Presidio Long Range Transportation Implementation Strategy (LoTIS)

Prepared for:
Presidio Trust

October 2021

SF20-1126

FEHR PEERS

Presidio Trust

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01 Introduction

01INTRODUCTION

LOTIS PURPOSE

As the Trust plans for occupancy of the remaining buildings, program development, recreational facilities and park amenities, the demand for transportation services will increase. The Presidio Long Range Transportation Implementation Strategy (LoTIS) will guide the development and investment in the Presidio Trust's transportation services over the next three decades.

Planning Context

The LoTIS considers the context of Bay Area regional housing and transportation plans and reflects the Presidio Trust's Strategic Goals.

Goals and Objectives

The Presidio Trust has identified three Strategic Goals in support of its mission and vision. Transportation objectives were further identified in pursuit of each of the three goals, as outlined in **Table 1**.

Table 1: Presidio Trust Strategic Goals

Goal	Transportation Objectives
People As a national park, the Presidio will be visited and loved by all	• Make it convenient to get to the Presidio's most popular destinations without a car. • Enhance the experience of traveling by foot, bike, or transit within the park.
Planet The Presidio Trust will be a model of environmental stewardship	• Reduce the GHG emissions from trips to/from and within the Presidio. • Minimize environmental impact of transportation-related infrastructure.
Performance The Presidio Trust will exemplify operational excellence in public service	• Maintain the existing network and transit infrastructure in a state of good repair. • Eliminate serious injuries from road collisions and tripping hazards. • Reduce net cost to Trust of transportation network and services.

Companion Planning Efforts

The LoTIS provides an in-depth look ahead at the transportation infrastructure required to meet the vision of the Presidio Long Range Implementation Strategy (LoRIS). The LoRIS prioritizes building rehabilitation and development and park infrastructure, including transportation and utility infrastructure. Similarly, the Long Range Utilities Implementation Strategy (LoUIS) provides a more detailed review of park utility infrastructure.

Covid Uncertainty

Due to the ongoing COVID-19 pandemic, the LoTIS draws on an array of preexisting sources to establish a baseline for analysis. All references to existing conditions refer to pre-COVID conditions, unless otherwise noted. While future conditions remain uncertain, they reflect the best projections of post-COVID conditions, incorporating prior trends and assumptions and considering what the long-term impacts of the COVID-19 pandemic may be. Some lessons learned during pandemic operations in the Presidio are incorporated into this document.

Implementation Timing

This plan is intended to guide transportation investments over the next thirty years, divided into four planning horizons: within 5 years, 5-10 years, 10-20 years, and 20-30 years. These timeframes align with the LORIS implementation scenarios and have the following associated themes:

- Stabilize first 5 years
- Sustain 5-10 years,
- Aspire 10-20 years
- Dream 20-30 years

LOTIS PROCESS

The LoTIS was developed over approximately a one-year timeframe between September 2020 and July 2021. The first stages of work involved data collection and organization, followed by a collection of technical studies, a series of discussions on priorities, and alignment with parallel studies. The final step was documenting, in this report and in an interactive webmap, the needs assessment outcomes and prioritized project list.

LoTIS Working Group

A working group of Trust staff representing a handful of different departments was assembled after each major project milestone to review and provide guidance on next steps. The group met virtually for two hours for each of the five LoTIS Working Group sessions.

Supporting Analysis

LoTIS planning was completed in three phases: Existing Conditions, Needs Assessment, and Implementation. This report is organized in the same manner. Existing conditions laid the foundation for the study, Needs Assessment used a variety of mode-specific metrics to compare existing conditions to ideal transportation conditions, and Implementation identified and documented projects to fill the discrepancy between exiting and ideal conditions. Multiple deep-dive technical studies were completed as part of the planning process. These studies are preserved as appendices to this report and include the following:

- **Transit Service Alternatives Assessment:** explores alternative service delivery methods to a fixed route shuttle service such as PresidiGo.
- **PresidiGo Service Evaluation**: identifies opportunities for service improvements to existing PresidiGo service.
- **Slow Streets Selection:** The Presidio Trust introduced a slow street program in 2020 in response to COVID-19 demands for outdoor activity space. The goal of the Presidio Slow Streets Selection process is to zoom out from the current Slow Streets program and more holistically evaluate appropriate slow street locations and treatments. The result is a list of vetted slow street candidates to aid the Trust with future slow street decisions.
- **Parking Policy Review:** evaluates existing parking management policies and recommends adjustments to help the Trust meet its Strategic Goals.
- **Pavement Management Analysis:** surveys existing pavement conditions and outlines alternative strategies for cost-effectively improving the condition of roadway and parking area pavement.

LOTIS OUTCOMES

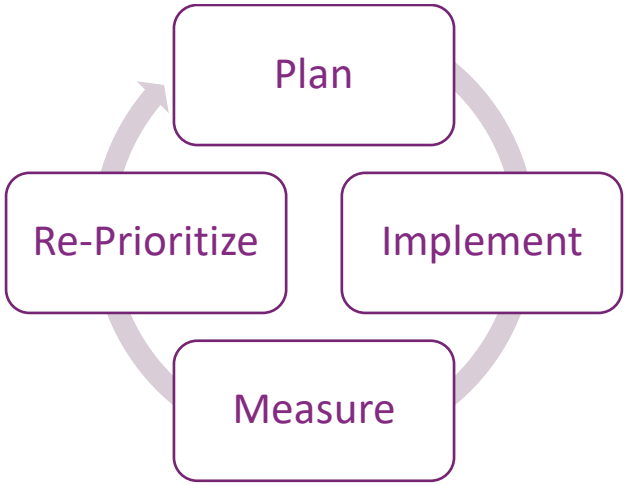
The legacy of the LoTIS planning process is a “living” project list that tentatively divides projects between four implementation time horizons: next 5 years, 5-10 years, 10-20 years, and 20-30 years. The project list is a culmination of the needs assessment analyses and multiple rounds of feedback from the LoTIS Working Group and Trust Planning staff. The list reflects the priorities at this moment in time and is meant to be revisited as priorities and external forces change overtime.

Webmap Interface

The project list is stored in a database that can be viewed through a webmap. This allows projects to be viewed spatially and potentially overlaid with other parkwide efforts such as utility or landscaping improvements to identify opportunities for coordination.

Implementation Next Steps

The LoTIS is a living strategy, and the project database is intended to perpetuate the cycle shown on the following page.



The webmap, project database, and technical studies will aid in the planning and prioritizing stages, funding strategies and technical studies will help with implementation, and the performance measures will help track progress.

Advisory bicycle lane pilot on Graham Street in the Main Post

02 Existing Conditions

02 EXISTING CONDITIONS

The Existing Conditions section outlines the state of transportation in the Presidio and the surrounding region, including existing transportation infrastructure, population characteristics, and travel patterns.

Due to the ongoing COVID-19 pandemic, the LoTIS draws on an array of preexisting sources to establish a baseline for analysis. All references to existing conditions refer to pre-COVID conditions, unless otherwise noted. While future conditions remain uncertain, they reflect the best projections of post-COVID conditions, incorporating prior trends and assumptions and considering what the long-term impacts of the COVID-19 pandemic may be.

Sources of data for LoTIS existing conditions include:

- Prior or ongoing studies, such as the Northwest Presidio Congestion Study (2019) and Crissy Field Next
- Ongoing projects and plans, such as the PresidiGo Capital Plan and Presidio Tunnel Tops project
- Prior surveys and reports, such as the 2018 Employee/Resident Survey and the 2018 Visitation Report
- US Park Police collision data
- American Community Survey (ACS) Census data
- Assorted data from the Presidio Trust's operations, including vehicle speed, vehicle counts, and transit ridership

REGIONAL CONTEXT

The Presidio exists within a broad and ever-changing land use and transportation landscape in the Bay Area.

Land use throughout the Bay Area is driven by Plan Bay Area, put together by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). One aspect of Plan Bay Area is Priority Development Areas (PDAs), locations targeted for focused growth. While no PDAs cover the Presidio itself, adjacent neighborhoods like the Richmond District and Marina District/Cow Hollow are identified as PDAs in Plan Bay Area 2050. Increased housing and jobs in these areas may influence local travel patterns, including for Presidio residents and employees. Plan Bay Area 2050 also identifies the network of coastal trails on the western edge of the Presidio as Priority Conservation Areas (PCAs), regionally significant open space intended for long-term protection. While this designation does not change their management or visitation directly, it reflects their importance to the region both ecologically and culturally.

In addition to PDAs, housing growth in the Bay Area is driven by the Regional Housing Needs Assessment (RHNA), administered by ABAG, which dictates the amount by which local jurisdictions must increase their housing supply to keep up with demand. Under the most recent draft of RHNA, San Francisco is expected to add over 80,000 households by 2050. Even if these households are primarily in other parts of the city, such an increase will impact Presidio employees and visitors.

The Bay Area is also considering several long-range transportation projects that will influence regional mobility. Ferry service is already starting to expand to new destinations like Richmond, Berkeley, Treasure Island, and Mission Bay. The electrification of Caltrain and improvements anticipating California's High-Speed Rail (HSR) project are underway. Megaprojects like the Downtown Extension of Caltrain and HSR to Salesforce Transit Center and a second Transbay rail tube promise to significantly improve regional transit connectivity.

At a more local level, the City of San Francisco is pursuing transit and roadway programs to improve travel in the city. Chief among these is the completion and later extension of the Central Subway, which

would bring Muni Metro service closer to the Presidio. For more details of City projects in the vicinity, see **Appendix A**.

Regional policy shifts may also impact the future of Bay Area transportation. The San Francisco County Transportation Authority (SFCTA) continues to explore congestion pricing in downtown San Francisco. Even prior to the COVID-19 pandemic, MTC was working on guidance for increased teleworking. COVID itself may result in significant shifts in regional travel patterns.

TRANSPORTATION NETWORK AND USAGE

Pedestrians

The Presidio's existing pedestrian network comprises trails, sidewalks, and roadway crossings, as shown in **Figure** 2-1. The Presidio's unique combination of residential and commercial areas within a national park site means that this network serves both visitors recreating and residents and employees accessing jobs and services. **Figure** 2-2 displays pedestrian peak hourly weekday activity, which is highest in the denser northeast corner of the Presidio, near the Main Post, Letterman District, and Crissy Field. Pedestrian peak hourly weekend activity is show on **Figure** 2-3.

Bicycles

Bicyclists use the Presidio bicycle network for both commute and recreational purposes. The Presidio contains a diverse array of bicycle facilities:

- Class I off-street bike paths, such as the Mountain Lake Trail and the Battery East Trail
- Class II on-street bike lanes, such as on Washington Boulevard and Mason Street
- Class III on-street shared bike routes, such as on Gorgas Avenue
- Class IV separated bike lanes, such as on Lincoln Boulevard at the southwest entrance to the park
- Advisory bike lanes, such as on Graham Street

For a map of existing bicycle facilities, see **Figure** 2-4.

The Presidio provides a total of 772 bike racks, concentrated in its denser and more heavily used northeastern corner. Other parts of the Presidio, including most of the residential areas, have a sparse distribution of bike racks insufficient for broad use.

Bay Wheels, San Francisco's primary bikeshare provider, has recently begun operating within the Presidio with its dockless e-bikes. Bikeshare users can now park an e-bike in most of the developed areas of the Presidio. The availability of e-bikes is critical to bikeshare's success in the Presidio due to its steep grades.

Peak hourly bicycle weekday and weekend volumes are shown on **Figure** 2-5 and **Figure** 2-6, respectively.

PresidiGo

The PresidiGo shuttle is a free service for residents, employees, and visitors to the Presidio. In 2019, PresidiGo operated three routes:

- Downtown, connecting the Presidio Transit Center and Letterman District to Downtown San Francisco and the Salesforce Transit Center
- Presidio Hills, a loop connecting the southern half of the Presidio and Baker Beach to the Presidio Transit Center
- Crissy Field, a loop connecting the northern half of the Presidio and the Golden Gate Bridge to the Presidio Transit Center

Nearly all Presidio residents lived within a five-to-ten-minute walk of a bus stop. Notable exceptions include the East Housing neighborhood along MacArthur Ave, Portola St, and Liggett Ave, as well as portions of Infantry Terrace and Simonds Loop.

Although the COVID-19 pandemic has forced significant service reductions, including elimination of the Crissy Field route, 2019 ridership indicates a very successful and cost-effective service with productivity comparable to some Muni routes. For more information, please see **Appendix H**, the PresidiGo Service Evaluation**.**

Other Transit

Muni and Golden Gate Transit supplement PresidiGo service. In 2019, service was as follows.

Figure 2-1: Existing Pedestrian Facilities

Source: Presidio Trust, 2019

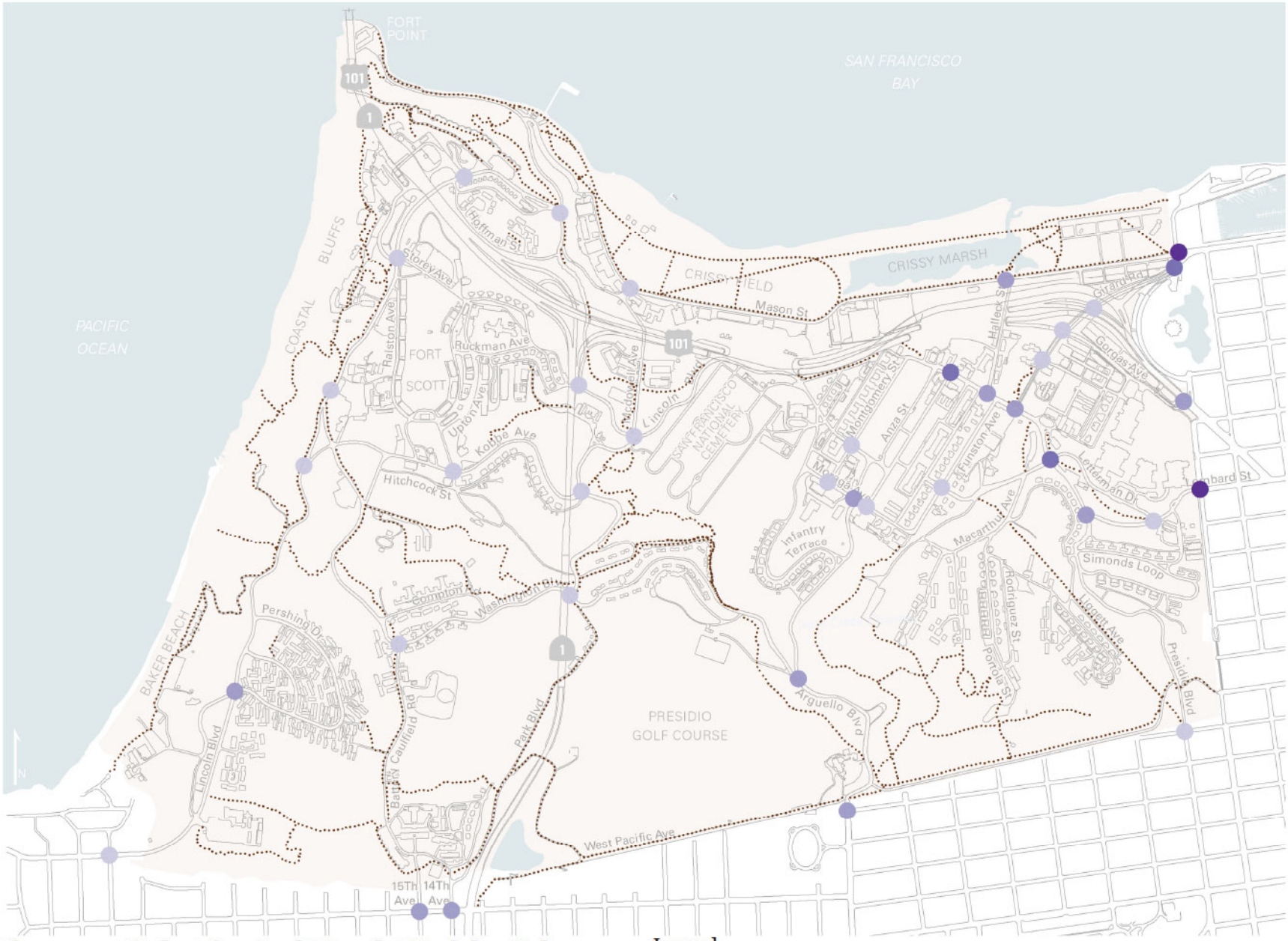


Figure 2-2: Pedestrian Peak Hourly Weekday Volumes

Source: Presidio Trust, 2019

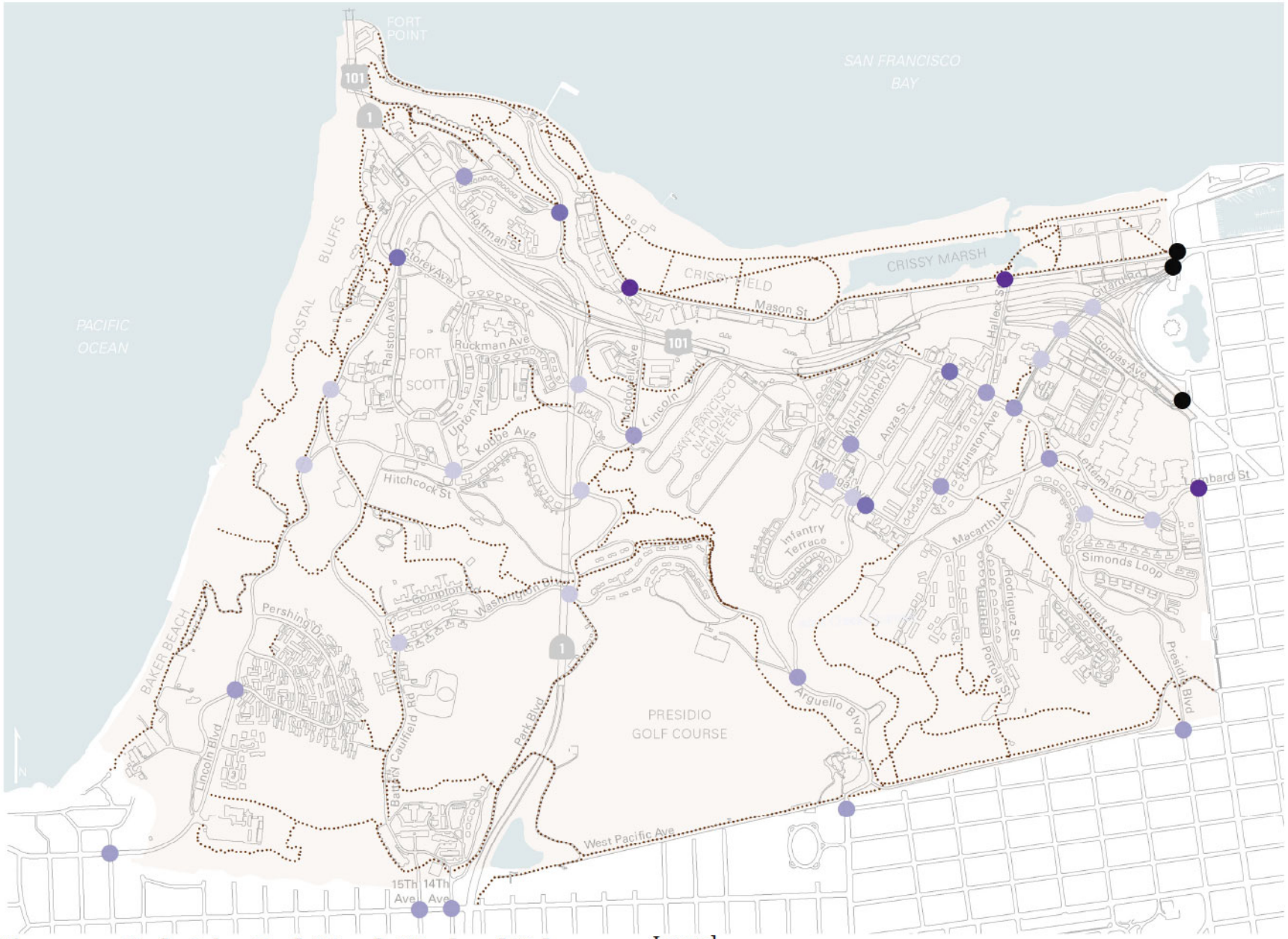


Figure 2-3: Pedestrian Peak Hourly Weekend Volumes

Source: Presidio Trust, 2019

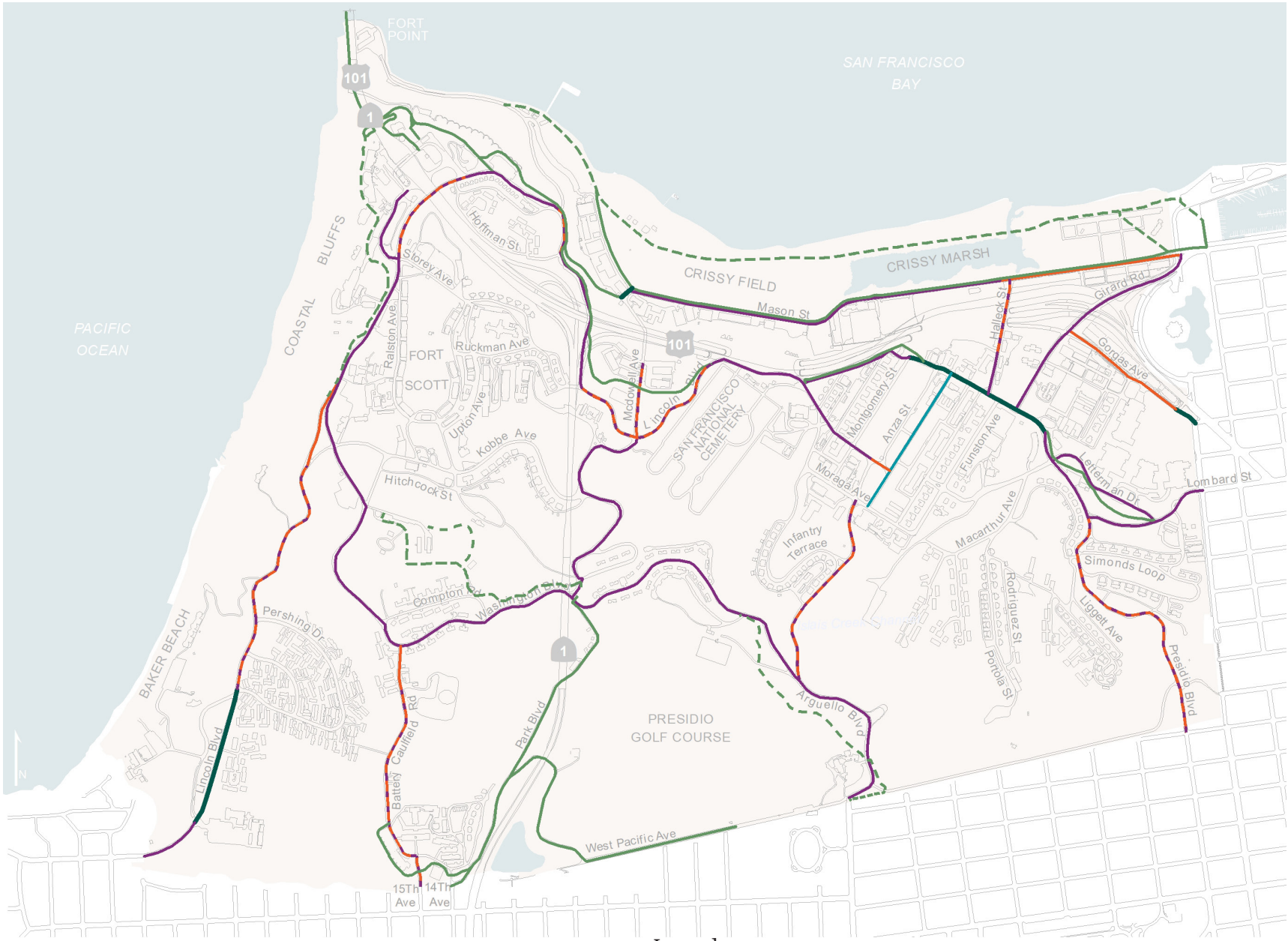


Figure 2-4: Existing Bicycle Facilites

Source: Presidio Trust, 2019

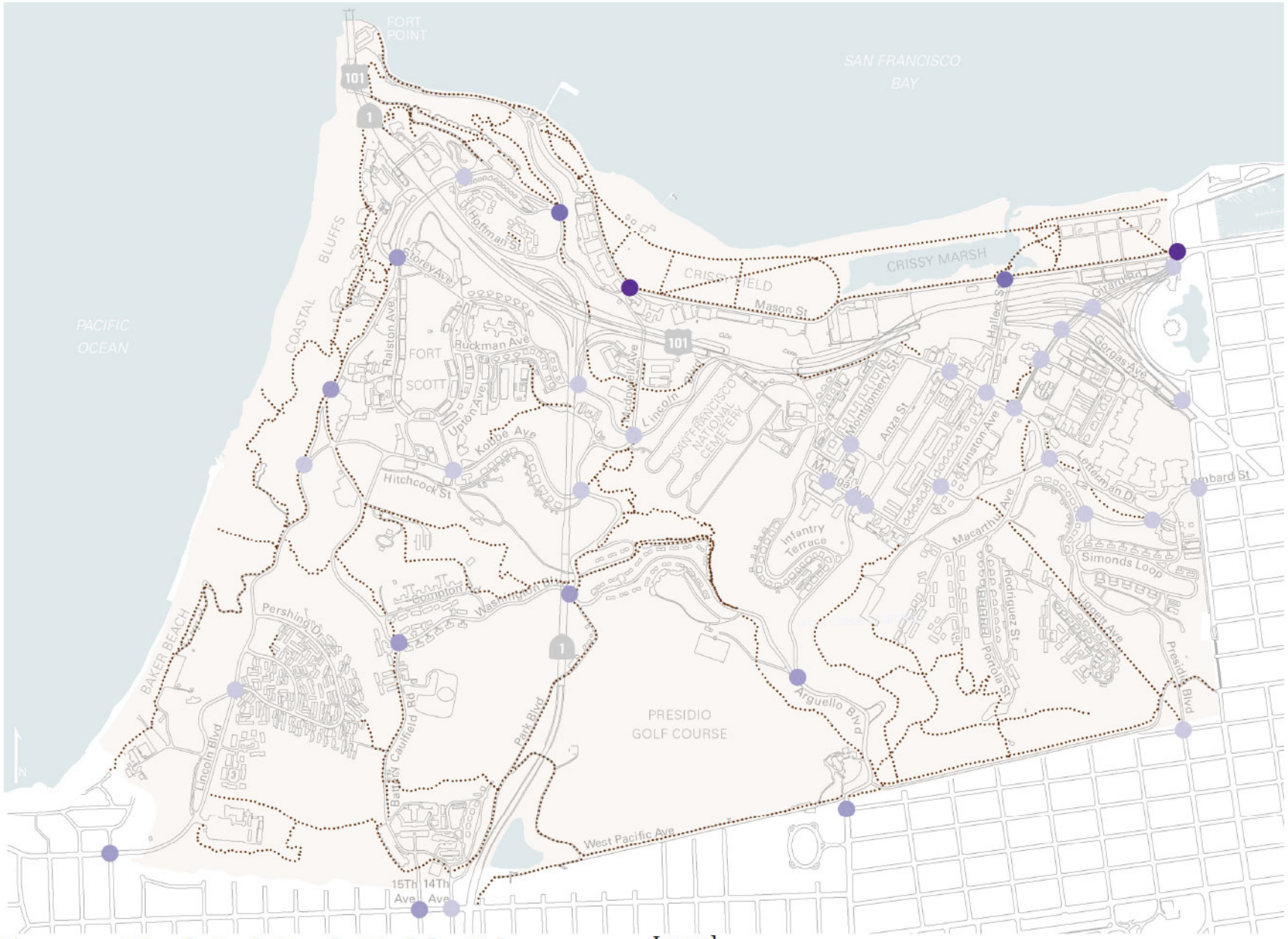


Figure 2-5: Bicycle Peak Hourly Weekday Volumes

Source: Presidio Trust, 2019

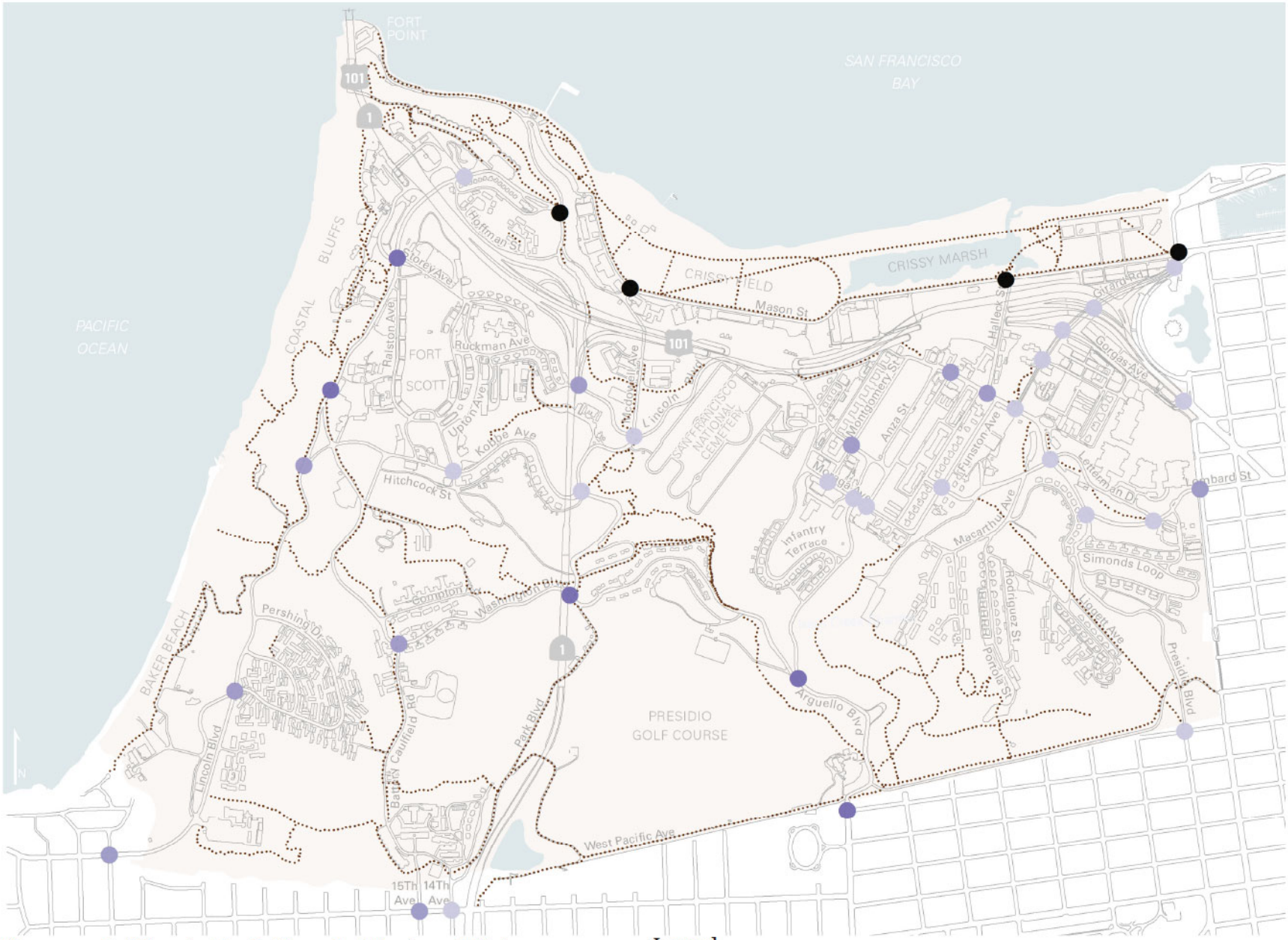


Figure 2-6: Bicycle Peak Hourly Weekend Volumes

Source: Presidio Trust, 2019

SF Muni Routes

- 28 19th Avenue, serving the Golden Gate Bridge and Richardson Avenue
- 29 Sunset, serving the Baker Beach area
- 30 Stockton, serving the Marina District just east of the Presidio
- 43 Masonic, serving the Presidio Blvd, Main Post, and Letterman areas
- 41 Union and 45 Union-Stockton, stopping just outside of the eastern entrance of the Presidio
- 76X Marin Headlands Express, stopping at the Golden Gate Bridge and Richardson Avenue on weekends only

Golden Gate Transit Routes

- Twenty-four routes stopped at the Golden Gate Bridge Toll Plaza and on Richardson Avenue with service to downtown San Francisco and various points in Marin and Sonoma Counties

Service Changes Due to COVID-19

The COVID-19 pandemic resulted in substantial changes to travel behavior, the extent and duration of which remain unknown. In March 2020, PresidiGo service was cut by 18% through service reductions during the commute periods. A month later, PresidiGo suspended the Crissy Field Route and decreased Downtown weekend service. In November 2020, weekend service on both the Downtown and Presidio Hills routes was suspended temporarily.

In forming its Core Service Plan, Muni suspended the 41 Union and the portions of the 28 19th Avenue and 43 Masonic serving the Presidio. However, in September 2020, Muni extended the 30 Stockton from its terminus in the Marina District into the Presidio along Mason Street, terminating in the mid-Crissy area, adjacent to Tunnel Tops. While it is likely that Muni will continue supporting the extension of the 30 Stockton, the return of other routes is uncertain.

Golden Gate Transit reduced service through the Golden Gate Bridge toll plaza to only six routes, serving only the largest cities of Marin and Sonoma Counties. In April 2020, Golden Gate Transit began allowing rides between any San Francisco stops to augment reduced Muni service. Previously, it had only allowed travel to downtown San Francisco from the Golden Gate Toll Plaza and Richardson Avenue stops.

Transit services to the Presidio before and during the COVID-19 pandemic are shown in **Figure** 2-7 and **Figure** 2-8.

Vehicles

The Presidio has a sparse road network of mainly small, residential streets that is tied together by a few key arterials. Lincoln Boulevard runs through the whole Presidio, connecting Baker Beach, Golden Gate Bridge, and Main Post. Mason Street runs along the northern edge of the Presidio and connects to the Marina District. Lombard Street and Girard Road connect the Main Post and Letterman Districts to the Marina/Cow Hollow District, while Arguello Boulevard and Presidio Boulevard connect them to the neighborhoods to the south. Washington Boulevard provides an important east-west route through the Presidio, but its residential character makes it undesirable as an arterial.

These arterials are not only used by residents, employees, and visitors to the Presidio, but also by drivers using them to access other destinations outside of the Presidio. These are called cut-through trips, and they vary by time of day, day of week, and traffic conditions. One common cut-through pattern is accessing the Golden Gate Bridge along Lincoln Boulevard and avoiding traffic on Richardson Avenue via Gorgas Avenue instead of taking the main highways, US Route 101, and CA Highway 1. Another common cut-through is traveling between the Richmond and the Marina and Cow Hollow neighborhoods on Presidio Boulevard, Lombard Street, and Girard Road as opposed to going around the Presidio via Divisadero Street. Presidio cut-through routes are shown in **Figure 3-12.**

Figure 2-7: Transit Service: Pre-COVID

Source: Presidio Trust, 2019

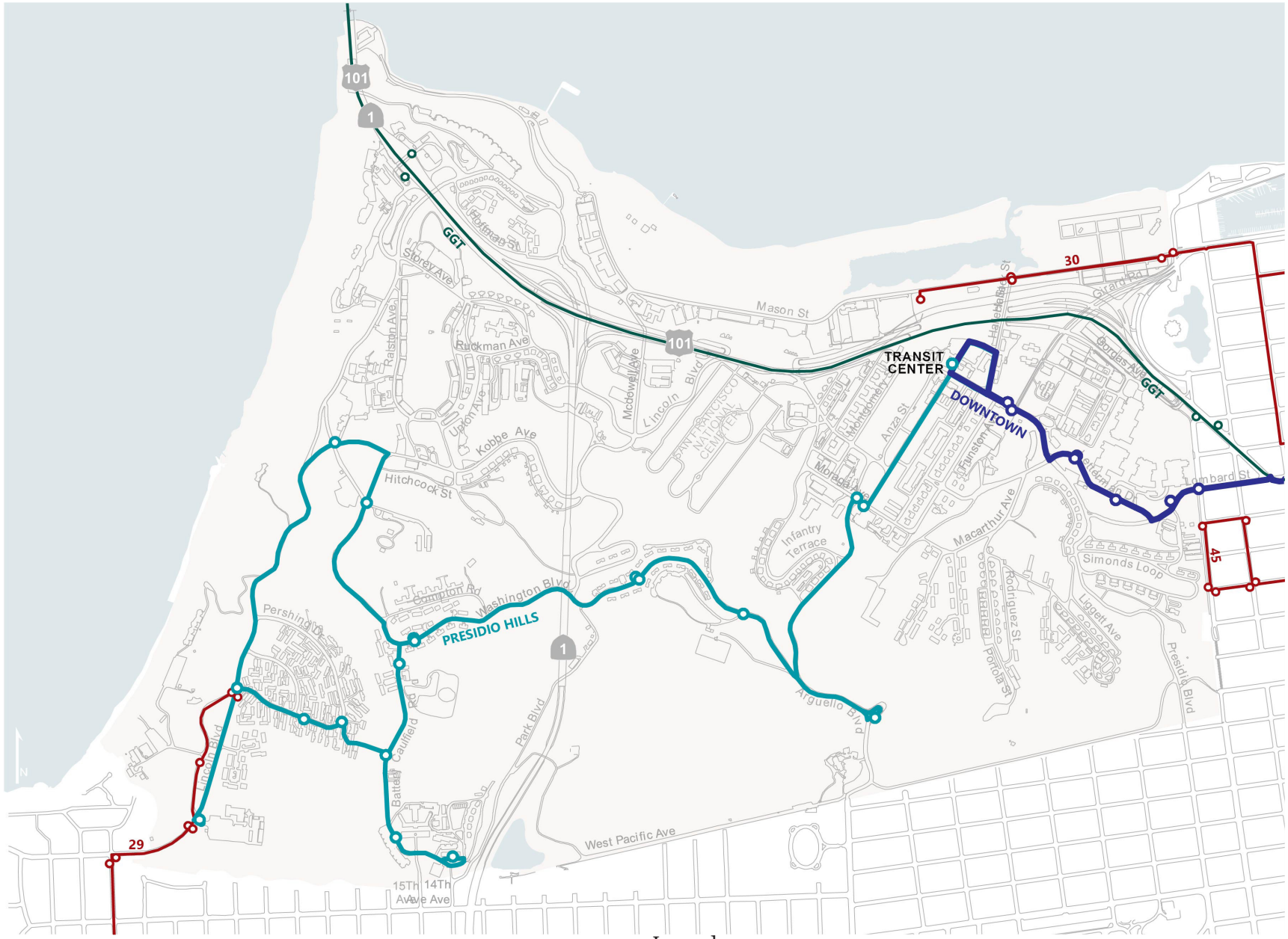


Figure 2-8: Transit Service: June 2021

Legend

PresidiGo Routes
- Downtown
- Presidio Hills

Other Transit Services
- Golden Gate Transit
- SFMTA

Bus Stop Location

Source: Presidio Trust, 2019

Parking

Regulating parking in the Presidio is a critical element of the Trust's Transportation Demand Management (TDM) program. By accommodating vehicles, but regulating and charging for parking, this strategy enhances the park user experience by minimizing vehicle trips generated by park uses, minimizing the Presidio's carbon footprint, reducing the amount of park area devoted to parking spaces, and generating revenue to fund ongoing operation and maintenance of the Presidio's transportation infrastructure, including roads, trails, parking lots, sidewalks, and transit system. The Presidio has approximately 7,500 parking spaces, which are classified in one of three ways:

- **Residential Parking:** with a few exceptions, one designated, exclusive-use parking space is included with each residential lease, free of charge. Permits for additional spaces are available for purchase.
- **Paid Public Parking:** Day-use, hourly, and monthly permits can be purchased from one of the Pay-and-Display stations or from the Presidio parking office. Rates vary by neighborhood and by time of day based on demand.
- **Free Public Parking:** Free parking is available in areas directly adjacent to free NPS parking lots (such as Bowley Street near Baker Beach), at some trailheads and overlooks, and in areas that have upcoming construction projects.

Curb Management and Loading

With widespread adoption of ride-hail services like Uber and Lyft, the demand for loading zone space has grown. Ride-hail use is lower in the Presidio than in other parts of the city but still an important and growing access mode. The busiest locations are at the Golden Gate Bridge, the Main Post, and the eastern edge of the Presidio. Ride-hail usage is greatest during special events. Saturday is the busiest day for pick-ups and drop-offs. The Presidio has very few designated loading zones.

PRESIDIO POPULATION HIGHLIGHTS & TRAVEL PATTERNS

Residential Demographics

The existing conditions analysis draws on Presidio Trust data and American Community Survey (ACS) census data to compare the Presidio's residential population with that of adjacent zip codes and San Francisco Equity Priority Communities.[1] The Presidio currently has 3,100 residents or 1,320 residents/square mile, significantly lower than nearby districts that have densities of over 20,000 residents/square mile.

The average Presidio household is larger, younger, and whiter than adjacent neighborhoods or San Francisco Equity Priority Communities. The average household size is 3, compared to 2.2 in nearby areas. While only one in ten residents is over 55, a full third are under 25; the median age of Presidio residents is 30. The Presidio also has more married couples with children than nearby zip codes. Roughly 77% of the population identifies as White, while only 7% identify as Asian, much lower than in surrounding neighborhoods. Nearly all residents are above the poverty line and have strong English proficiency.

Vehicle ownership is high in the Presidio; 96-99%[2] of households own at least one vehicle and 34% own three or more. Presidio residents are also more likely to work from home (13% of workers) than residents of adjacent neighborhoods.

For more information on residential demographics, see **Appendix B**.

[1] At the time of analysis, these areas were known as "Communities of Concern" (CoCs) and represented the most disadvantaged and underserved communities in the area. The Metropolitan Transportation Commission determined CoCs by the concentration of multiple metrics: minority residents, low income (< 200% federal poverty level), limited English proficiency, zero-vehicle households, residents over age 75, people with a disability, single-parent households, and cost-burdened renters.

[2] There is some disagreement between data sources on the percent of households without any vehicles. This confusion may come from multi-family/roommate households and differing interpretations of "household."

Resident and Employee Travel Patterns

The introduction of the PresidiGo shuttle significantly increased transit usage over the last twenty years. In the same timeframe, auto-based trips declined significantly, though the arrival of services like Uber and Lyft in recent years has slowed this trend.

The Presidio's 2018 Employee and Resident Transportation Survey provides a high-quality snapshot of the travel patterns of these two populations. As shown in **Table 2**, roughly 85% of Presidio residents work in San Francisco, including 15% who work in the Presidio itself, including working from home. Most residents leave for work around 8:00 AM and return around 6:30 PM. A large proportion of Presidio residents (36%) use the PresidiGo shuttle to commute, with another 7% using other transit services. Nearly 32% of residents drive alone and another 9% carpool. The bicycle mode share is a healthy 7% (compared to 4% citywide in SF), but the walk mode share is only 5% (compared to 11% citywide in SF)[3]. While commute mode share does not change dramatically in different parts of the Presidio, transit ridership is focused in the eastern and southwestern areas.

Table 2: Work Location of Presidio Residents

Region	Percent of Presidio Residents
Presidio	15%[1]
Downtown San Francisco	41%
Other Neighborhoods of San Francisco	29%
San Mateo & Santa Clara Counties	7%
Marin County	4%
Alameda & Contra Costa Counties	4%
Sonoma & Napa Counties	1%

Source: 2018 Employee and Resident Transportation Survey
[1] Includes Presidio residents working from home

The Presidio currently has approximately 4,000 employees, not including those working from home. While only 6% live in the Presidio, 51% live in other parts of San Francisco, as seen in **Table 3**. The rest primarily live in the East Bay or Marin County. Most employees arrive in the Presidio around 9:00 AM and leave between 5:00 and 6:30 PM. Nearly half of all employees drive alone, with even higher drive-alone rates for those from the North and South Bay. The East Bay has the largest transit mode share (66%). Within San Francisco, transit mode share ranges from 20% to 40%, while driving alone remained dominant in most parts of the city, ranging from 30% to over 60%.

Table 3: Home Location of Presidio Employees

Region	Percent of Presidio Employees
Presidio Residents	6%[1]
Rest of San Francisco	51%
Alameda & Contra Costa Counties	20%
Marin County	13%
San Mateo & Santa Clara Counties	7%
Sonoma, Napa, & Solano Counties	3%

Source: 2018 Employee and Resident Transportation Survey
[1] Does not include Presidio residents working from home

The 2018 transportation survey also asked residents and employees about their preferences for transportation demand management (TDM) improvements. Both groups indicated strong support for improved public transit service in and to the Presidio. Employees also noted that financial incentives and more flexible work schedules would encourage them to use modes other than driving alone.

Presidio Visitors

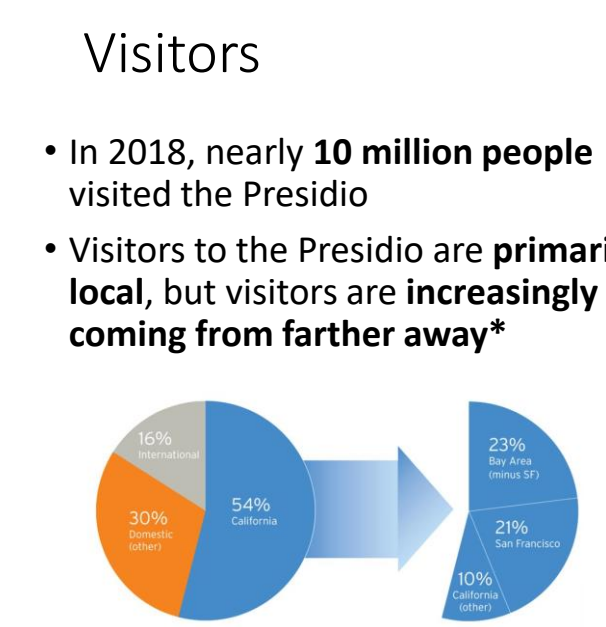
In 2018, nearly 10 million people visited the Presidio. A 2018 survey of visitors found that 21% of visitors came from within San Francisco and another 23% from the rest of the Bay Area, as seen in **Figure** 2-9. Relative to a similar 2008 survey, visitation from other states (30%) and other countries (16%) had grown, as **Figure** 2-10 shows. Among visitors surveyed, 43% drove a personal car to the park, while only 10% used public transit. Among visitors surveyed at Presidio sites, 46% walked for at least part of their journey to the park, 11% bicycled, 30%

[3] SF 2018 Resident Commute Mode Shares from MTC Vital Signs, https://www.vitalsigns.mtc.ca.gov/commute-mode-choice.

drove a personal vehicle, 10% used public transit, and 6% used a ride-hail or taxi service.

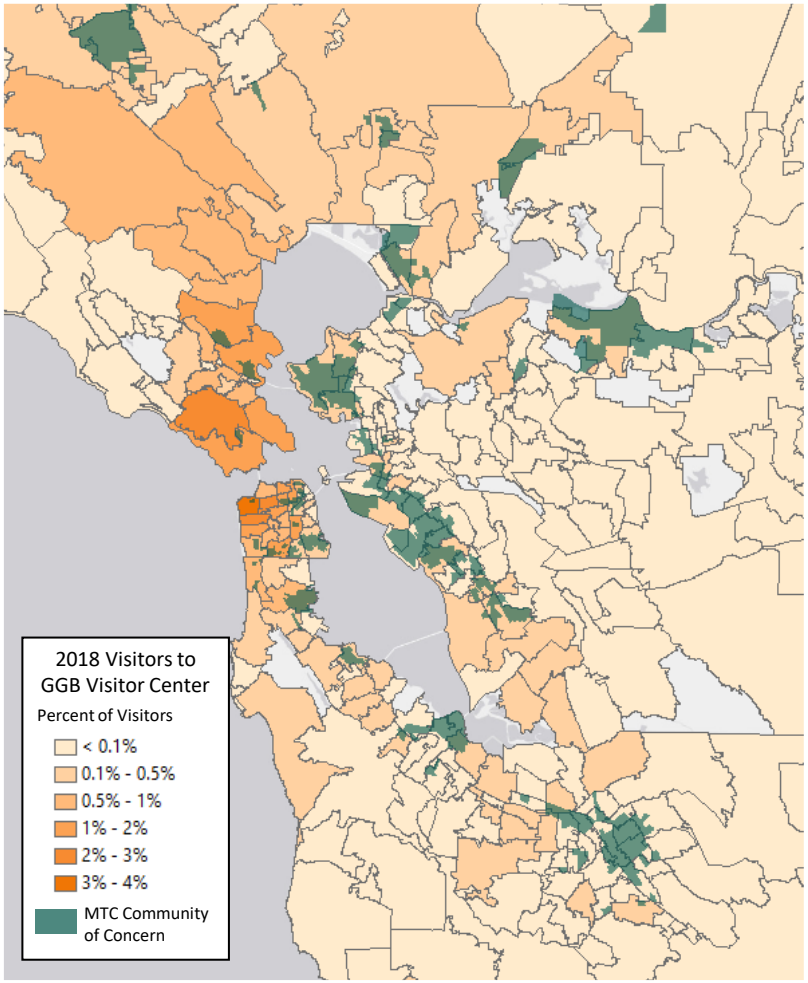
Visitors are increasingly representative of the Bay Area's racial and income diversity. When surveyed, they reported appreciating escape from the city with open space, hiking and biking trails, and free programs. However, visitors noted barriers that included poor public transit access, poor signage and wayfinding, and poor accessibility of PresidiGo for persons with disabilities. Some visitors also commented on lack of diversity in Presidio staff and fellow visitors, and a perception of elitism and exclusivity.

Figure 2-9: Visitorship Pie Chart



* Relative to 2008 Visitor Survey
Source: 2018 Visitor Survey

Figure 2-10: Visitorship Distribution



Source: 2018 Northwest Presidio Congestion Study

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03 Needs Assessment

03 NEEDS ASSESSMENT

The Needs Assessment section examines projected trends in Presidio travel demand and transportation gaps over the next thirty years. Like the Existing Conditions section, the Needs Assessment draws on preexisting sources to establish a baseline for analysis. All references to existing conditions refer to pre-COVID conditions, unless otherwise noted. While future conditions remain uncertain, they reflect the best projections of post-COVID conditions, incorporating prior trends and assumptions and considering what the long-term impacts of the COVID-19 pandemic may be.

FUTURE TRAVEL DEMAND

The Presidio contains an array of residential, commercial, and recreational land uses that generate trips at different rates and different times of day. Understanding current and future travel demand is important to determining improvements to the transportation network. Travel demand is influenced by land use changes in the Presidio, Presidio Trust policies and services, and external forces, including both planning and policy changes.

Presidio Land Use Changes

The travel demand analysis uses 2019 land use data and 2040 land use projections provided by the Presidio Trust. The primary trends are noted below.

As of August 2019, 13% of the Presidio's building area was vacant, including many industrial and former military uses. Vacant uses are concentrated in Fort Winfield Scott, Crissy Corridor (Mason Street), and north of the Main Post and Letterman District. As the 2040 land use projections assume all buildings are in use, these areas are also key locations for future land use growth.

Residential Land Use

Currently, residential land uses exist throughout the Presidio, but they have their highest density at the Baker Beach Apartments, the Letterman Apartments, and the neighborhoods in the southeast corner of the Presidio. By 2040, residential land uses are expected to grow in the vicinity of the Letterman District and Fort Winfield Scott where there is significant vacant building area.

Office Land Use

Currently, office land uses are concentrated in the Main Post, Letterman District, and, to a lesser extent, Fort Winfield Scott. These locations will continue to have significant office space in 2040, especially the northern half of the Main Post and Letterman District where there is significant vacant building area.

Non-Office Commercial Land Uses

Non-office commercial land uses include industrial, retail, restaurant, conference, recreational, and educational land uses. These land uses are concentrated in the Main Post, Letterman District, and Crissy Corridor, and, to a lesser extent, in Fort Winfield Scott and the Public Health District. The largest increases in non-office commercial land uses by 2040 are expected in the Letterman District, Crissy Corridor, and Fort Winfield Scott where there is significant vacant building area.

Presidio Trip Generation

Trip generation rates determine the average number of trips generated (ins and outs) in a given period of time, be it a single hour or a full 24-hour period. The travel demand analysis relies on custom trip generation rates from a variety of sources, including:

- 2010 Main Post Update to the Presidio Trust Management Plan
- 2014 Crissy Corridor Traffic and Parking Study
- 2019 San Francisco Transportation Impact Analysis Guidelines
- Individual project studies (e.g., Sports Basement, Palace of Fine Arts Theatre, etc.)

These rates determine the likely impact of future land use changes on travel demand in the Presidio. The travel demand analysis focuses on the weekday PM peak and weekend midday periods for assessing travel demand. Due to the dispersed nature of open space throughout the Presidio, the travel demand analysis did not consider open space as a trip-generating land use, with the exception of the forthcoming Tunnel Tops project at the north edge of the Main Post.

Weekday PM Peak Travel Demand

Existing travel demand in the weekday PM peak period is concentrated in the office- and commercial-heavy northeast corner of the Presidio, including the Main Post, Letterman District, and Crissy Corridor. As shown in **Figure** 3-1 and **Figure** 3-2, the growth in travel demand by 2040 is concentrated on the northern half of the park, especially Fort Winfield Scott and portions of the Main Post, Letterman District, and Crissy Corridor. Many locations see growth as a result of filling currently vacant building area.

Immigrant Point Overlook on Washington Boulevard

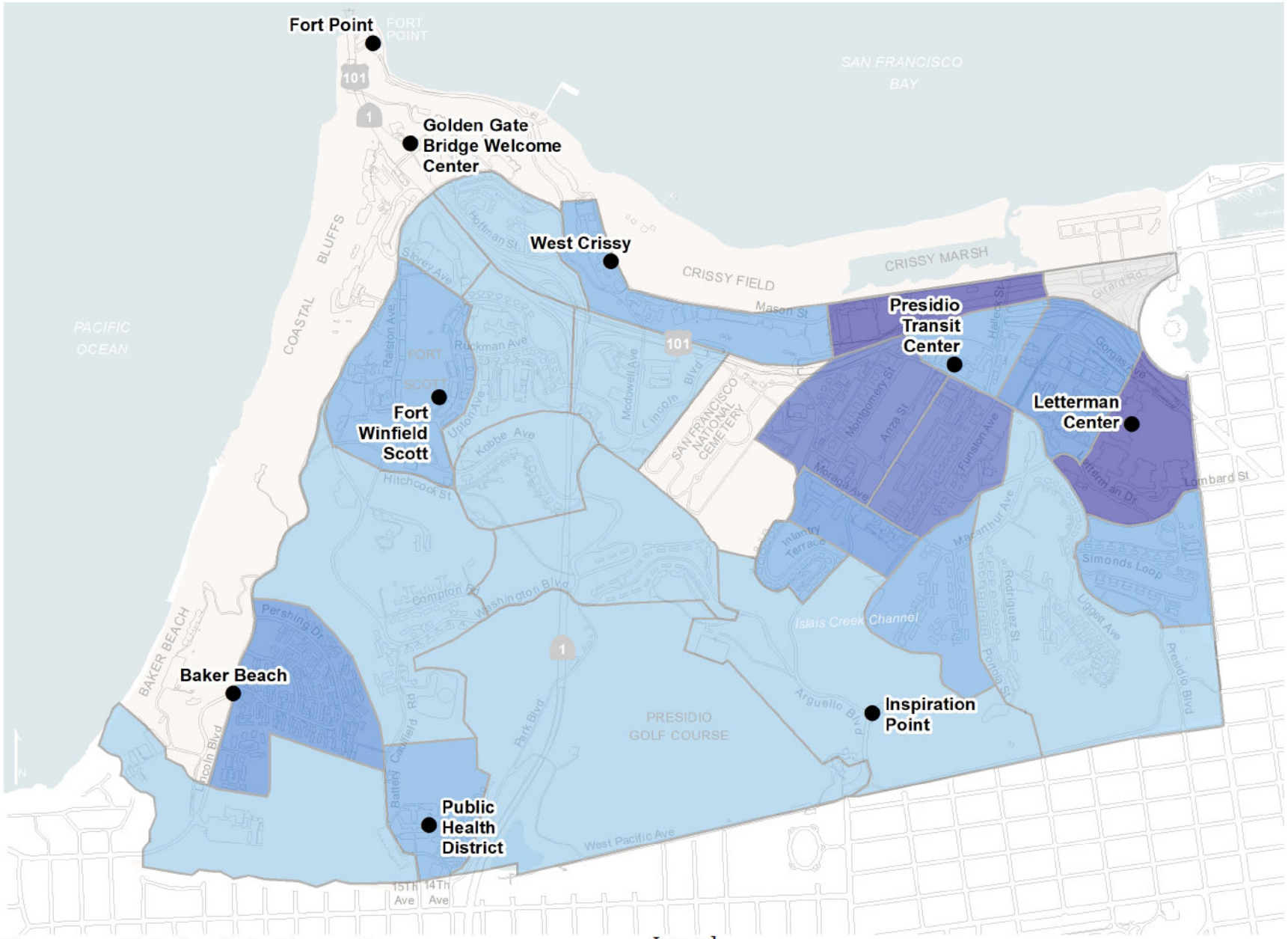

Figure 3-1: Existing Trip Generation: Weekday PM Peak

Source: Presidio Trust, 2019

Figure 3-2: 2040 Growth in Trip Generation: Weekday PM Peak

Source: Presidio Trust, 2019

Weekend Midday Travel Demand

Like in the weekday PM peak period, existing weekend midday travel demand is concentrated in the Main Post, Letterman District, and Crissy Corridor, as well as the Baker Beach Apartments. As shown in **Figure** 3-3 and **Figure** 3-4, the growth in travel demand by 2040 is similar to weekday PM peak, concentrated in Fort Winfield Scott, the Crissy Corridor, and portions of the Main Post and Letterman District. Many locations see growth as a result of filling currently vacant building area.

VMT Benchmark

Fehr & Peers analyzed regional Vehicle Miles Traveled (VMT) benchmarks using SF-CHAMP, the City of San Francisco's regional travel demand model. VMT metrics typically compare VMT to the size of the population generating that VMT. Standard VMT metrics include Work VMT per Employee and Residential VMT per Resident.

Based on a model run simulating current (year 2020) conditions, Presidio VMT per capita is higher than the San Francisco citywide average, but lower than the nine-county regionwide average. **Table 4** shows that this dynamic holds true for a model run forecasting year 2050 conditions. The following table shows VMT metrics for San Francisco, the Presidio, and the region for both 2020 and 2050.

Table 4: Current and Future VMT Estimates

Geography	2020		2050	
	Work VMT per Employee	Residential VMT per Resident	Work VMT per Employee	Residential VMT per Resident
San Francisco	14.1	8.6	12.6	8.5
Presidio	22.5	10.9	21.5	11.5
Region	25.7	18.6	23.8	17.1

The VMT forecasts indicate that the Presidio is generally trending in the same direction as the region and San Francisco, with work VMT decreasing as more housing is added to the core counties and residential VMT staying steady or changing only slightly.[4]

Trust Policies

Land use trip generation rates are based on the existing or anticipated policy context, but significant policy changes have the potential to increase or decrease trips as well as shift trips between modes. As an example, the Trust made policy shifts in response to COVID-19 such as reductions in PresidiGo service levels and implementation of Slow Streets. Continuing these policies into the future make certain modes of travel more or less attractive to different Presidio users in ways that influence their travel behavior. Parking management and work-from-home guidelines for employees are two other policy areas that can have dramatic effects on travel behavior. Parking management policies are explored in more detail in **Appendix G**.

External Forces

Travel patterns and travel demand in the Presidio are changing over time in response to both internal and external forces. External forces include broader societal trends that may affect the amount of vehicular and non-vehicular travel taking place in the Bay Area, as well as regional land use changes that could increase the number of cut-through trips (vehicle trips that start outside the Presidio, travel on surface streets through the Presidio, then end outside the Presidio).

[4] Presidio residential VMT sees a small increase between 2020 and 2050. Travel models are inherently imprecise as they attempt to approximate large-scale changes over long periods of time and can be highly sensitive to slight changes in inputs. Therefore, this increase is not a source of concern.

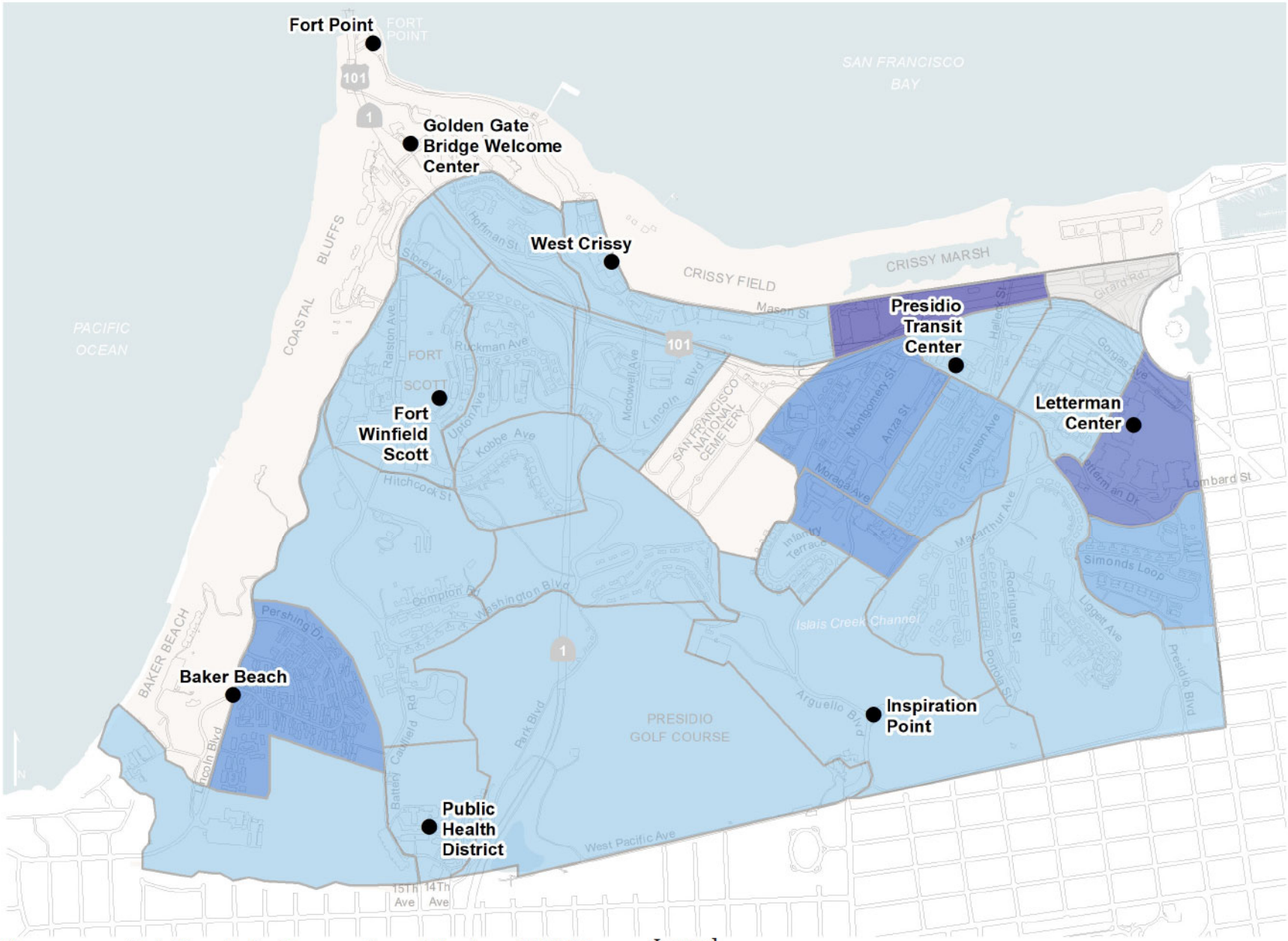

Figure 3-3: Existing Trip Generation: Weekend Midday

Source: Presidio Trust, 2019

Figure 3-4: Existing Trip Generation: Weekend Midday

Source: Presidio Trust, 2019

TrendLab+

The LoTIS Working Group (LWG) used TrendLab+, a web-based forecasting tool, to explore how trends, including some associated with the COVID-19 pandemic and its impacts on the economy, may affect short- and long-term travel behavior, traffic levels, and transit use.

LWG members were surveyed on what each respondent thought was most likely to occur in the short, medium, and longer term, on factors ranging from regional unemployment levels to the prevalence of work-from-home and distance education. The 22 survey responses were combined into a set of forecast scenarios whose aggregate effect on VMT per capita and transit ridership per capita is shown in **Figure** 3-5 and **Table 5** below.

Figure 3-5: TrendLab+ Forecast Results

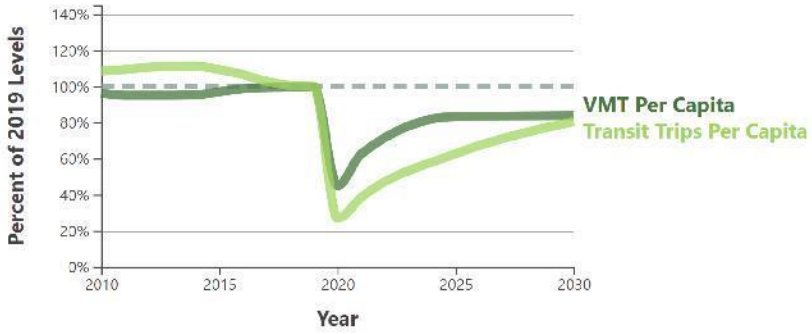

Table 5: TrendLab+ Forecast Results

Metric	2020	2021	2025	2030
VMT per capita	45%	71%	83%	84%
Transit trips per capita	27%	37%	63%	81%

All values shown as percent of 2019 levels.

TrendLab+ is a high-level tool, and its outputs (like any future forecasts) are subject to substantial variation and uncertainty. Nevertheless, the TrendLab+ results suggest that VMT per capita may not return to 2019 levels for several years to come, and in the absence of significant investment or policy changes, transit ridership in and around the Presidio may struggle to return to pre-pandemic levels.

TRAVEL MODE NEEDS ASSESSMENT

The needs assessment process examined each travel mode or project type from various perspectives, including demand, safety, and network quality, to help identify the most pressing projects for each mode.

Pedestrians

The Presidio's pedestrian network serves pedestrians with many different abilities, trip purposes and levels of familiarity with the Presidio.

The existing pedestrian network suffers from four key shortcomings:

- Pedestrian Gaps—many walking routes are effective for travel within a particular district, but they do not provide safe and comfortable routes to other districts or adjacent San Francisco neighborhoods
- Direct Connections—even where continuous pedestrian routes exist, they may not be the most direct or efficient, requiring lengthy detours or unnecessary road crossings
- Lighting—many of the Presidio's walking routes do not have sufficient pedestrian-scale lighting that balances pedestrian safety with the preservation of dark areas for wildlife
- Accessibility—much of the Presidio's pedestrian network needs to be upgraded to meet modern accessibility standards for all ages and abilities

The needs assessment for the pedestrian mode approached these deficiencies through three metrics.

1) *Pedestrian activity*

Drawing on Presidio Trust count data and local knowledge of the area, the project team identified the following areas of high pedestrian traffic (as shown in the pedestrian counts map in Existing Conditions):

- Main Post
- Letterman District
- Crissy Field
- Battery East and the Golden Gate Bridge

- Lincoln Boulevard and the coastal bluffs
- Park Boulevard and Park Trail
- West Pacific Avenue
- Arguello Boulevard
- Lovers' Lane

As a result of the land use changes identified above, pedestrian activity is expected to increase in the Main Post, Letterman District, Crissy Corridor, and Fort Winfield Scott.

2) Pedestrian safety

United States Park Police (USPP) data from 2014-2019 identified key pedestrian collision and injury hot spots, such as the Main Post, the Letterman District, and the intersection of Lincoln Boulevard and Pershing Drive, shown in **Figure** 3-6. Most injuries were minor and occurred when a vehicle struck a pedestrian crossing the road. The USPP dataset also categorizes as pedestrian any crashes involving micromobility modes such as scooters or skateboards. These modes experienced a higher rate of severe crashes, but all incidents involved a user falling off a scooter or skateboard without a vehicle present.

3) Pedestrian network access gaps

While all pedestrian gaps are locations of potential need, this analysis explored the ways in which these gaps impact the ability of pedestrians to access major destinations and transit options. A geospatial network analysis, or "walkshed" map, based around nine "activity centers" was used to compare the area reachable within a ten-minute walk with and without the identified network gaps. An example walkshed map is shown in **Figure** 3-7; the rest can be found in **Appendix C**. This analysis determined the pedestrian network gaps that most impede pedestrian movement in the Presidio, including Pershing/Bowley at Lincoln, Washington at Arguello, and Kobbe between Lincoln and Upton.

Accessibility

In 2020, the Presidio Trust completed an inventory of facilities within the public right-of-way, including sidewalks, curb ramps, street crossings, parking spaces, bus stops, and stairways. Barriers were identified as well as treatments to remedy these issues.

Accessibility Project Prioritization

Generally, the priorities assigned for barrier removal focus on the most significant barriers to accessibility (such as the provision of curb ramps where a pedestrian route crosses existing vertical curbs with no curb cut). The barrier removal implementation plan prioritizes facilities based on the services, programs, and activities served by the facility. Implementation of barrier remediation would generally follow this order of prioritization: transportation points of arrival, sidewalks and curb ramps, walkways and ramps serving particular buildings or sites, and street crossings, stairways, and traffic signals. Parking spaces, bus stops, sidewalks, and curb ramps (Priorities 1 and 2) serving government offices and facilities that serve the public would be top priority, followed by Priority 1 and 2 facilities serving businesses and then residential areas.

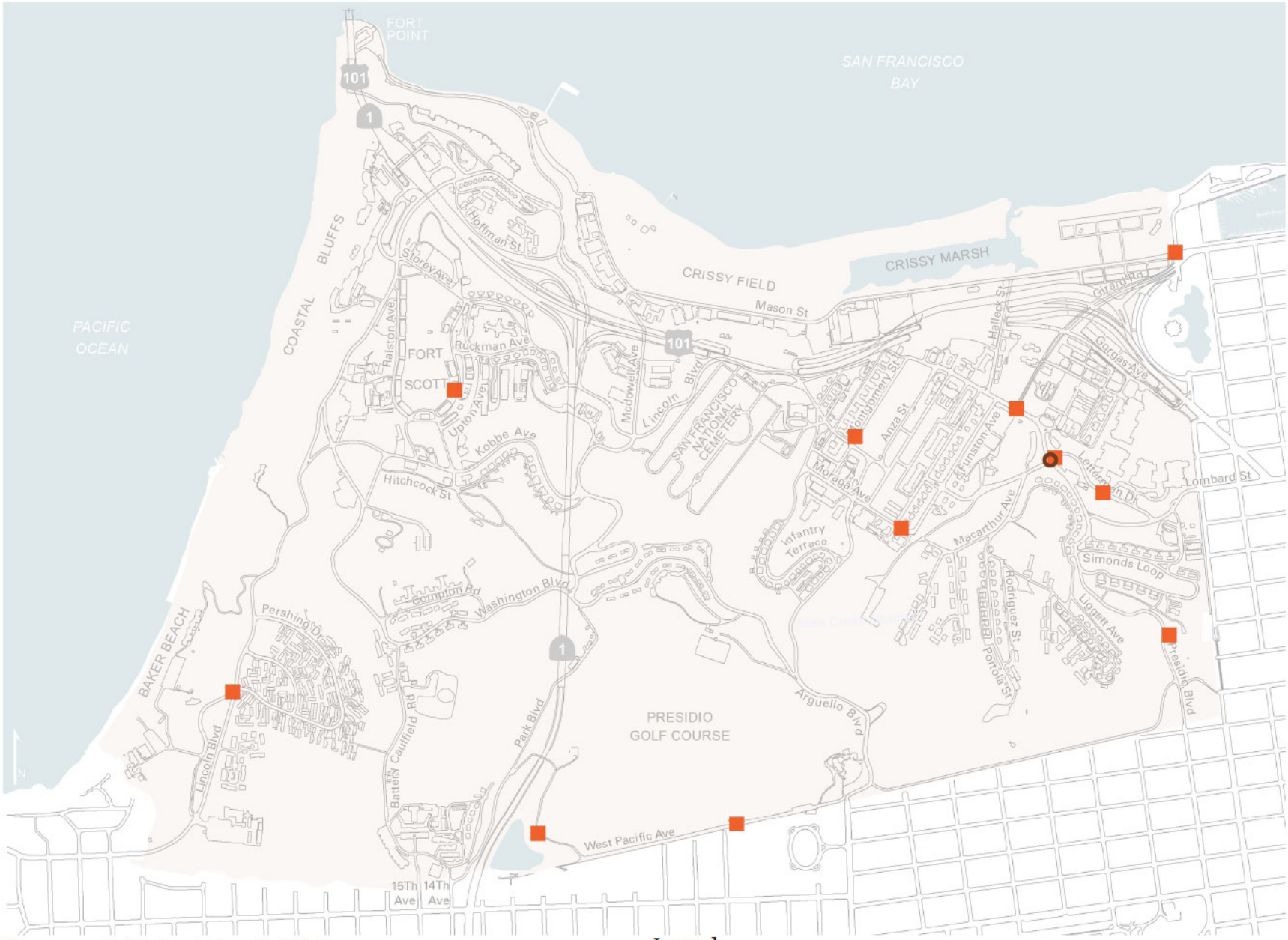

Figure 3-6: Pedestrian Collisions

Source: US Park Police, 2014-2019

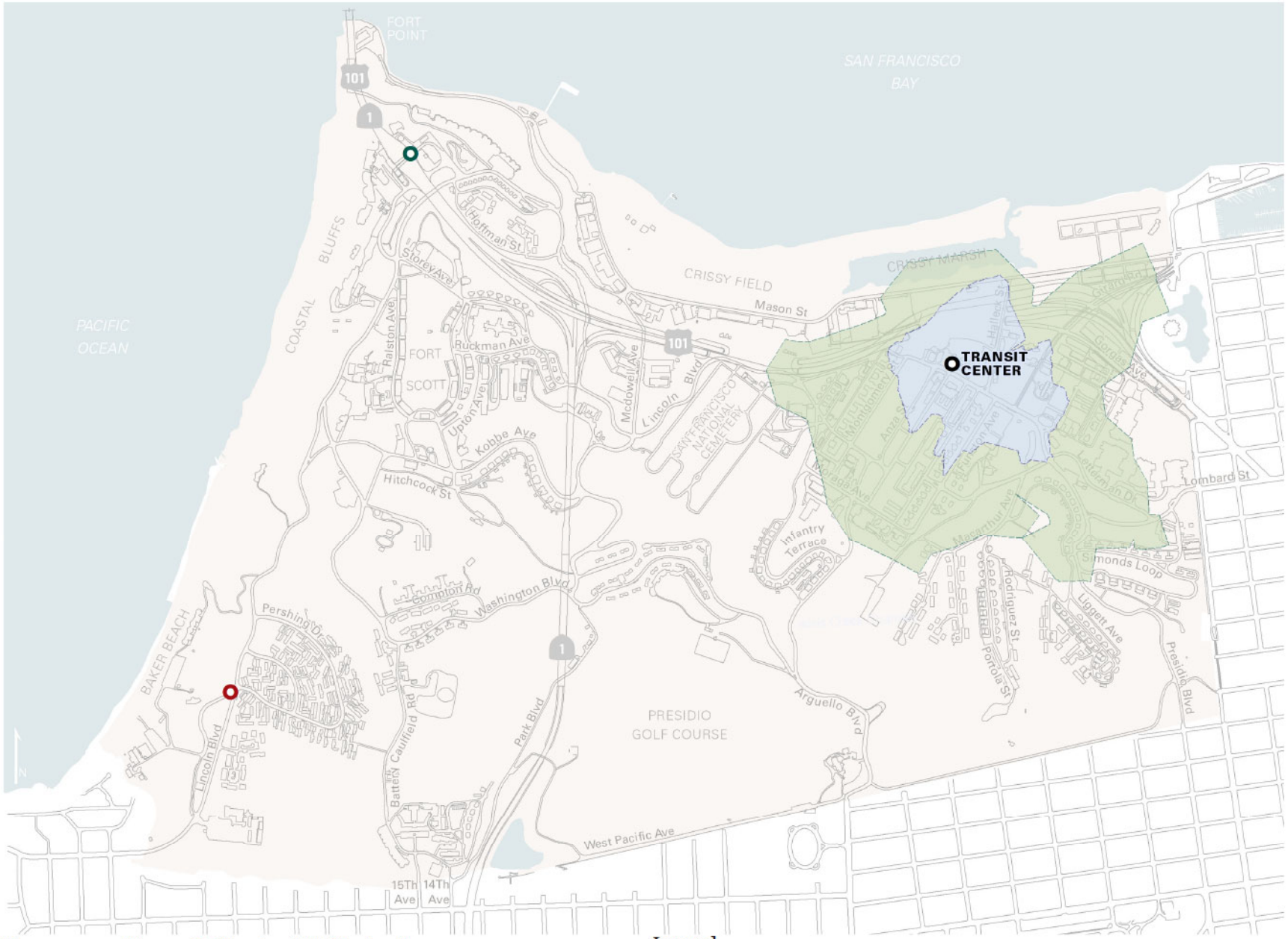

Figure 3-7: Transit Center Walkshed

Source: Presidio Trust, 2020

Bicycles

The Presidio's bicycle network is popular with residents, employees, and visitors as a way to access jobs and services and enjoy the Presidio's natural beauty. However, the Presidio's bicycle facilities remain fragmented and incomplete in many areas. The needs assessment for the bicycle mode focused on the following four key aspects of need.

1) Bicycle Activity

Drawing on Presidio Trust count data and local knowledge of the area, the project team identified the following areas of high bicycle traffic (as shown in the bicycle counts map in Existing Conditions):

- Lincoln Boulevard, for its entire route through the Presidio
- Crissy Field
- Battery East and the Golden Gate Bridge
- Fort Winfield Scott
- Washington Boulevard
- Arguello Boulevard

2) Bicycle Safety

United States Park Police (USPP) data from 2014-2019 reveals key bicycle collision and injury hot spots, such as Mason Street, Letterman Drive, Washington Boulevard and Kobbe Avenue, Lincoln Boulevard and Storey Avenue, and Lincoln Boulevard and Pershing Drive. These hot spots are shown in **Figure** 3-8. Most injuries were minor and involved a vehicle hitting a bicycle as part of a turn or sideswipe.

3) Bicycle LTS

Level of traffic stress (LTS) is a method of assessing the stress imposed on bicyclists by road design and traffic patterns. Factors that influence the score include bicycle infrastructure type, number of vehicle travel lanes, speed limits, and other roadway characteristics, such as whether the facility is a one-way street, a two-way street, or a trail. High LTS locations indicate stressful or potentially unsafe conditions for bicyclists, even in the absence of reported collisions, that may deter bicycle use. Over 80% of the Presidio's road network has an LTS of 1 or 2, indicating safe and low-traffic stress roadways. However, some key connections, including portions of Lincoln Boulevard, Arguello Boulevard, Presidio Boulevard, McDowell Avenue, Halleck Street, West Pacific Avenue, Montgomery Street and Girard Road, have an LTS of 3 or even 4, indicating roadways that have high traffic stress and would deter use by the average cyclist. **Figure** 3-9 displays a complete map of LTS in the Presidio as of Fall 2020.

4) Bicycle Network and Access Gaps

Road segments with a high LTS and steep grades affect the ability of bicyclists to access major destinations. A geospatial network analysis, or "bikeshed" map, based around nine "activity centers" was used to compare the area reachable within a ten-minute bike ride with and without high stress road segments. This analysis also considered which areas were reachable when biking toward and away from activity centers, in order to capture the impacts of steep grades. This analysis determined the bicycle network gaps which most impede bicycle movement in the Presidio.

An example bikeshed map is shown in **Figure** 3-10; the rest can be found in **Appendix C**.

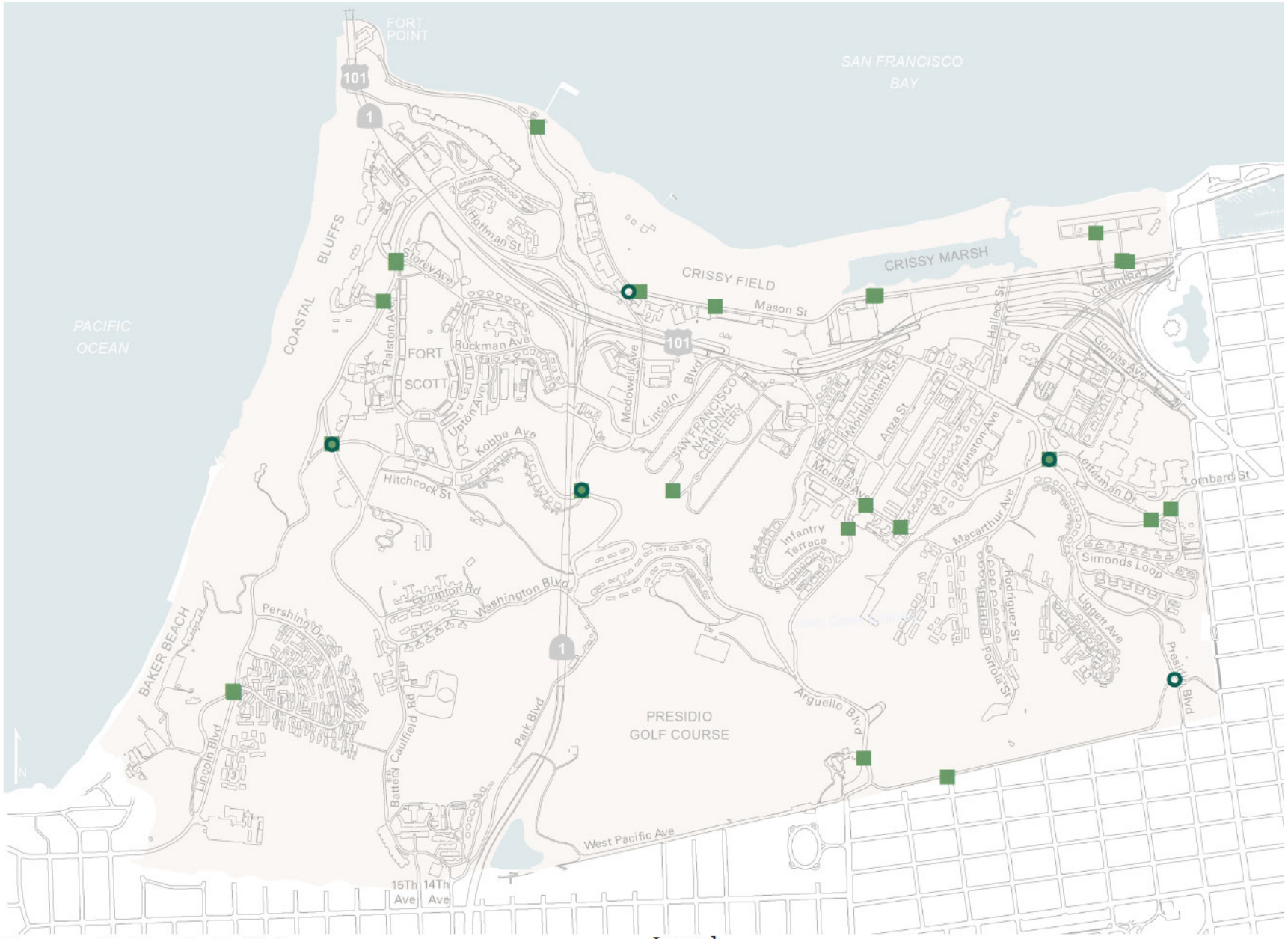

Figure 3-8: Bicycle Collisions

Legend

Cyclist Collision

Injury

Property Damage Only

Source: US Park Police, 2014-2019

Figure 3-9: Bicycle Level of Traffic Stress

Source: Fehr & Peers and Presidio Trust, 2020

Figure 3-10: Transit Center Bikeshed
(Biking Away from Transit Center)

Source: Presidio Trust, 2020

Transit

PresidiGo is a well-liked service that is among the most productive and cost-effective transit operations in the Bay Area. Prior to the pandemic, PresidiGo was the most commonly used mode for residents to commute to work. A robust and effective PresidiGo system provides an essential alternative to driving for Presidio residents, employees, and visitors, reducing greenhouse gas emissions and improving accessibility for those who are unable to drive. Furthermore, as a cost-efficient, productive service, PresidiGo reduces the expense of transportation in the Presidio for both its riders and the Presidio Trust.

While most core transit needs are met, there exist a few opportunities for near- and long-term improvement:

- Crissy Field Route redundancy with Muni and GGT routes
- More frequent midday service to downtown
- Improved connections and reliability downtown
- Desire for a transit connection to the Inner Richmond
- Market demand for a one-seat ride between downtown and Baker Beach/ Building 1750

Recommendations to address these needs are explored in more detail in **Appendix H**, the PresidiGo Service Evaluation.

When compared to alternative mobility services such as on-demand shuttles, TNC subsidies, or Muni subsidies, PresidiGo is the best option to serve the high volume of peak period riders and wide diversity of rider needs in the Presidio. As the Presidio's daytime population grows over the next 30 years, transit demand will grow as well. The best way to meet this demand and reduce Presidio-generated vehicle traffic is by continuing to invest in the fleet and increasing service frequencies as needed.

Vehicles

While increasing the convenience and desirability of pedestrian, bicycle, and transit options is essential for the future of the Presidio, maintaining a safe roadway network is important for the residents, employees, and visitors who must use a private vehicle. The needs assessment for the vehicle mode focused on three key aspects of need.

1) Vehicle Activity

Vehicle activity is concentrated at gateways and on the arterial roadway network: Girard Road, Lincoln Boulevard, Presidio Boulevard, Lombard Street, Arguello Boulevard, and Mason Street.

2) Vehicle Safety

United States Park Police (USPP) data from 2014-2019 showed that the vast majority of vehicle-only collisions only involved damage to property, with no injuries. Of the collisions with injuries, the data showed that rear end and sideswipe collisions were the most common and that injuries were largely spread throughout the Presidio with few defined hot spots. The data showed only two severe injury collisions, both involving motorcyclists and no other moving vehicle.[5] These trends indicate that the Presidio is largely quite safe for vehicles. Injury collision hot spots are shown in **Figure** 3-11.

Presidio Trust vehicle speed data was also used to identify locations with high vehicle speeds. While speed data in the Presidio is sparse, the available data indicates speeding hot spots in the Main Post and on Washington Boulevard, Presidio Boulevard, Mason Street, and Lincoln Boulevard near Baker Beach.

[5] One such collision involved a motorcycle hitting a parked car on Graham Street. The other involved a motorcycle losing control and running off the road on Washington Boulevard.

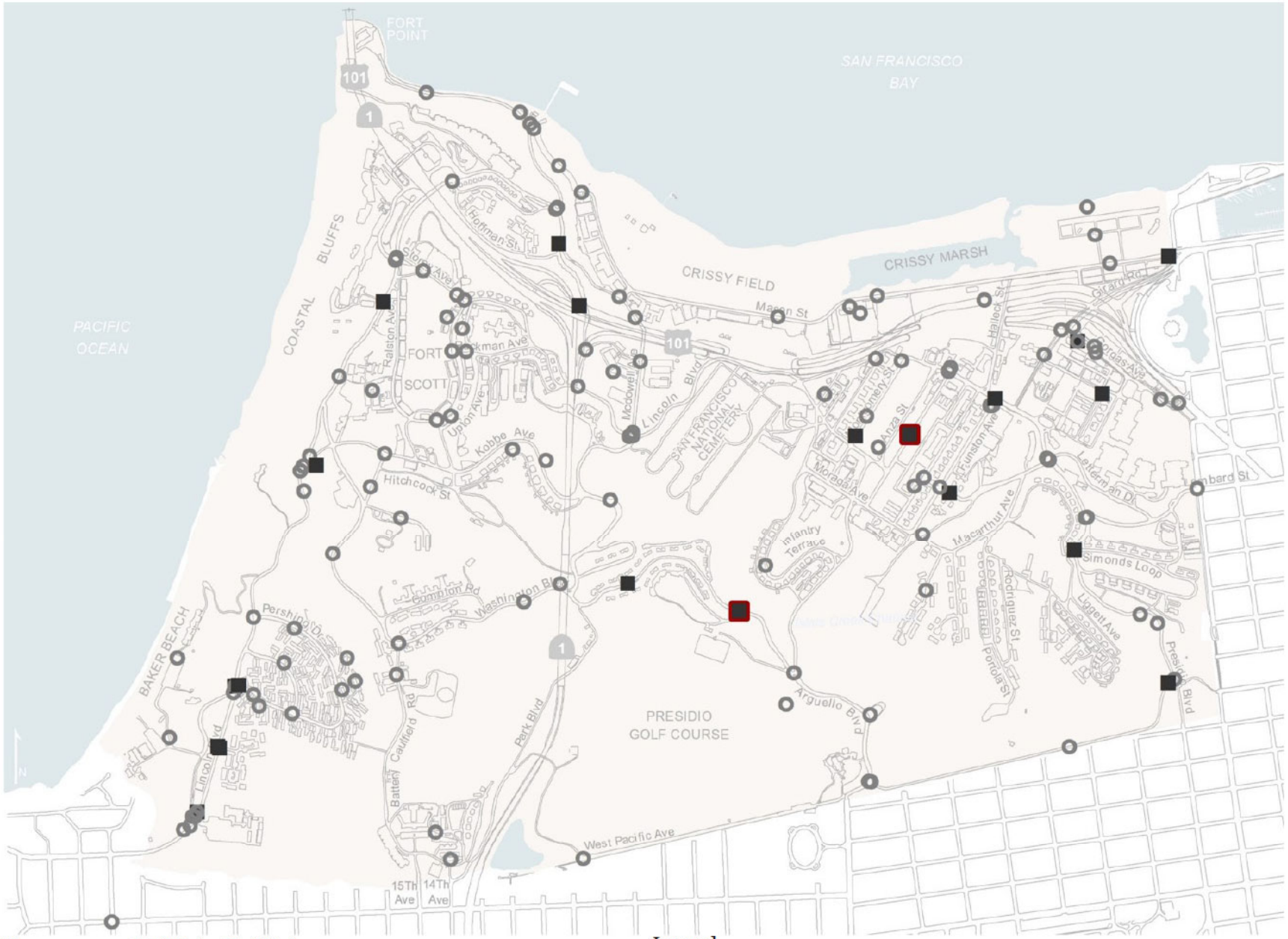

Figure 3-11: Vehicle Collisions

Legend

Cyclist Collision

Injury | Severe Injury | Property Damage Only

Source: US Park Police, 2014-2019

3) Cut-through Traffic

Cut-through vehicle traffic has been a concern in the Presidio for many years. As early as 2009, license plate surveys indicated that cut-through trips constituted one third or more of vehicle traffic at several Presidio gateways; more recently, a 2019 Presidio Trust analysis of StreetLight Data identified several pairs of gateways with particularly high volumes of cut-through traffic: Gorgas Avenue (East and West), Presidio Boulevard, Lombard Street, and Girard Road, shown in **Figure** 3-12.

As of 2019, about half of the vehicle trips passing through Presidio gateways were making a cut-through trip (51% of weekday PM peak trips and 46% of weekend midday trips). Based on CHAMP regional travel forecasts, that dynamic is likely to persist or worsen in the future, unless the Trust takes action to deter cut-through trips. The busiest cut-through routes were identified for vehicle treatments that prioritize local travel and deter convenience-focused cut-through trips.

PARKWIDE PROGRAMS AND POLICIES

In addition to a location-specific assessment of travel modes needs, the analysis team compiled information on parkwide programmatic improvement opportunities. The performance evaluation of these programs and policies is described below.

Pavement Management

The Presidio's pavement network consists of 32 centerline miles of streets and trails and 135 parking lots, which represents a substantial investment valued at approximately $94 million. In December 2020 and January 2021, the Presidio collected pavement condition data MTC's survey protocols. Survey data were entered into the StreetSaver® database, which the Presidio uses as a decision-support tool.

The pavement condition index is a numerical index between 0 and 100, which is used to indicate the general condition of a pavement section. Overall, the Presidio's pavement network is currently in "Fair" condition with an average pavement condition index (PCI) of 66. Approximately 42.1 percent of the network is in "Good" condition and 22.6 percent is in "Poor" or "Failed" condition. The Presidio is currently in the middle of a large maintenance and rehabilitation construction project, which when completed in mid-fall 2021 is expected to increase the network PCI to 71.

The pavement management budget needs analysis indicated that the Presidio needs to spend approximately $40.5 million over the next twenty years to bring every segment of the network to a good condition that can be maintained with on-going preventive maintenance. Even if every segment is not brought to good condition, substantial improvements can be made. Four budget scenarios were performed to illustrate the pavement condition impacts of different funding levels in the next five years, shown in **Table 6**. The table lists each scenario with its corresponding twenty-year budgets, PCI and deferred maintenance at the end of the analysis period. The average annual cost to maintain the network in years 6-20 is the same in each scenario ($1.7 million per year), but spending a modest additional amount in early years has a significant impact on the long-term condition of the pavement network.

Table 6: Pavement Management Budget Scenarios

Scenario	Budget ($M)			Avg. 2040 PCI	2040 Deferred Maintenance ($M)
	Total 20-Years	Average Years 1-5	Average Years 6-20		
1: Reduce Deferred Maintenance by 50%	35.6	2.1	1.7	74	6.8
2: Average Budget of $1.7M/year	33.9	1.7	1.7	72	9.1
3: Maintain PCI at 70	31.5	1.2	1.7	70	15.5
4: Maintain PCI at 66	28.9	0.7	1.7	66	20.3

Source: Nichols Consulting Engineering, 2021

For more details on this analysis, see **Appendix E.**

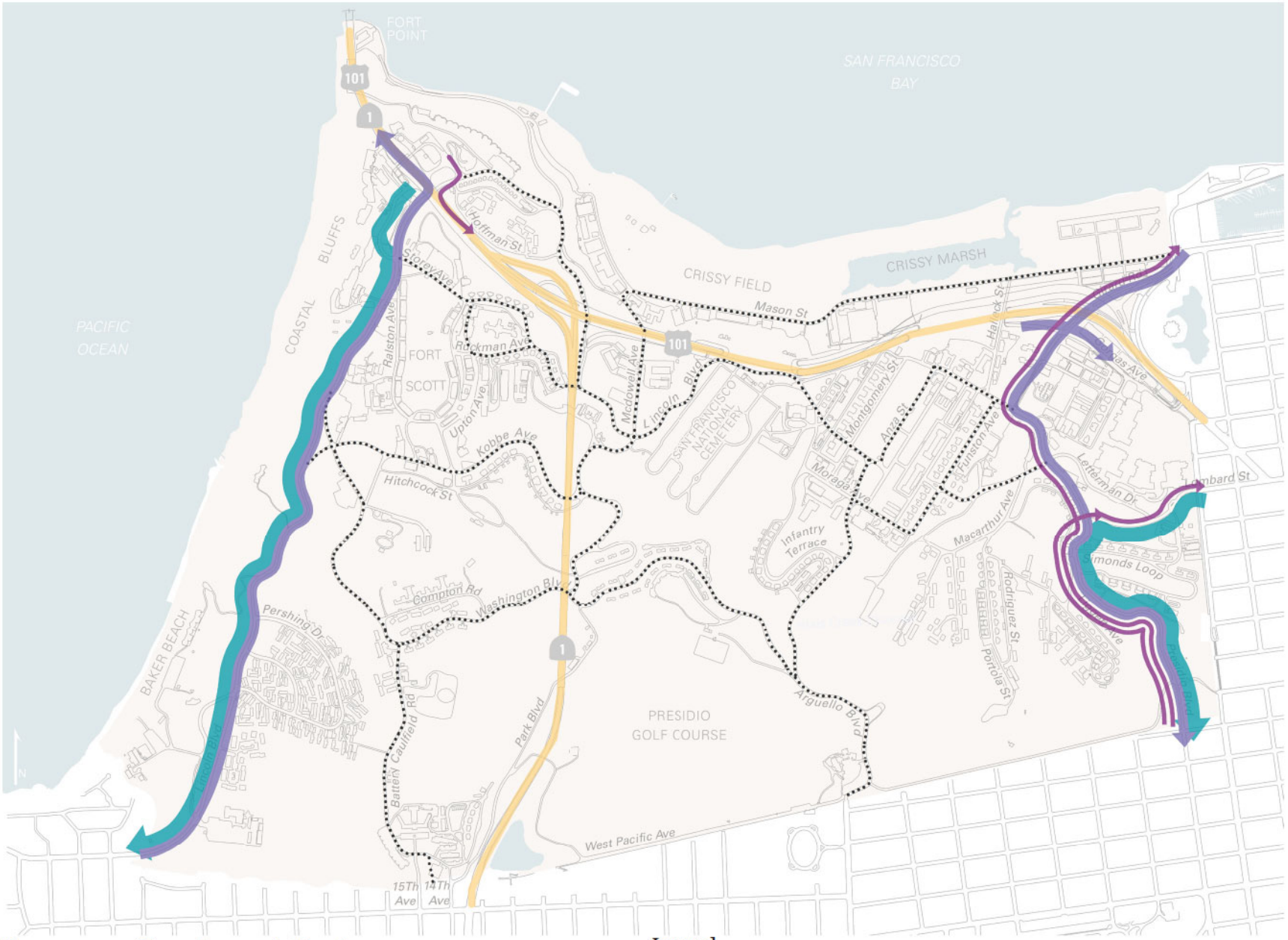

Figure 3-12: Pass-through Routes

Legend

Average Hourly Pass-through Trips

- 25 - 75
- 75 - 100
- 100 - 125
- Pass-through routes with less than 25 hourly trips
- Mainline Route

Source: StreetLight Data, 2018

Transportation Demand Management

The Trust's 2001 Transportation Demand Management (TDM) Program holds up well and serves as an umbrella policy for LoTIS implementation. In addition to a few tweaks mentioned in the Implementation Chapter, the key TDM strategy updates are changes to Parking Management policies.

Parking Management

The Trust identified opportunities for parking management policies and practices to better achieve the Trust's overall goals and take advantage of new parking management technologies, such as license plate recognition (LPR). A thorough review of parking policies and practices revealed four areas for improvement:

1. Effectiveness of Paid Parking
    a. Some parking is free and unrestricted, which limits demand management
    b. Some rates incentivize driving
    c. There are too many zones, which is confusing to visitors
2. Demand-Based Rate Adjustments
    a. Rates should be used to influence occupancy targets
    b. Current parking data is insufficient to set effective rates
    c. Rates could be adjusted more frequently
    d. Some spaces use both time limits and pricing, which is confusing to visitors
3. Communication and User Experience
    a. Parking information is not always easy to find, and all communication tools require hands-on update protocols
    b. Parking management policies are not available to the public
    c. Mobile payment options are not available
4. Enforcement of Paid Parking
    a. Parking enforcement is slow and manual and is done only when United States Park Police are available
    b. Consequence for not paying parking tickets is unknown to users, and citation revenue is not collected by the Trust
    c. Enforcement is not data-driven or performance-based

More details on the shift to LPR enforcement are included in **Appendix F.**

Lincoln Boulevard and Presidio Promenade trail

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04 Implementation Strategy

04 IMPLEMENTATION STRATEGY

The legacy of the LoTIS planning process is a "living" project database that tentatively divides projects between four implementation time horizons: next 5 years, 5-10 years, 10-20 years, and 20-30 years. The project list is a culmination of the needs assessment analyses and multiple rounds of feedback from the LoTIS Working Group and Trust Planning staff.

The criteria used to determine implementation timing is consistent with the LORIS scoring criteria and includes:

- Leveraging opportunities
- Financial impact (revenue generation, cost savings, or outside funding)
- Impacts of system failure
- Alignment with Trust strategic goals

This approach allows transportation projects to be integrated into the LORIS list and objectively prioritized relative to building, utility and other types of projects. LoTIS implementation will roughly align with the timing for strategic zones identified in the LORIS as shown in **Figure** 4-1.

This section presents the implementation tools that Presidio Trust staff will use to access, re-assess, and act on the project list recommendations. Implementation highlights are presented for each of the modal networks and parkwide programs and policies.

MODAL NETWORKS

Project improvements were identified for the pedestrian, bicycle, transit, and vehicle networks based on the mode-specific needs assessment analyses. Each project was assigned a needs score based on the results of these analyses. These scores offer, at a glance, a review of the project's benefits with respect to facility usage, safety, connectivity, and comfort. A complete record of needs scores is available in **Appendix D**.

Pedestrian

A list of long-range pedestrian network improvements was developed to provide adequate capacity in high volume areas, address locations with a history of pedestrian collisions, and close pedestrian gaps, especially those that greatly inhibit the walkshed to activity centers and transit services.

Primary Pedestrian Network

Analysis of pedestrian activity and existing pedestrian facilities informed the creation of a Primary Pedestrian Network that envisions a cohesive network of pedestrian routes (including sidewalks, paved trails, and crosswalks) connecting residential, commercial, and recreational opportunities around the Presidio.

Routes on the Primary Pedestrian Network will have at minimum:

- Sufficient facilities to promote the safety and comfort of pedestrians of all ages and abilities
- Adequate, context-sensitive pedestrian-scale lighting
- Clear pedestrian-oriented wayfinding

Many of the designated routes already meet these criteria. Key gaps include portions of Washington Boulevard, Kobbe Avenue, and Storey Avenue.

Projects on the Primary Pedestrian Network, shown in in **Figure** 4-2**,** receive an extra point towards their needs assessment score.

Accessibility Enhancements

The Trust's 2020 Accessibility Study developed a list of projects that will improve mobility for people walking. Types of projects include new or updated curb ramps, rebuilding sections of sidewalk, addressing tripping hazards, and removal of obstructions. These projects may be grouped and completed with other bundle projects or completed independently.

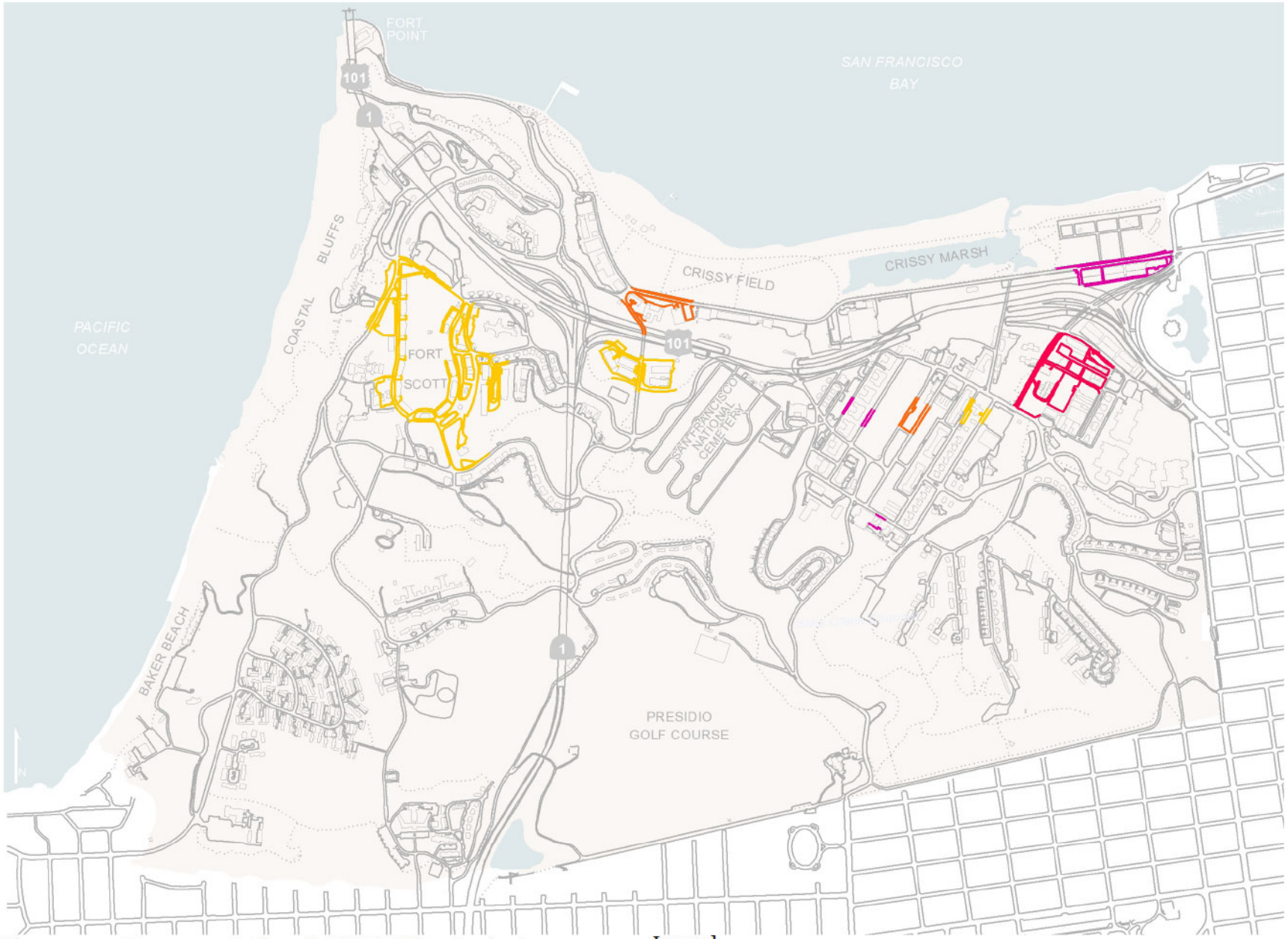


Figure 4-1: Transportation & LORIS Strategic Areas

Source: Presidio Trust, 2021

Figure 4-2: Primary Pedestrian Network

Source: Fehr & Peers, 2021

Bicycle

A list of long-range bicycle network improvements was developed to provide adequate capacity in high volume areas, address locations with a history of bicycle collisions, eliminate LTS 3 and 4 sections in the Presidio, and close low-stress gaps, especially those that greatly inhibit the bikeshed to activity centers and regional bike routes.

Primary Bicycle Network

Analysis of bicycle activity and existing bicycle facilities also informed the creation of a Primary Bicycle Network that envisions a cohesive network of bicycle routes connecting residential, commercial, and recreational opportunities around the Presidio.

Routes on the Primary Bicycle Network will have at minimum:

- Sufficient facilities to promote the safety and comfort of cyclists of all ages and abilities
- Adequate, context-sensitive bike-scale lighting
- Clear bike-oriented wayfinding

The Projects on the Primary Bicycle Network, shown in **Figure** 4-3, receive an extra point towards their needs assessment score.

Transit

PresidiGo service goals were developed as part of the service evaluation. To support the Trust's Strategic Goals, the PresidiGo system should aim to:

- Provide convenient access to jobs and services for residents and employees
- Maximize ridership through efficient operations
- Encourage the shift away from private vehicles by providing a convenient and competitive service
- Remain cost-effective

PresidiGo Service Improvements

Appendix H provides details on the following recommended service modifications:

- Increase midday frequency on the Downtown Route to support non-traditional commutes, access for visitors and access to services for Presidio residents
- Modify stop locations on the Downtown Route to improve connections to the Salesforce Transit Center and the Central Subway
- Provide a new Arguello Route connecting the Main Post and Letterman District to services and high-capacity transit routes like the 28R in the Inner Richmond
- Implement a stop improvement program within the Presidio to upgrade and standardize stop amenities, including shelters and signage, and assure accessibility for all
- Explore a future combination of the Downtown and Presidio Hills Routes into a one-seat ride between Baker Beach and Downtown San Francisco

Vehicles

A list of long-range vehicle network improvements was developed to provide adequate capacity for high volumes vehicle corridors, address locations with a history of vehicle collisions, enhance safety and comfort for all users, and reduce cut-through trips. Vehicle projects are not necessarily those which benefit vehicles but those which will have a notable impact on vehicles. Most vehicle projects overlap with bicycle and pedestrian projects.

Parkwide Speed Limits

In addition to location-specific improvements, a two-phase speed limit program is recommended to reduce vehicle speeds throughout the Presidio. The first phase will add speed limit signs to currently unsigned sections, and the second phase will re-evaluate speed limits and make reductions where safety issues or speeding continue to be an issue.

Figure 4-3: Primary Bicycle Network

Source: Fehr & Peers, 2021

Cut-through Mitigations

Mitigation measures for cut-through traffic aim to make common cut-through routes less desirable or accessible to through traffic.

Major Cut-Through Mitigations: turning restrictions, roadway closures, traffic calming, speed limit adjustments

Minor Cut-Through Mitigations: traffic calming, Slow Streets designation, wayfinding signage, speed limit adjustments

Some mitigation measures can be implemented on a major vehicle route, such as the western portion of Lincoln Boulevard, while others are more appropriate on a more minor route, such as Letterman Drive.

With any potential treatment, it is important to balance the upsides of deterring cut-through trips with the potential of inconveniencing Presidio-based trips.

PARKWIDE PROGRAMS AND POLICIES

The following parkwide programs and policies are also catalogued in the project database, although only some are spatial in nature. These efforts help the Trust implement the Strategic Goals and transportation objectives shared in the Introduction of this report.

Slow Streets

As part of LoTIS planning, the Trust completed a slow streets selection process to evaluate and identify appropriate slow street locations and treatments. Slow street suitability was evaluated based on roadway classification, surrounding land uses, slope, potential to close gaps in the Primary Pedestrian Network and Primary Bicycle Network, and access to trails. The result is a list of vetted slow street candidates to aid the Presidio Trust with future slow street decisions. Slow streets are not appropriate everywhere in the Presidio, but, as the program evolves beyond the quick-build incarnations tested during the Covid-19 pandemic, they may become a useful tool to reduce cut-through trips and expand low-stress bicycle and priority pedestrian access. Details on the slow streets selection process and recommendations are available in **Appendix I**.

Pavement Management

The Presidio will pursue pavement management Scenario 1 described in the Needs Assessment Chapter, which will reduce the network deferred maintenance by 50 percent in the first five years and then maintain it at the reduced level. This will require a total of $35.6 million over 20 years and will result in the average PCI increasing and being maintained at 75 (±1 PCI point). The portion of the network in "Good" pavement condition will more than double by 2040.

Pavement Right-Sizing

One of the Trust's strategic transportation objectives is to minimize the environmental impact of transportation-related infrastructure. One strategy to meet this objective is to remove pavement where it is unnecessary, making way for stormwater management enhancements and new space to support biodiversity. This includes opportunities on wide roadways and at oversized intersections, as well as in underutilized parking lots.

Roadways

A handful of roadways and intersections with excess capacity were identified, and those that overlap with stormwater management priority areas are prioritized in the LoTIS project database. These projects are grouped into bundles like all other spatial projects and can be efficiently implemented alongside overlapping pavement management treatments.

Parking

Most parking in the northern half of the Presidio is in high demand today and will only become more desirable as Tunnel Tops opens and employment and residential intensity increases in those neighborhoods over the coming decades. The southern half of the Presidio, including the southeastern neighborhoods, the Arguello corridor, and the Public Health District, may have excess parking based on a review of existing parking supply and projected demand in the future. These lots may present opportunities for pavement and parking removal.

Transportation Demand Management

The following updates are recommended for the Trust's existing TDM Policy:

- Initiate regular tenant surveys and offer regular Employee Transportation Coordinator Trainings on new programs and policies.
- Implement aggressive telecommute goals for Trust staff who do not need to be in the park every day to complete their job
- Require employers to offer corporate carshare and bikeshare memberships and arrange for bikeshare and carshare options in employment hubs
- Implement tiered parking pricing in residential neighborhoods
- Provide high-speed internet in residential neighborhoods to incentive work-from-home as an attractive option for tenants

The two most impactful TDM adjustments recommended as part of the LoTIS are the parking management strategies discussed below and the PresidiGo service improvements discussed above and in **Appendix H**.

Parking Management

Parking management adjustments are relatively low-cost with potentially significant mode shift and revenue outcomes. All parking-related projects are programmed in the "short-term" list of projects in the LoTIS.

To address the four areas of improvement identified in the Needs Assessment chapter, the Trust developed a set of proposed parking policy updates. All parking-related projects will be included in the "short-term" list of projects in the LoTIS. The full list of proposed policies can be seen in **Appendix G**.

Although most parking management adjustments are policy and communication changes, in the very near-term the Trust is switching to a pay-by-plate system and implementing a mobile payment option, which allows for more effective enforcement via license plate recognition (LPR). To realize the full benefit of pay-by-plate and mobile payment options, the Trust must invest in LPR technologies, either handheld or vehicle-mounted, to conduct enforcement.

A detailed study of enforcement options is included in **Appendix F.**

FUNDING SOURCES

Full implementation of the LoTIS project list requires significant funding beyond the Presidio's own internal budget. The following funding sources present the largest opportunities for LoTIS implementation.

Federal Lands Planning Program

The Federal Lands Transportation Planning Program (FLPP) was established in Title 23 U.S.C. to implement transportation planning for Federal lands and Tribal transportation facilities that are consistent with the Statewide and Metropolitan transportation planning procedures under Title 23 U.S.C. Sections 134 and 135. The funding of the FLPP is capped at 5% for each fiscal year of the funds authorized under 23 U.S.C. Sections 203 and 204 (Federal Lands Transportation and Federal Lands Access programs). Activities under the Federal Lands Planning Program include long range transportation plans; performance management activities -- including the development and implementation of safety, bridge, pavement, and congestion management systems; road and bridge inventory; and development and updating of the Transportation Improvement Program.[6]

Federal Lands Transportation Program

The Federal Lands Transportation Program (FLTP) was established in Title 23 U.S.C. 203 to improve the transportation infrastructure owned and maintained by Federal Land Management Agencies (FLMA).

The Trust currently receives approximately $2,000,000 per year in FLTP funds, which are used on a variety of transportation infrastructure projects, including pavement rehabilitation, bicycle and pedestrian improvements, accessibility improvements, and the purchase of battery electric buses.[7]

[6] Federal Lands Planning Program (FLPP) | FHWA (dot.gov)

[7] Federal Lands Transportation Program (FLTP) | FHWA (dot.gov)

Federal Lands Access Program

The Federal Lands Access Program (FLAP) was established in Title 23 U.S.C. 204 to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. The FLAP supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators.

Transportation Fund for Clean Air

The Bay Area Air Quality Management District (BAAQMD) allocates a portion of vehicle registration fees to its Transportation Fund for Clean Air (TFCA) program to fund eligible projects. The Presidio Trust currently receives $120,000 in TFCA regional funds annually to support Downtown Shuttle route operations. In the near term, the Trust is confident that it is well positioned to continue receiving funding based on the cost effectiveness of PresidiGo. Around-the-Park routes are not eligible for BAAQMD funding because the project must support residents or workers of multiple counties.

Letterman Digital Arts Center

The Trust receives tenant contributions of $192,000 annually from the Letterman Digital Arts Center (LDAC) to support PresidiGo service for LDAC employees per the terms of the service agreement.

IMPLEMENTATION TOOLS

Two tools will be critical in implementing the LoTIS project list: the interactive webmap and a set of performance metrics. Both will allow the Trust to be responsive and agile as priorities and external pressures shift.

LoTIS Webmap

The project list is stored in a database that can be viewed through a webmap. This allows projects to be viewed spatially and potentially overlaid with other parkwide efforts such as utility or landscaping improvements. **Appendix J** contains a full list of LoTIS Projects.

Webmap features include:

Point-and-Click: click on a roadway segment or parking lot to view the list of the projects in that localized area.

Spatial Filter: Narrow the list of projects displayed on the map by using one or more filters, including cost, project type, and implementation timing.

Database Query: Return a subset of projects based on pre-set or custom queries. Browse the list in the map viewer or export to CSV.

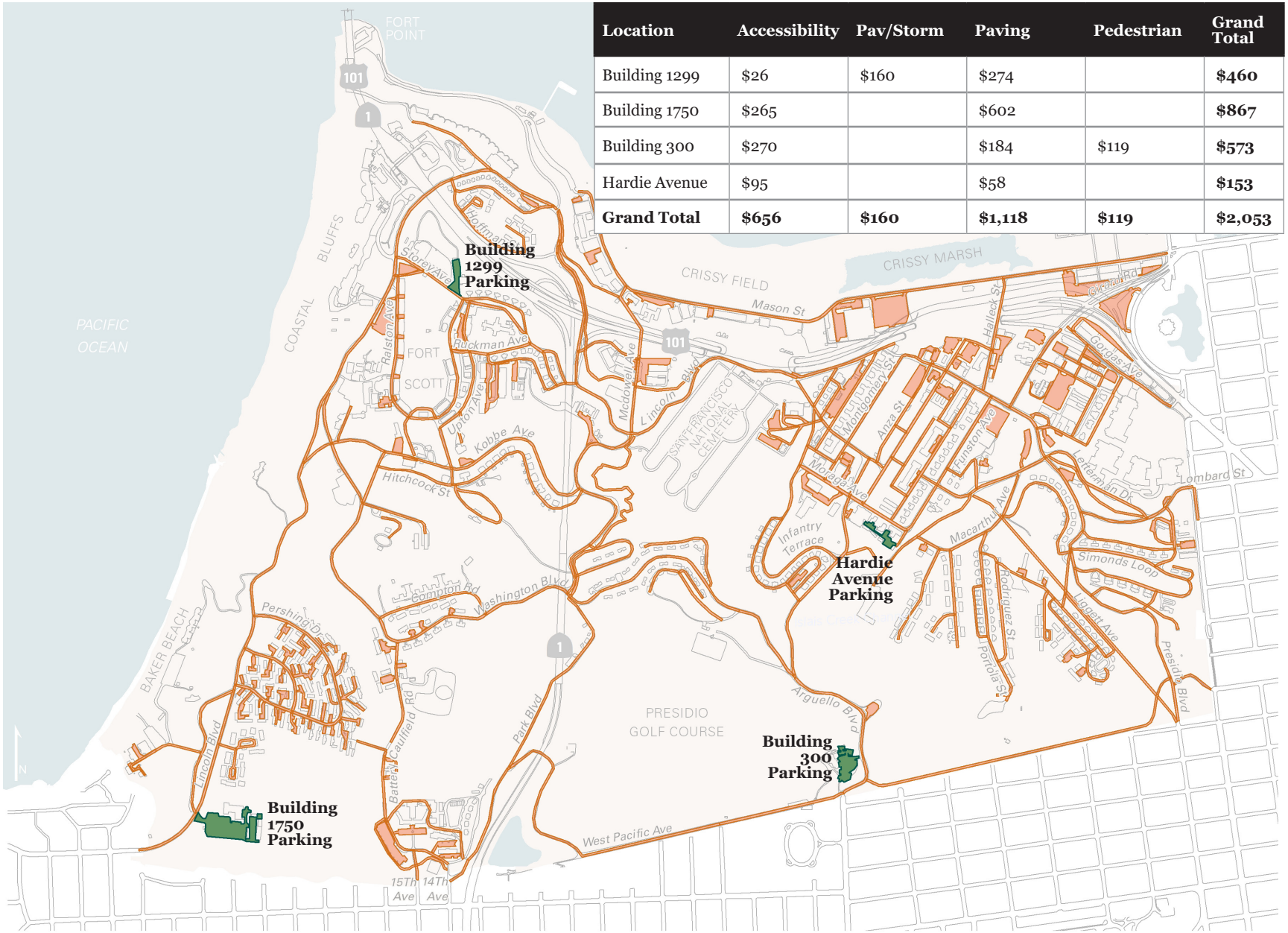
Project Bundles

Projects are grouped into spatial bundles that correspond with pavement management study segments. As an example, Storey Avenue is comprised of three bundles, and each bundle contains a subset of projects (listed by type below):

- Lincoln Blvd (west) to Ralston Ave
  - Bicycle, multi-modal, pedestrian, paving removal, pavement management, and accessibility
- Ralston Ave to Ruckman Ave
  - Bicycle, pedestrian, pavement management, and accessibility
- Ruckman Ave to Lincoln Blvd (east)
  - Bicycle, pavement management, and accessibility

Every bundle has pavement management projects, and most bundles have accessibility projects, while other project types are more sparsely distributed throughout the park in response to the needs identified above.

Bundles are an organizational tool to help the Trust find construction and cost efficiencies under the dig-once principle. Rather than plan a repaving project, curb ramp project and crosswalk project in three consecutive years on the same stretch of road, the Trust can see these overlaps in the map bundles and implement these projects simultaneously. **Figure** 4-4 shows how this might occur within a few Presidio parking lots. Due to funding availability and construction timelines, combining projects will not always be the right course of action, but the bundle organization ensures that these opportunities will be obvious to planners and decision-makers.



Location	Accessibility	Pav/Storm	Paving	Pedestrian	Grand Total
Building 1299	$26	$160	$274		**$460**
Building 1750	$265		$602		**$867**
Building 300	$270		$184	$119	**$573**
Hardie Avenue	$95		$58		**$153**
Grand Total	**$656**	**$160**	**$1,118**	**$119**	**$2,053**

Figure 4-4: Project Database - Project Type Overlaps

Source: Presidio Trust, 2021

Project Attributes to Track and Adjust

The following attributes are available and editable for all projects in the database. As projects progress and priorities change, the Trust can update these attributes and add new projects.

- Project Name
- Project Description
- Project Type
- Project Location (if spatial)
- Bundle Assignment
- Timing
- Design Cost, Bucket (simplifies cost into one of four cost ranges for display on the webmap)
- Design Cost, Detail
- Construction Cost Bucket (simplifies cost into one of four cost ranges for display on the webmap)
- Construction Cost, Detail
- Implementation Status
- Collaboration Opportunity Notes (to be used for gateway or access projects that offer collaboration opportunities with partner agencies)

Figure 4-5 shows all projects provisionally planned between 2020 and 2025 and highlights one example project.

Performance Metrics

To assess progress toward strategic goals and ensure that implementation priorities remain in the right order, it is important to track transportation performance data over time. For a monitoring plan to be effective, it must be feasible (e.g., reasonable resources and staffing for counts and program management), and the data collected must relate to established performance measures. The performance measures in **Table 7** meet these criteria and should be collected annually or more frequently to track progress.

Given the disruption and uncertainty created by Covid-19, many of the performance targets are unspecified (i.e., X%) with the intention that the Trust Transportation Team will set targets after a couple years of post-Covid monitoring. These targets should be achievable and push the Presidio closer to its Strategic Goals.

A few metrics require periodic surveys of PresidiGo riders, employees, and residents. Questions about PresidiGo satisfaction and mode share should be incorporated into regular Trust surveys of residents and visitors. The Trust should also request that employers incorporate these questions into their regular employee TDM surveys.

Table 7: LoTIS Performance Metrics

METRIC	TRUST GOAL	METRICS PURPOSE	PERFORMANCE TARGET (% target to be set each year based on market conditions)
PresidiGo Ridership	People + Planet	Track trend in ridership on all routes.	X% annual increase
PresidiGo On-Time Performance	People + Planet	Measure reliability of PresidiGo service.	X% of scheduled runs
PresidiGo Travel Time	People + Planet	Maintain PresidiGo competitive edge by tracking travel time between downtown SF & Presidio by PresidiGo vs. car	PresidiGo travel time is <=5 minutes longer than car
PresidiGo Service Cost	Performance	To ensure Trust resources are being used in a way that maximizes benefit.	<$X.XX
PresidiGo Passenger Satisfaction	People	Ensure continued success of PresidiGo service and identify any areas of improvement.	>=8 out of 10 average survey score
Injuries from Crashes or Tripping	Performance	Ensure the Presidio is a safe environment for visitors, residents, and employees.	Fewer than the previous year, with a long-term goal of zero.
Bike Share Use	People + Planet	Track trend in number of bike trips over time.	2,000 rides/month

METRIC	TRUST GOAL	METRICS PURPOSE	PERFORMANCE TARGET (% target to be set each year based on market conditions)
Parking Revenue	Performance	Support Presidio Trust operations, including the PresidiGo shuttle.	>$X/year
Travel mode share (auto, carpool, private bike, bikeshare walk, PresidiGo, other transit)	People + Planet	Track trends in mode choice and compare mode share to PTMP goals.	Less than 50% external trips by auto; less than 35% internal trips by auto

Next Steps

The LoTIS is a living strategy, and these tools are intended to create a cycle that moves from Plan to Implement to Measure to Re-Prioritize and back to the beginning again. The LoTIS process was thorough in assessing transportation needs and possibilities, and yet the implementation priorities are flexible and expected to change over time. Priorities may change in the wake of Covid-19 and then change yet again in the wake of a return to "normal." This report, the appendices, and the implementation tools provide a roadmap and a decision-making framework to guide the Trust through these and future changes.

Looking toward Fort Scott Tennis Courts from Kobbe Avenue

WASHINGTON BLVD FROM DEEMS TO ARGUELLO	
Project Location	Washington (S side) between Nauman and Arguello
Description	Close pedestrian gap; consider ped-scale lighting
Timing	2020-2025
Type	Pedestrian
Construction Cost	Greater than $500K
Design Cost	$50K-$250K

Figure 4-5: Project Database - Near Term Projects with Example

Source: Presidio Trust, 2021