Surveillance Impact Report

Virtual Vehicle Queuing System

Airport

As required by San Francisco Administrative Code, Section 19B, departments must submit a Surveillance Impact Report for each surveillance technology to the Committee on Information Technology ("COIT") and the Board of Supervisors.

The Surveillance Impact Report details the benefits, costs, and potential impacts associated with the Department's use of the Virtual Vehicle Queuing system (specifically, Transport Network Company Virtual Queue (TNCvq)) technology.

DESCRIPTION OF THE TECHNOLOGY

The Department's mission is the following:

Delivering an airport experience where people and our planet come first.

In line with its mission, the Department uses Transport Network Company Virtual Queue (TNCvq) technology in the following way: The TNCvq technology works with the perimeter, or "geofence," around the Airport using geographic coordinates. The TNC driver's commercial driving data is collected after entering the Airport's geo-fence for business purposes, not for personal driving activity. No passenger information is included. Fines can be levied against TNCs for driver activities such as exceeding staging lot wait times.

The TNCvq application will use software (from QTrac and Airport Developed) to provide the Airport with a text message–based Virtual Queue system to manage staging lot demand for TNC drivers. TNCvq will enable drivers to remotely request access to the Airport's staging lots and receive real-time updates on their queue status via SMS on their mobile devices. The system operates entirely via SMS, allowing drivers to join the queue, receive updates, and confirm entry using a smartphone.

The Department shall use Transport Network Company Virtual Queue (TNCvq) technology only for the following authorized purposes:

Authorized Use(s):

- Use software (from QTrac and Airport developed) to provide the Airport with a text message–based virtual queue system to manage TNC driver staging lot supply.
- Assist with overall ground transportation planning at the Airport.
– Assist with monitoring Transportation Network Company (TNC) drivers' compliance with the conditions of their operating permit and the Airport's Rules and Regulations., including issuing citations, suspensions, and prohibitions from service.

Surveillance Oversight Review Dates

COIT Review: TBD

Board of Supervisors Review: TBD

- As part of the ground transportation management and reporting process, the TNCvq system will collect, process, and retain data, including Personally Identifying Information (PII) of the TNC drivers.
- Ensure that only authorized and approved drivers and vehicles are allowed to service passengers at SFO, including verifying drivers' identity.

Prohibited use cases include any uses not stated in the Authorized Use Case section.

Further, processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, gender, gender identity, disability status, or an individual person's sex life or sexual orientation, and the processing of genetic data and/or biometric data for the purpose of uniquely identifying an individual person shall be prohibited.

Airport technology may be deployed in the following locations, based on use case:

TNCvq is located in the cloud of the third-party platform that initially receives the data from the TNC drivers. The Airport's on-premises systems are comprised of a private cloud and on-premises hardware.

Technology Details

The following is a product description: The Transportation Network Company Virtual Queue (TNCvq) is a text message–based Virtual Queue system developed by San Francisco International Airport (SFO) to manage Transportation Network Company (TNC) driver staging demand. TNCvq enables drivers to remotely request access to the Airport's staging lots and receive real-time updates on their queue status via SMS. The system operates entirely via SMS, allowing drivers to join the queue, receive updates, and confirm entry using a basic mobile phone—no app or smartphone required.

Purpose

The goal of TNCvq is to reduce congestion, improve operational efficiency, and ensure fair access to SFO's limited staging lot space.

Objective

- Eliminate TNC drivers staging on roadways near the airport.
- Reduce TNC vehicle oversupply and improve operational efficiency.
- Reclaim staging lot 3 for revenue-generating public parking; leaving only Staging lot 1 and 2 with a total of 182 spaces.
- Reduce the number of violations committed by TNC drivers.

Since each airport is unique with distinctive ground transportation challenges, the ABCT technology supports custom reporting features to fulfill each airport's unique need.

A. How It Works

Transportation Network Company Virtual Queue (TNCvq) technology supports the Department's mission and provides important operational value in the following ways:

San Francisco International Airport (SFO) seeks to implement TNCvq, a Virtual Queue system designed to manage the high demand for Transportation Network Company (TNC) staging lot access. This system enables drivers to request entry and receive real-time updates via SMS and a web browser, eliminating the need for a dedicated app. The primary objectives are to: reduce roadway congestion, enhance operational efficiency, and ensure equitable access to the airport's limited staging lot capacity. With only 350 total staging spaces, 150 of which are revenue-generating at Lot DD, frequent lot closures due to oversupply have led to significant traffic congestion, safety concerns on South Airport Blvd and South McDonnell Road, and operational disruptions. TNCvq aims to eliminate illegal staging on nearby roadways, reduce driver conflicts and citations, and support the reclamation of Staging Lot 3 for public parking revenue. TNCvq is expected to streamline TNC operations, improve safety, and unlock valuable real estate for revenue-generating uses.
As part of the TNCvq, SFO has implemented a dedicated driver registration portal to ensure secure and efficient management of TNC operations. Drivers are required to submit key information, including: full legal name, selfie photo, license plate number, vehicle make, model, and color, TNC profile screenshot, TNC Placard information, phone number, and email address—through this portal. This data is used to verify each driver's identity and affiliation with an authorized Transportation Network Company, match vehicles to registered users, and enable real-time communication via SMS. The registration portal is a critical component of the VQ system, supporting accurate queue management, reducing unauthorized access to staging lots, and enhancing enforcement and auditing capabilities. Additionally, the collected data allows SFO to monitor dwell time within the staging lots and issue citations to drivers who exceed the 60-minute maximum stay, helping to ensure fair access and efficient lot turnover.

SFO keeps all the data for historical analysis.

All data collected or processed by the *TNCvq* will be handled or stored by an outside provider or third-party vendor on an ongoing basis. Specifically, data will be handled by Amazon Web Services to ensure the Department may continue to use the technology.

IMPACT ASSESSMENT

The impact assessment addresses the conditions for surveillance technology approval, as outlined by the Standards of Approval in San Francisco Administrative Code, Section 19B:

1. The benefits of the surveillance technology outweigh the costs.
2. The Department's Policy safeguards civil liberties and civil rights.
3. The uses and deployments of the surveillance technology are not based upon discriminatory or viewpoint-based factors and do not have a disparate impact on any community or Protected Class.

The Department's use of the surveillance technology is intended to support and benefit the residents of San Francisco while minimizing and mitigating all costs and potential civil rights and liberties impacts of residents.

A. Benefits

The Department's use of Transportation Network Company Virtual Queue (TNCvq) has the following benefits for the residents of the City and County of San Francisco:

	Benefit	Description
☐	Education	
X	Community Development	Promotes equitable distribution of and access to transportation by managing TNC flow and availability fairly across all drivers.
☐	Health	
X	Environment	Reduces traffic congestion and idling on SFO roadways, which helps lower vehicle emissions and improves air quality in surrounding communities.
☐	Criminal Justice	
X	Jobs	Supports employment opportunities for TNC drivers and enhances operational efficiency for TNC Company; also optimizes resource allocation for SFO's Ground Transportation Unit (GTU).
☐	Housing	
X	Public Safety	Minimizes the risk of fraud, unauthorized access, and unethical business practices by verifying driver credentials and enforcing compliance through the Virtual Queue system.
☐	Other:	Aligns with growing passenger demand for app-based, on-demand transportation services, improving the overall customer experience at SFO.

B. Civil Rights Impacts and Safeguards

The Department has considered the potential impacts and has identified the technical, administrative, and physical protections as mitigating measures:

SFO strives to mitigate all potential civil rights impacts through responsible technology and associated data use policies and procedures, and intends to use aforementioned data exclusively for aforementioned authorized use cases. All other uses are expressly prohibited.

Specifically, SFO strives to support the civil liberties and freedoms of all persons and strictly prohibits the use of location data to identify or track individual users or customers of the City's Airport transportation system.

To set San Francisco residents' expectation of privacy and avoid resident loss of trust, public notice regarding SFO's receipt and use of data regarding TNC drivers' activity at the Airport is provided on the SFO Connect website (sfoconnect.com).

The SFO implements technical, physical, and administrative safeguards to mitigate potential misuse, abuse, or breach of collected data. Collected data is stored on a secure network employing firewalls and segmentation and in a restricted, password-protected system with MFA that can only be accessed by authorized personnel for authorized uses. Further, server rooms containing database systems are protected by physical access restrictions (i.e. badge access, locked door). The Department also follows data aggregation policies to ensure individuals' data is adequately protected, including the encryption of data at rest and in transit where necessary.

To avoid discrimination and other potential civil rights impacts, data access is granted only to authorized users for authorized uses. Any Department personnel requesting access to the data must first submit a request to the Data Steward, specifically for the location data. The Data Steward obtains the user's requirements for data and its format for an authorized use. The Data Steward confirms end user authorization and signals technical staff to retrieve and send data to the requestor through a secure channel if necessary.

The administrative safeguards are the following: To protect the individual identities, travel preferences, and trip patterns and behaviors of individuals, any data released to the public through Sunshine requests or Public Records do not contain personal identifying information. Released datasets are limited to the requestor's specific request.

The technical safeguards are the following: Collected data is stored on a secure network in a restricted, password-protected system that can only be accessed by authorized personnel for authorized uses. The Department also follows data aggregation policies to ensure individuals' data is adequately protected.

The physical safeguards are the following: Specifically, server rooms containing database systems are protected by physical access restrictions (i.e. badge access, locked door).

C. Fiscal Analysis of Costs and Benefits

The Department's use of *Transportation Network Company Virtual Queue (TNCvq)* yields the following business and operations benefits:

	Benefit	Description
X	Financial Savings	Eliminates the need to hire additional staff to manually monitor and manage TNC activities. Additionally, by reducing the size of TNC staging areas, the Airport can repurpose space for revenue-generating public parking.
	Time Savings	
	Staff Safety	Staff safety is indirectly supported by reducing the need for physical monitoring in congested areas, lowering exposure to traffic hazards.)
X	Data Quality	Human error is reduced; information is legible and can be easily sorted and summarized by computers; information can be paired with analytical analysis; data will likely reduce handwritten records; and data will increase the number of records as they are automatically created and sent.
X	Other: Enforcement of non-compliant drivers	Enhances enforcement capabilities by enabling the Airport (GTU and SFPD-AB) to identify and cite TNC drivers who exceed curbside staging times or operate outside designated areas, in accordance with TNC contracts.
X	Other: Public Safety	Improves public safety by eliminating unauthorized TNC staging on roadways and reducing vehicle oversupply on Airport property, leading to smoother traffic flow and fewer safety incidents.

The fiscal cost, such as initial purchase, personnel and other ongoing costs, include:

Number of FTE (new & existing)	*4 (IT staff: driver reg. portal development, maintenance)* *2 Landside Operations staff* *3 Ground Transportation Unit staff*
Classification	*Principal Information Systems Engineer (1044)* *Principal Business Analyst (1054)* *Journey Information Systems Engineer (1042)* *Assistant Information Systems Engineer (1041)* *0933 Manager V,* *1825 Principal Administrative Analyst II,* *0923 Manager II,* *1842 Management Assistant,* *9236 Airport Ground Transportation Technician*

	Annual Cost	***One-Time Cost***
Total Salary & Fringe	*$50,016 [1042 x 2] +$578,838*	*$173,539 +$602,628*
Software	*$438,600.04*	*$438,600.04*
Hardware/Equipment	*$0.00*	*$15,628.57 (iPads)*
Professional Services	*$0.00*	*$0.00*
Training	*$0.00*	*$0.00*
Other	*$0.00*	*$0.00*
Total Cost	***$1,067,454.04***	***$776,167***

IT Salary Breakdown:

(2) 1044: 300 hours x Step 10 ($99.98): $59,988

(2) 1042: 300 hours x Step 10 ($83.36): $50,016

(1) 1041: 300 hours x Step 10 ($75.72): $22,716

(1) 1054: 450 hours x Step 10 ($90.71): $40,819

Total: $173,539

Landside Operations Salary Breakdown:

(1) 1825: Annual Salary: $187,824

(1) 0933: Annual Salary: $230,308

Ground Transportation Unit Salary Breakdown:

(1) 0923: Annual Salary: $184,496

(1) 1842: Annual Salary: $116,948

(1) 9236: Annual Salary: $89,570

One-time costs - $602,628

Annual costs - $ 578,838

The Department funds its use and maintenance of the surveillance technology through operating funds and cost recovery through Permit Fees.

COMPARISON TO OTHER JURISDICTIONS

The Virtual Vehicle Queuing system (specifically, the Transportation Network Company Virtual Queue (TNCvq)) technology is currently not utilized by other Airports.