

Overview of Treasure Island and Yerba Buena Island Electricity Service

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San Francisco
Water Power Sewer

Services of the San Francisco Public Utilities Commission



Presentation Overview

I. Background: TI/YBI Electrical System

II. SFPUC's Role

III. Completed Improvements

IV. Future Plans



TI/YBI Electricity System

- 1997 Naval Station Treasure Island closes
 - City and Navy enter into caretaker agreement, including operating and maintaining utility infrastructure
 - Upon its formation, TIDA assumes caretaker responsibilities contracting with the SFPUC to operate utilities
- 2015 Navy transfers ownership of ~50% of the island to TIDA, including utilities on that property and all off-island utility assets
- 2016 New infrastructure construction commences
- 2021 SFPUC energizes equipment in new switchyard
- 2023 New electrical distribution facilities in the first two subphases are energized
- 2024 SFPUC accepts ownership of new electrical facilities in first two subphase areas
 - Connected users become SFPUC utility customers
 - Users connected to Legacy infrastructure remain TIDA customers

Power Supply

- Electricity is delivered to the island through the Davis Substation which is owned and operated by the Port of Oakland.
- Two submarine cables connect the island to the Davis Substation, which then feeds the distribution grid.



Power Infrastructure Ownership

- New facilities built out for SFPUC acceptance through development
- TIDA continues to own the legacy electrical. Properties in these areas are TIDA utility customers.

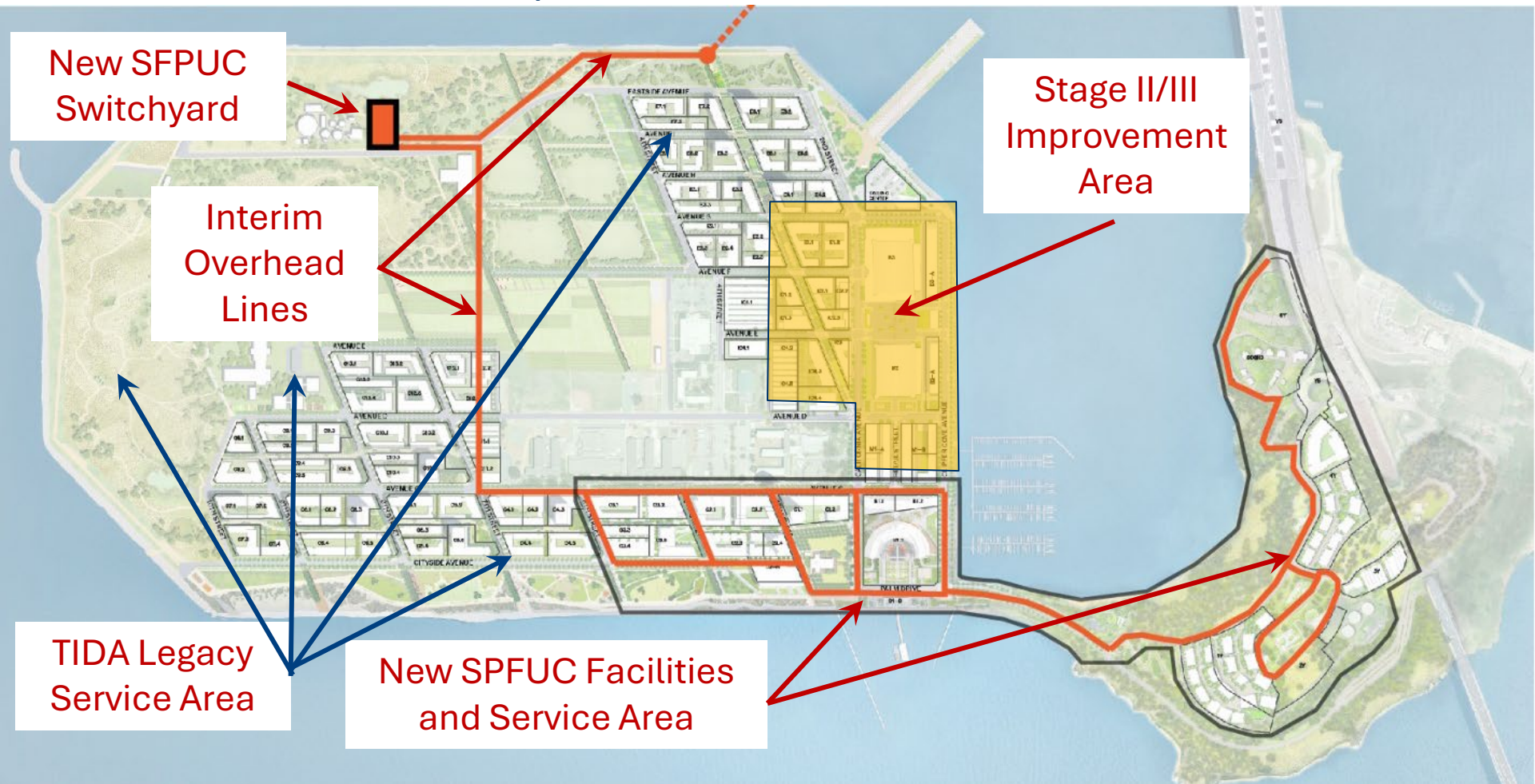
New SFPUC
Switchyard

Interim
Overhead
Lines

Stage II/III
Improvement
Area

TIDA Legacy
Service Area

New SFPUC Facilities
and Service Area





SFPUC Role on Treasure Island & Yerba Buena Island

- SFPUC supplies the electricity used by all residents and businesses on the islands
- TIDA continues to contract with the SFPUC to operate and maintain the legacy electric system. For the legacy system, the SFPUC:
 - Oversees operations of the system
 - Performs ongoing maintenance, including repairs
 - Responds to and tracks power outages
 - Recommends system improvements subject to TIDA authorization and funding constraints
- SFPUC has accepted ownership of new infrastructure in the first two subphase areas
 - Properties in these areas are direct customers of the SFPUC Power Enterprise

Legacy Electricity System Challenges

- Electrical infrastructure has a typical lifespan of 25-30 years
- Legacy Navy infrastructure on Treasure Island and Yerba Buena Island ranges in age from 40-50 years or more
- Because of the age and design of the Navy system, the Legacy network has historically been subject to frequent outages impacting the entirety of Treasure Island and Yerba Buena Island
 - Diagnostic and repair times were also extended

Addressing Legacy System Challenges

New Switchyard and Switchgear

New switchyard facilities have stabilized system performance, isolating certain fault events, reducing impacts to the residential neighborhood, and preventing island-wide outages



Addressing Legacy System Challenges

Additionally, TIDA has authorized a series of improvements to the Legacy electrical system in recent years

Goal(s) of improvements:

- ✓ Increase system reliability
- ✓ Reduce the frequency and duration of outages
- ✓ Isolate outages to only part of the island reducing the area of impact
- ✓ Reduce the number of outages caused by temporary events like bird strikes or fallen tree limbs.
- ✓ Reduce time it takes to find the source of an outage, improving response time for power restoration

Completed Improvements

New Overhead Line

Installed and constructed a new overhead line from the switchyard, increasing the reliability of the main line serving both islands

Fault Indicators and Reclosers

Installed numerous fault indicators and reclosers throughout the island, which assist crews in determining the location of a fault and limiting outages to just a portion of the system

Replacement of Damaged Crossarms and Transformers

Replace damaged crossarms and transformers identified during system-wide inspections

Completed Improvements

Retired Outdated Equipment

Retired old, outdated equipment such as the Clipper Cove submarine cable and legacy switching equipment

Update Relay Settings

Adjusted the relays at the Port of Oakland Substation to allow the circuits and reclosers to isolate a fault before it results in a system-wide outage.

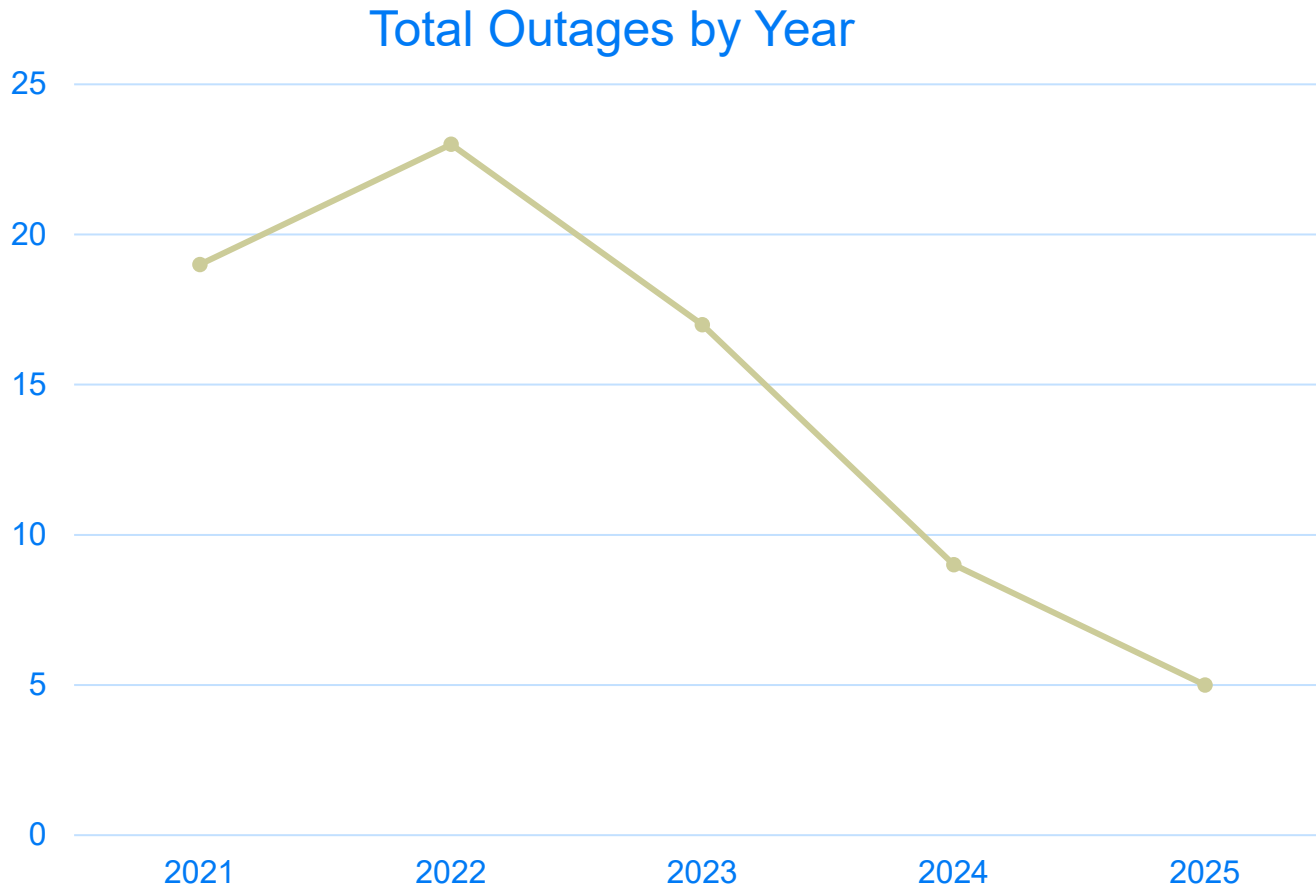
Vegetation Management

Regular monitoring and trimming of trees on Treasure Island to maintain clearance around overhead lines and other infrastructure

Bird Guards

Consistently analyze overhead system bird strike events and install additional bird guards on vulnerable overhead lines

Total Outages by Year



Outages have decreased in both frequency and number of effected customers

Power Outage Response

- Outages on Treasure Island and Yerba Buena Island are typically reported via 3-1-1
- SFPUC crews are deployed to investigate and make repairs as needed
- An i-Info email alert is typically issued to inform various entities of the outage, including TIDA and SF Department of Emergency Management (DEM)
- Notification to TI/YBI residents follows the issuance of the i-Info alert

Next Steps (Near-term)

Build a New Electric "Express" Feeder

TIDA has authorized SFPUC Power recommendation to improve legacy housing service reliability by constructing an express feeder connecting the legacy housing area to the TI switchyard further isolating the housing area from the balance of the legacy system

Reinforce Gateview Circuits

TIDA has authorized funding to replace parts of the legacy underground circuits on Gateview; which has been the source and area impacted by recent outages

Ongoing SFPUC Actions

Monitoring Protective Devices

Monitor the protective device responses and performance to further mitigate system-wide outages

Continuous Inspections

Perform continuous inspections to mitigate potential system failures, including regular tree trimming or removal

Review and Recommend

Identify additional improvement opportunities and make recommendations to TIDA



Questions?

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