstrate that the project's operational emissions are less than 10 tons per year (54 pounds per day). b. *Report Submittal.* The report shall be prepared by the project sponsor and submitted to the San Francisco Planning Department for review and verification. Documentation of offset projects and mitigation offset payments, as applicable, shall be provided to the San Francisco Planning Department for review and approval prior to the start of construction for the first year when project ROG emissions are predicted to exceed 10 tons per year, as set forth above If the San Francisco Planning Department determines the report is reasonably accurate, it shall approve the report; otherwise, the planning department shall identify deficiencies and direct the project sponsor to correct and re-submit the report for approval.		mitigation measure		construction phases and upon buildout of the project
SECTION 3.E, WIND				
Mitigation Measure M-WI-1a: Wind Safety Plan. For the active construction areas, the wind consultant may identify those construction sites that would be especially exposed to strong winds. The consultant may recommend construction site safety precautions for times when very strong winds occur on-site or may be expected, such as when high-wind watches or warnings are announced by the National Weather Service. The objective of these precautions shall be to minimize risks and prevent injuries to workers and the public from stacked materials, such as shingles and sheets of plywood, that can be picked up and carried by strong winds, and from temporary signage, siding or roofing, or light structures that could be detached and carried by the wind. As part of construction site safety planning, the project sponsor shall require, as a condition of contracts, that contractors consider all potential wind-related risks to the public from their construction activities and shall develop a wind safety plan to	Project sponsor in coordination with the planning department and a qualified wind consultant	Prior to obtaining a building permit for any project building within the project site proposed to be taller than 85 feet and during construction	Planning department	Considered complete after construction is complete

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
address and control all such risks related to their work. The safety plan could include but not be limited to measures such as: • Warning pedestrians and bicyclists of hazardous winds by placing weighted warning signs; • Identifying alternative pedestrian and bicycle routes that avoid areas likely to be exposed to hazardous winds; and • Installing semi-permanent windscreens or temporary landscaping features (such as shrubs in large planters) that provide some wind sheltering and direct pedestrian and bicycle traffic around hazardous areas.				
Mitigation Measure M-WI-1b: Wind Impact Analysis and Mitigation for Buildings Taller than 85 Feet. Before design review approval, any project building(s) within the project site proposed to be taller than 85 feet, the project sponsor shall undertake an assessment by a qualified wind consultant or the project architect, as approved by the planning department. The proposed buildings tested may incorporate wind baffling features or landscaping. Such features must be tested and presented in a wind report in the order of preference discussed below and shall reduce, to the extent feasible, wind hazards, defined as wind speeds of or exceeding the 26 mph wind hazard criterion for a single hour of the year, as compared to the then-existing conditions; but in no event shall the proposed building(s) result in increases in the number of hours or number of locations of hazard exceedances compared to the full buildout project modeled for the EIR.[1] The proposed building(s) shall be wind tunnel tested, or modeling equivalent, using a model that represents the full buildout conditions as modeled for the EIR, updated to reflect the design of any constructed buildings at the site: 1. *Building Massing.* New buildings and additions to existing buildings shall be shaped to minimize ground-level wind speeds. Examples of these shapes include setbacks, stepped façades, and vertical steps in the massing to help disrupt wind flows. 2. *Wind Baffling or Landscaping Measures on the Building, on the Project Site, or in the Private Right-of-Way.* Wind baffling or landscaping measures shall be	Project sponsor in coordination with the planning department and a qualified wind consultant	Before design review approval, if any, but no later than prior to obtaining a building permit for any project building within the project site proposed to be taller than 85 feet	Planning department	Considered complete after approval of wind impact analysis and implementation of design alterations and/or wind baffling or landscaping features

[1] Rowan Williams Davies & Irwin, Inc. (RWDI), *Stonestown Galleria, San Francisco, CA: Pedestrian Wind Study*, September 21, 2022.

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
included on future buildings and/or on the project site to disrupt vertical wind flows along tower façades and through the project site. Examples of these may include staggered balcony arrangements on main tower façades, screens and canopies attached to the buildings, rounded building corners, covered walkways, colonnades, art, free-standing canopies, or wind screens. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. For purposes of this measure, mitigation is considered infeasible if it would unduly restrict the project's ability to meet the San Francisco General Plan Housing Element goals and the Association of Bay Area Governments' Regional Housing Needs Allocation for San Francisco by maximizing the number of dwelling units throughout the Project site; or by meaningfully reducing the project's ability to meet the objectives of building a mixed-income community, with a wide range of building styles, heights and dwelling unit types; including by resulting in substantial higher operational or capital costs that would impact project feasibility, as determined by the planning department in consultation with the wind consultant. If feasible mitigation measures cannot be identified to eliminate wind hazard exceedances in the context of then-existing partial build-out conditions, off site landscaping and wind baffling measures shall be considered: 3. *Landscaping off the Project Site and/or Wind Baffling Measures in the Public or Private Right-of-Way.* Landscaping and/or wind baffling measures shall be installed in the public or private right-of-way to slow winds along sidewalks and protect places where people walking are expected to gather or linger. Landscaping and/or wind baffling measures shall be installed on the windward side (i.e., the direction from which the wind is blowing) of the areas of concern. Examples of wind baffling measures may include street art to provide a sheltered area for people to walk and free-standing canopies and wind screens in areas where people walking are expected to gather or linger. If landscaping on or off the project site or wind baffling measures in the public or private right-of-way are required as one of the features to mitigate wind impacts, Mitigation Measures M-WI-1c and M-WI-1d shall also apply.				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Mitigation Measure M-WI-1c: Maintenance Plan for Landscaping off the Project Site and Wind Baffling Measures in the Public Right-of-Way. If it is determined infeasible to fully mitigate wind hazards via massing and wind baffling measures on the subject building pursuant to Mitigation Measure M-WI-1b, the project sponsor shall prepare a maintenance plan for review and approval by the planning department to ensure maintenance of the features required pursuant to Mitigation Measure M-WI-1b in perpetuity. The maintenance plan for landscaping or wind baffling measures in the public right-of-way shall also be reviewed and approved by public works.	Project sponsor in coordination with the planning department and a qualified wind consultant	Prior to obtaining a building permit for any building within the project site proposed to be taller than 85 feet and during project operation	Planning department, Public Works, and SFMTA	Ongoing
Mitigation Measure M-WI-1d: Maintenance Plan for Landscaping on the Project Site and Wind Baffling Measures in the Private Right-of-Way. If it is determined infeasible to fully mitigate wind hazards via massing and wind baffling measures on the subject building pursuant to Mitigation Measure M-WI-1b, the project sponsor shall prepare a maintenance plan for review and approval by the planning department to ensure maintenance of the features required pursuant to Mitigation Measure M-WI-1b in perpetuity.	Project sponsor in coordination with the planning department and a qualified wind consultant	Prior to obtaining a building permit for any building within the project site proposed to be taller than 85 feet and during project operation	Planning department	Ongoing
INITIAL STUDY MITIGATION MEASURES AGREED TO BY PROJECT SPONSOR				
SECTION E.3, CULTURAL RESOURCES				
Mitigation Measure M-CR-2: Archeological Monitoring Based on the reasonable potential that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of a qualified archeological consultant having expertise in California prehistoric and urban historical archeology. The archeological consultant shall undertake an archeological monitoring program. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the environmental review officer (ERO) for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of *construction* can be extended beyond	Project sponsor/ archeological consultant at the direction of the Environmental Review Officer (ERO)	Prior to issuance of the first site permit for construction	Project Sponsor shall retain archeological consultant to undertake archeological monitoring program in consultation with ERO	Complete when Project Sponsor retains qualified archeological consultant

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
four weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level potential effects on a significant archeological resource as defined in CEQA Guidelines section 15064.5(a)(c). *Archeological Monitoring Program.* The archeological monitoring program shall minimally include the following provisions: • The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the Archeological Monitoring Plan (AMP) reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the project archeologist shall determine what project activities shall be archeologically monitored. In most cases, any soils disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring in areas determined to be archeologically sensitive because of the potential risk these activities pose to archeological resources and to their depositional context. • The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource. • The archeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with the archeological consultant, determined that project construction activities could have no effects on significant archeological deposits. The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis. Ecofacts are biological or geological objects or deposits related to human activity, but not manufactured by humans. Examples of ecofactual materials include animal bones, charcoal, plants, and pollen that can tell us about past diet or environments.				
Paleoenvironmental Analysis. When a submerged paleosol or when a deposit associated with an historical water source is identified during monitoring, irrespective of whether cultural material is present, samples shall be extracted and processed for dating, flotation for paleobotanical analysis, and other applicable	Project sponsor/ Head Foreman, Environmental Review Officer,	During any soils disturbing activity if a potential archeological	Environmental Review Officer and affiliated Native Americans tribal	Considered complete upon completion of ground-disturbing

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
special analyses pertinent to identification of possible cultural soils and for environmental reconstruction. *Discovery Treatment Determination.* If an intact archeological deposit is encountered, all soils disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/ excavation/pile driving/construction crews and heavy equipment until the deposit is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, present the findings of this assessment to the ERO. If the ERO in consultation with the archeological consultant determines that a significant archeological resource or tribal cultural resource is present and that the resource could be adversely affected by the proposed project, the ERO, in consultation with the project sponsor, shall determine whether preservation of the resource in place is feasible. If so, the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource and the archeological consultant shall prepare an archeological resource preservation plan, which shall be implemented by the project sponsor during construction. The consultant shall submit a draft preservation plan to the planning department for review and approval. If preservation in place is not feasible, a data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible. *Consultation with Descendant Communities.* On discovery of an archeological site associated with descendant Native Americans, the Overseas Chinese, or other potentially interested descendant group an appropriate representative of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to offer recommendations to the ERO regarding	qualified archeological consultant	resource is encountered	representatives, if warranted	activities or upon implementation of any required interpretive program, if warranted

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Archeological Resources Report (ARR) shall be provided to the representative of the descendant group. *Archeological Data Recovery Plan.* An archeological data recovery program shall be conducted in accordance with an Archeological Data Recovery Plan (ADRP) if all three of the following apply: (1) a resource has potential to be significant, (2) preservation in place is not feasible, and (3) the ERO determines that an archeological data recovery program is warranted. The project archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP. The archeological consultant shall prepare a draft ADRP that shall be submitted to the ERO for review and approval. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical. The scope of the ADRP shall include the following elements: • *Field Methods and Procedures.* Descriptions of proposed field strategies, procedures, and operations. • *Cataloguing and Laboratory Analysis.* Description of selected cataloguing system and artifact analysis procedures. • *Discard and Deaccession Policy.* Description of and rationale for field and post-field discard and deaccession policies. • *Security Measures.* Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities. • *Final Report.* Description of proposed report format and distribution of results.				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Curation. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.				
Human Remains and Funerary Objects. The treatment of human remains and funerary objects discovered during any soil-disturbing activity shall comply with applicable State and federal laws. This shall include immediate notification of the Medical Examiner of the City and County of San Francisco. The ERO also shall be notified immediately upon the discovery of human remains. In the event of the Medical Examiner's determination that the human remains are Native American remains, the Medical Examiner shall notify the California State Native American Heritage Commission, which will appoint a Most Likely Descendant (MLD). The MLD will complete his or her inspection of the remains and make recommendations or preferences for treatment within 48 hours of being granted access to the site (Public Resources Code section 5097.98(a)). The project sponsor and ERO shall make all reasonable efforts to develop a Burial Agreement (Agreement) with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and associated or unassociated funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). The Agreement shall take into consideration the appropriate excavation, removal, recordation, scientific analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. If the MLD agrees to scientific analyses of the remains and/or associated or unassociated funerary objects, the archeological consultant shall retain possession of the remains and associated or unassociated funerary objects until completion of any such analyses, after which the remains and associated or unassociated funerary objects shall be reinterred or curated as specified in the Agreement. The landowner may consult with the project archeologist and project sponsor and shall consult with the MLD and CEQA lead agency on preservation in place or recovery of the remains and any scientific treatment alternatives. The landowner shall then make all reasonable efforts to develop an Agreement with the MLD, as expeditiously as possible, for the treatment and disposition, with appropriate dignity, of human remains and funerary objects (as detailed in CEQA Guidelines section 15064.5(d)). Per Public Resources Code (PRC) section 5097.98(b)(1), the	Project sponsor, contractor, Planning Department's archeologist or archaeological consultant, and Environmental Review Officer	Throughout the duration of ground-disturbing activities	Project sponsor to notify Environmental Review Officer, Coroner, and, if applicable, NAHC of any discovery of human remains	Considered complete upon completion of ground-disturbing activities

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Agreement shall address and take into consideration, as applicable and to the degree consistent with the wishes of the MLD, the appropriate excavation, removal, recordation, scientific analysis, custodianship prior to reinterment or curation, and final disposition of the human remains and funerary objects. If the MLD agrees to scientific analyses of the remains and/or funerary objects, the archeological consultant shall retain possession of the remains and funerary objects until completion of any such analyses, after which the remains and funerary objects shall be reinterred or curated as specified in the Agreement. Both parties are expected to make a concerted and good faith effort to arrive at an Agreement, consistent with the provisions of PRC section 5097.98. However, if the landowner and the MLD are unable to reach an Agreement, the landowner, ERO, and project sponsor shall ensure that the remains and/or mortuary materials are stored securely and respectfully until they can be reinterred on the property, with appropriate dignity, in a location not subject to further or future subsurface disturbance, consistent with state law. Treatment of historic-period human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity, additionally, shall follow protocols laid out in the project's Archeological treatment documents, and in any related agreement established between the project sponsor, Medical Examiner, and ERO.				
Cultural Resources Public Interpretation Plan. The project archeological consultant shall submit a Cultural Resources Public Interpretation Plan (CRPIP) if a significant archeological resource is discovered during a project. As directed by the ERO, a qualified design professional with demonstrated experience in displaying information and graphics to the public in a visually interesting manner, local artists, or community group may also be required to assist the project archeological consultant in preparation of the CRPIP. If the resource to be interpreted is a tribal cultural resource, the CRPIP shall be prepared in consultation with and developed with the participation of Ohlone tribal representatives. The CRPIP shall describe the interpretive product(s), locations or distribution of interpretive materials or displays, the proposed content and materials, the producers or artists of the displays or installation, and a long-term maintenance program. The CRPIP shall be sent to the ERO for review and approval. The CRPIP shall be implemented prior to occupancy of the project.	Archeological consultant	Prior to the issuance of the last certificate of occupancy for the proposed project in the disturbance area where the finding was made.	Environmental Review Officer	Considered complete upon submittal to Environmental Review Officer and other repositories identified in mitigation measure of Final Archeological Resources Report

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
Archeological Resources Report. Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO. The archeological consultant shall submit a draft Archeological Resources Report (ARR) to the ERO that evaluates the historical significance of any discovered archeological resource, describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken, and if applicable, discusses curation arrangements. Formal site recordation forms (CA DPR 523 series) shall be attached to the ARR as an appendix. Once approved by the ERO, copies of the ARR shall be distributed as follows: California Historical Resources Information System, Northwest Information Center (NWIC) shall receive one copy and the ERO shall receive a copy of the transmittal of the approved ARR to the NWIC. The environmental planning division of the planning department shall receive one bound hardcopy of the ARR. Digital files that shall be submitted to the environmental division include an unlocked, searchable PDF version of the ARR, GIS shapefiles of the site and feature locations, any formal site recordation forms (CA DPR 523 series), and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. The PDF ARR, GIS files, recordation forms, and/or nomination documentation should be submitted via USB or other stable storage device. If a descendant group was consulted during archeological treatment, a PDF of the ARR shall be provided to the representative of the descendant group. *Curation.* Significant archeological collections and paleoenvironmental samples of future research value shall be permanently curated at an established curatorial facility. The facility shall be selected in consultation with the ERO. Upon submittal of the collection for curation the sponsor or archeologist shall provide a copy of the signed curatorial agreement to the ERO.				

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
SECTION E.15, GEOLOGY AND SOILS				
Mitigation Measure M-GE-6: Inadvertent Discovery of Paleontological Resources during Construction				
Worker Awareness Training – Prior to commencing construction, and ongoing throughout ground-disturbing activities (e.g., excavation, utility installation), the project sponsor and/or their designee shall engage a qualified paleontologist meeting the standards specified by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology 2010) to train all project construction workers regarding how to recognize paleontological resources and on the contents of the paleontological resources alert sheet, as provided by the planning department. The paleontological resources alert sheet shall be prominently displayed at the construction site during ground-disturbing activities for reference regarding potential paleontological resources. In addition, the paleontologist shall inform the project sponsor, contractor, and construction personnel of the immediate stop work procedures and other procedures to be followed if bones or other potential fossils are unearthed at the project site. Should new workers that will be involved in ground-disturbing construction activities begin employment after the initial training has occurred, the construction supervisor shall ensure that they receive the worker awareness training as described above. The paleontologist shall complete the standard form/affidavit confirming the timing of the worker awareness training and submit it to the environmental review officer (ERO). The affidavit shall confirm the project's location, the date of training, the location of the informational handout display, and the number of participants. The affidavit shall be transmitted to the ERO within five business days of conducting the training.	Project sponsor/ contractor(s)	Prior to and during ground disturbing activities	Project sponsor and contractor(s) shall distribute an alert sheet and submit a confirmation letter to the Environmental Review Officer each time a training session is held. The letter shall be submitted within five (5) business days of conducting a training session	Considered complete upon end of ground disturbing activities
Paleontological Resource Discoveries – In the event of the discovery of an unanticipated paleontological resource during project construction, ground-disturbing activities shall temporarily be halted within 25 feet of the find until the discovery is examined by a qualified paleontologist as recommended by the Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 2010) and best practices in mitigation paleontology (Murphey et al. 2019). The paleontologist shall consult the ERO. Work within the sensitive area shall resume	Project sponsor, qualified paleontologist, and construction contractor, at the direction of the Environmental Review Officer	In the event of the discovery of an unanticipated paleontological resource during construction	If necessary, the project sponsor and a qualified paleontologist shall submit a Paleontological Evaluation Letter or Paleontological	Considered complete upon end of ground disturbing activities or, if necessary, approval of a Paleontological

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
only when deemed appropriate by the qualified paleontologist in consultation with the ERO. The qualified paleontologist shall determine (1) if the discovery is scientifically significant; (2) the necessity for involving other responsible or resource agencies and stakeholders, if required or determined applicable; and (3) methods for resource recovery. If a paleontological resource assessment results in a determination that the resource is not scientifically important, this conclusion shall be documented in a paleontological evaluation letter to demonstrate compliance with applicable statutory requirements (e.g., Federal Antiquities Act of 1906, CEQA Guidelines section 15064.5, Public Resources Code chapter 17, section 5097.5, Paleontological Resources Preservation Act 2009). The paleontological evaluation letter shall be submitted to the ERO for review within 30 calendar days of the discovery. If in consultation with the ERO the qualified paleontologist determines that a paleontological resource is of scientific importance, the qualified paleontologist shall make a recommendation as to what action, if any, is warranted and prepare a paleontological mitigation program. The mitigation program shall include measures to fully document the resource of scientific importance. The qualified paleontologist shall submit the mitigation program to the ERO for review and approval within ten business days of the discovery. Upon approval by the ERO, ground-disturbing activities in the project area shall resume and be monitored as determined by the qualified paleontologist for the duration of such activities. The mitigation program shall include (1) procedures for construction monitoring at the project site; (2) fossil preparation and identification procedures; (3) curation of paleontological resources of scientific importance into an appropriate repository; and (4) preparation of a Paleontological Resources Report (report or paleontology report) at the conclusion of ground-disturbing activities. The report shall include dates of field work, results of monitoring, fossil identifications to the lowest possible taxonomic level, analysis of the fossil collection, a discussion of the scientific significance of the fossil collection, conclusions, locality forms, an itemized list of specimens, and a repository receipt from the curation facility. The project sponsor shall be responsible for the preparation and implementation of the mitigation program, in addition to any costs necessary to prepare and identify collected fossils, and for any curation fees charged by the paleontological			Resources Report to the Environmental Review Officer	Evaluation Letter or Paleontological Resources Report by the Environmental Review Officer

Adopted Mitigation Measures	MONITORING AND REPORTING PROGRAM[a]			
	Implementation Responsibility	Mitigation Schedule	Monitoring/Reporting Responsibility	Monitoring Actions/ Completion Criteria
repository. The paleontology report shall be submitted to the ERO for review within 30 business days from conclusion of ground-disturbing activities, or as negotiated following consultation with the ERO.				

NOTES:

[a] Definitions of MMRP Column Headings:

- *Adopted Mitigation Measures:* Full text of the mitigation measure(s) copied verbatim from the final CEQA document.
- *Implementation Responsibility:* Entity who is responsible for implementing the mitigation measure. In most cases this is the project sponsor and/or project's sponsor's contractor/consultant and at times under the direction of the planning department.
- *Mitigation Schedule:* Identifies milestones for when the actions in the mitigation measure need to be implemented.
- *Monitoring/Reporting Responsibility:* Identifies who is responsible for monitoring compliance with the mitigation measure and any reporting responsibilities. In most cases it is the planning department who is responsible for monitoring compliance with the mitigation measure. If a department or agency other than the planning department is identified as responsible for monitoring, there should be an expressed agreement between the planning department and that other department/agency. In most cases the project sponsor, their contractor, or consultant are responsible for any reporting requirements.
- *Monitoring Actions/Completion Criteria:* Identifies the milestone at which the mitigation measure is considered complete. This may also identify requirements for verifying compliance.