



# MISSION ROCK

TRANSPORTATION  
PLAN





burger  
coffee  
cafe

pancake  
tea  
espresso

coffee  
juice  
sandwich

burger  
toast  
pancakes

SPECIALS





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# MISSION ROCK

## TRANSPORTATION PLAN

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# MISSION ROCK DESIGN DOCUMENTS

The Transportation Plan comprises the fifth in a set of five documents which together describe the requirements for the development of Mission Rock.



## MISSION ROCK VISION & DESIGN INTENT

This document contains the big picture thinking and aspirations that will guide the process for the design and implementation of Mission Rock.



## MISSION ROCK DESIGN CONTROLS (DC)

This document guides the development of the open spaces, streets, and buildings at Mission Rock. The DC ensures that the site will be developed in a way that is consistent with the vision as defined in the Mission Rock Vision and Design Intent document.





# MISSION ROCK

SUSTAINABILITY  
STRATEGY

## MISSION ROCK SUSTAINABILITY STRATEGY

This document identifies the high level sustainability goals for Mission Rock, details the requirements for the horizontal and vertical development and summarizes the anticipated reduction in greenhouse gas (GHG) emissions resulting from the district's approach to sustainable design.



# MISSION ROCK

INFRASTRUCTURE  
PLAN

## MISSION ROCK INFRASTRUCTURE PLAN

The design of the landscape, buildings, and sustainability strategies will be closely coordinated with the infrastructure planning at Mission Rock. This plan regulates the complex coordination of streets, utilities, and services.



# MISSION ROCK

TRANSPORTATION  
PLAN

## MISSION ROCK TRANSPORTATION PLAN

This plan describes the ways in which the site will be designed to support the mobility choices of all users, with a special emphasis on safe and comfortable conditions for pedestrians and cyclists.







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Located just steps from the center of the Bay Area's transportation system and along one of the premiere bicycle and pedestrian routes in the region, Mission Rock is poised to be a model for sustainable transportation. With a multitude of mobility choices built directly into the site's DNA, it will be one of the first true 21st Century developments in San Francisco.

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Small, walkable blocks, wide sidewalks, and a diverse mix of uses will make it easy for those who live or work at Mission Rock to avoid traveling far to eat or shop for everyday necessities. A range of cycling facilities will ensure that cyclists of all ages and skill levels are comfortable navigating the site on two wheels. The opening of the Central Subway will mean frequent, rapid service to Market Street and downtown is just

steps away via the T-Third Muni Metro line, and access to the Peninsula and South Bay is just a few minutes further at Caltrain's 4th and King Street terminal. Supplemented by a suite of services and incentives that will make it easy to choose any mode, this wide range of mobility options mean the site will truly be a good fit for any modern lifestyle.

# 01

## INTRODUCTION



# 1.1 OVERVIEW

This document details how Mission Rock will achieve this vision. It starts by laying out the elements of the project's context that make it an ideal fit for a moment in which San Franciscans are choosing to accomplish more and more each year by a range of modes (Chapter 2). It walks through plans for the design of the site's internal streets, describing how bikes, pedestrians, and vehicles will circulate through the site and connect to its surroundings (Chapter 3). Mission Rock is committed to a robust set of infrastructure investments and ongoing programs that will make it easy to choose modes like walking, biking, and taking transit, and Chapter 4 details the planned package of transportation demand management (TDM) programs. With AT&T Park just steps away from the site, event-related travel will have an important impact on circulation patterns. Chapter 5 walks through how circulation will be managed around events to help reduce impacts on residents and employees, both on the site and in the surrounding neighborhood.

Note that this document focuses on the site's transportation programs at full build-out. The Infrastructure Plan discusses how the project will be phased and implications for the site's physical infrastructure, including transportation.



The proposed project, aerial view simulation from the northwest



## 1.2 GOALS

Mission Rock aims to do the following through its transportation program:

1. Facilitate lifestyles low in vehicle miles traveled (VMT) by providing a robust set of sustainable choices for movement to and from the site
2. Create a vibrant, pedestrian-oriented, and visually interesting public realm within the site
3. Connect seamlessly to the site's broader context, including the City's growing bike network, the Mission Bay neighborhood's developing network of streets and sidewalks, and the city and region's transit systems
4. Ensure that the site is adaptable to new transportation technologies and changing travel habits over time
5. Play a productive role in the City's efforts to manage event-related travel



Shared Public Way, the shared street that will serve as the primary north-south pedestrian route through the site



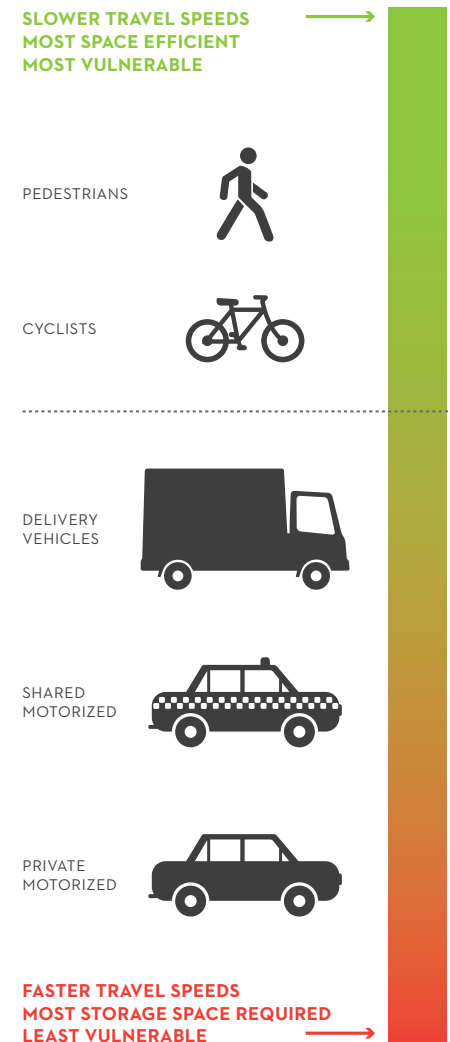
Terry A. Francois Boulevard, another shared street, will have a more maritime-industrial character



## 1.3 STRATEGIES

The project will accomplish those goals through the following primary strategies:

- ▶ Prioritize movement on-site using a modal hierarchy that puts the focus on the most space-efficient and environmentally sustainable modes
- ▶ Encourage walking, biking, and taking transit through convenience and meaningful incentives
- ▶ Design a highly connective street grid with generous and active pedestrian areas
- ▶ Allow for a diverse mix of uses that enables residents and employees to avoid long trips for daily necessities
- ▶ Design for safety through smart deployment of traffic calming strategies on internal streets
- ▶ Facilitate bike connectivity by adding an important link to City and regional bike networks through the site and providing safe and comfortable routing options for people of all cycling skill levels
- ▶ Create generous curb-side loading areas to:
  - ▶ Facilitate site access for people with mobility limitations and for families with small children
  - ▶ Facilitate the use of taxis and ride hail services, which can help obviate the need to bring a personal automobile to the site
  - ▶ Help site users avoid vehicle trips by facilitating convenient delivery of goods
- ▶ Actively manage parking to ensure it is used efficiently as part of the larger multimodal network
- ▶ Work in concert with neighborhood groups to help in responsibly managing event-related travel



A modal hierarchy for travel through Mission Rock



The figure on this page shows the site's urban street grid and mixed land-use plan. The site plan and approach to circulation are two key ingredients in making the transportation vision come to life.

-  Residential
-  Commercial
-  Flex
-  Working Waterfront
-  Structured Parking









# 02

## PROJECT CONTEXT

Mission Rock's location, mix of uses, density, and design approach are all consistent with regional trends in land use and transportation and supportive of Bay Area planning agencies' efforts to direct new housing toward urban infill locations near transit stations.

The site's mix of uses, including residential, commercial, and retail, will make it easy for residents and employees to take care of most needs within a short walk, and the project's location will naturally facilitate the use of transit and other shared modes for longer-distance trips.

This chapter details the context into which Mission Rock fits. It looks at the broader trends and policy context, as well as the array of local transportation resources that will help make the site's sustainable, multimodal vision come to life.



## 2.1 TRENDS IN POLICY AND TRAVEL BEHAVIOR

Mission Rock fits into a larger context of city, regional, and state policy encouraging transit-oriented mixed-use development, as well as the emergence of new transportation options that are changing the way Bay Area residents travel to work and play. The project is poised to both take advantage of the new mobility options and further encourage these shifts.

### 2.1.1 STATE, REGIONAL, AND CITY POLICIES

Starting in 2006, the State of California began laying out a constellation of policies aimed at reducing the state's carbon footprint. Assembly Bill (AB) 32, signed into law in 2006, required that the state reduce greenhouse gas emissions to 1990 levels by 2020, a 15 percent reduction relative to expected trends. Senate Bill (SB) 375 was the first major policy aimed at implementing AB 32. It required that each major region in the state create a "sustainable communities strategy" that would use a combination of land use and transportation planning to create more sustainable development patterns. Furthermore, the City of San Francisco's Climate Action Strategy specifically calls for shifting 80% of all trips to non-automobile trips by 2030.

Plan Bay Area is this Bay Area's sustainable communities strategy, and concentrating growth around the existing transit system is a key pillar of the plan. The plan identified Priority Development Areas with strong transit access and higher existing densities, and Mission Rock sits along a major axis of priority development areas along the eastern edge of San Francisco.

Infill and transit-oriented development are the two most important strategies for developing in a more sustainable fashion. When projects are located in areas that are already developed, they generally allow their inhabitants to travel shorter distances to reach jobs,

grocery stores, and other daily destinations. When located near existing transit networks, they make transit the default mobility option.

Infill development has long been a priority for the City of San Francisco, and the City has an array of policies aimed at aligning the transportation system to denser development patterns. Policies include the city's long-standing "transit first" policy, a 20% bicycle mode share goal, and a collection of recent policy changes - known as the Transportation Sustainability Program - that aim to further invest in transit, bike, and pedestrian network improvements, align the environmental review process for development with other city policies, and shift travel behavior toward non-motorized or shared modes while ensuring access and mobility. Mission Rock's transportation program is consistent with this approach.

With these policies in the background, travel behavior in San Francisco seems to be steadily shifting toward transit and non-motorized modes, and the market for developments that enable transit-, bicycle-, and pedestrian-oriented lifestyles has strengthened. The last few years have seen increases in transit ridership (including record ridership levels on BART and Caltrain in recent years) and major increases in cycling, particularly for commutes.

### 2.1.2 THE IMPACT OF TECHNOLOGY

New technology-enabled travel options have also emerged, making it easier to routinely travel longer distances or make trips that do not align well to the transit network without owning a car. Car share companies like Zipcar and City Car Share have made it easy to rent vehicles, stored conveniently in small pods across the city, for short periods. This allows people who

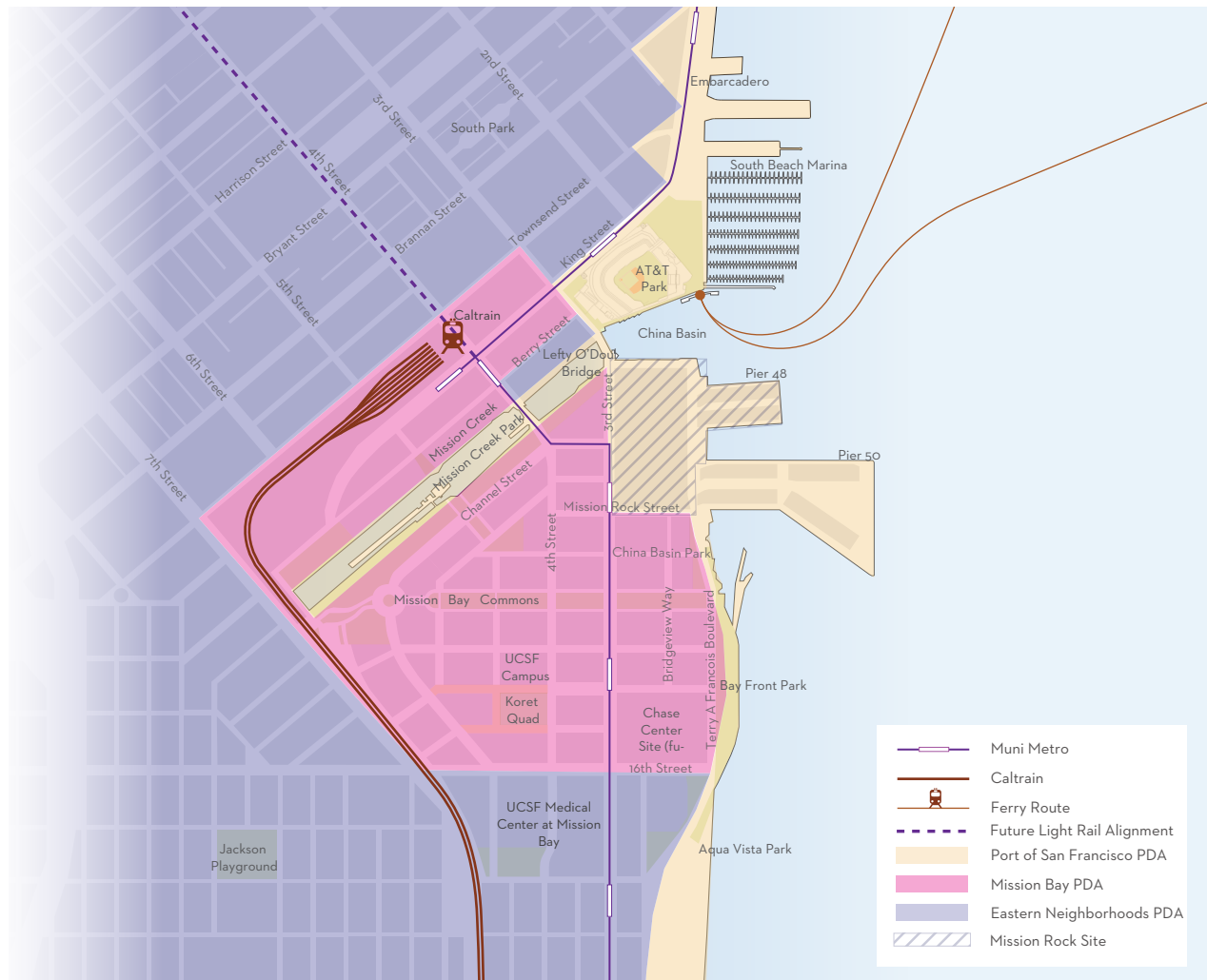
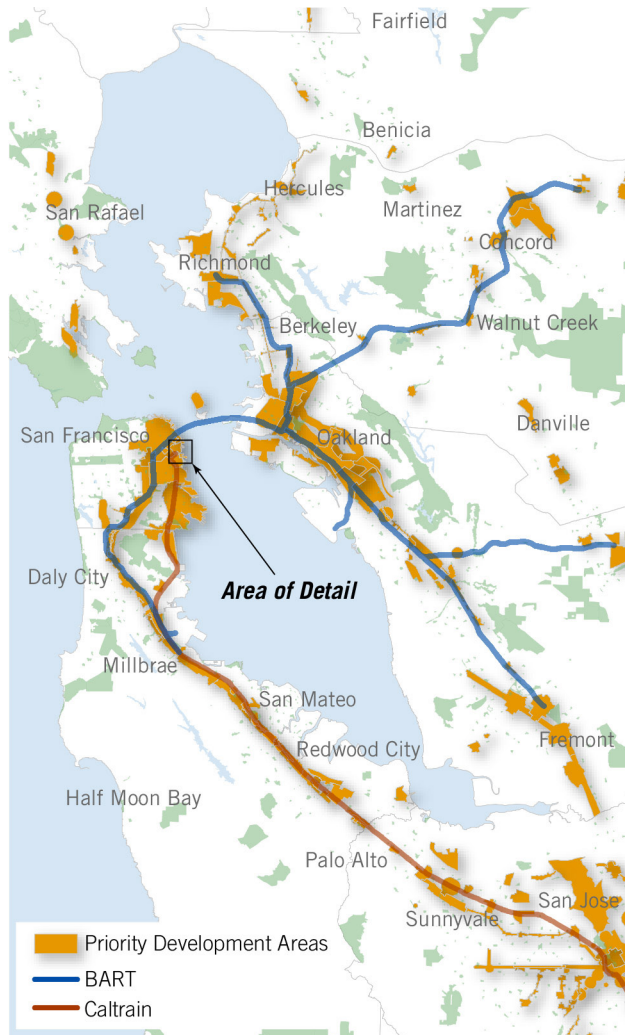


SFMTA has installed "red carpet" transit-only treatments around the city in recent years (SFMTA)



Cycling rates have increased dramatically in recent years (FLICKR USER RICHARD MASONER)





Plan Bay Area's Priority Development Areas (PDAs) and regional transit connections



do not own a car to conveniently accomplish errands that require hauling more than one can carry on transit or a bicycle. Transportation network companies (TNCs) like Uber and Lyft and taxi hailing apps like Flywheel have made it far easier and more convenient to hail rides for trips the transit system is less well set up to handle – across town or late at night.

These trends and the new suite of travel options seem to be affecting people’s behavior. A recent study showed that newcomers to the city began taking advantage of them as they emerged, with nine in 10 net new households in the city since 2000 not owning an automobile, according to data from the U.S. Census Bureau. Additional evidence from the Shared Use Mobility Center (TCRP Report 188) shows that individuals who use car sharing frequently tend to own vehicles at lower rates.

### 2.1.3 THE FUTURE OF TRANSPORTATION

More dramatic changes could be in the offing. In the middle of 2016, several companies announced the first limited public use of autonomous vehicles, in Pittsburgh (Uber) and Singapore (nuTonomy). Google has been developing its own autonomous vehicles and testing them around its Mountain View headquarters for several years, and several other major Bay Area companies are also working hard – sometimes in partnership with more traditional auto companies – to develop their own models. When autonomous vehicles emerge in large numbers, the Bay Area is likely to be an area that adopts them quickly.

The precise effects self-driving cars will have on urban environments is unclear, given that the technology

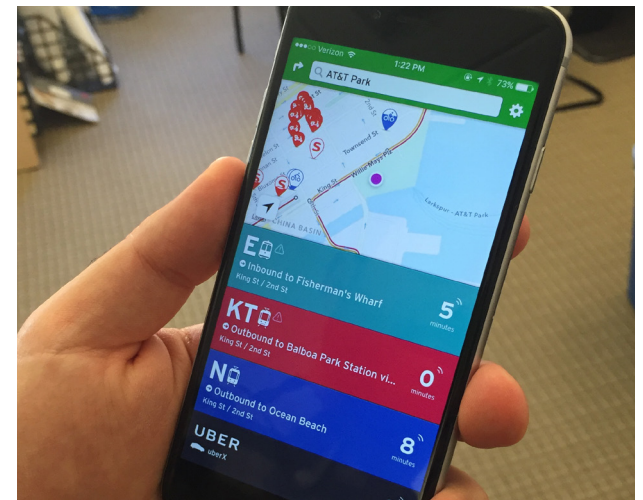
is still in the early stages of development. What is clear, though, is that they have the potential to dramatically change the way we get around, as the advent of motorized mobility did 100 years ago. Indeed, the emergence of automobiles in the early 1900s reshaped the economics and urban space needs of the transportation system.

If autonomous vehicles are used mainly as shared mobility resources, rather than privately held ones in the pattern of the vast majority of small vehicles today, they could lead to shifts like a major drop in parking demand and a major increase in the need for passenger loading space. Even if they emerge as privately owned mobility resources, though, the urban parking footprint is likely to go down. For example, if autonomous vehicles are able to communicate with each other while parking, they could theoretically squeeze together more efficiently, in much the same way as cars parked by valet can be lined up and parked in more narrow columns than can self-parked cars.

Mission Rock is set up to weather these changes well. As Chapter 3 describes, the site’s curbs prioritize loading and delivery activities, which have already taken on increasing importance with growth in online shopping and, more recently, the earliest releases of new mobility technologies. The ways in which the site’s transportation program has been shaped by its location will also help its design stay current in a world of changing mobility patterns. As detailed in the following sections, Mission Rock is located at the heart of the region’s bicycle, pedestrian, transit, and roadway networks, giving future residents, employees, and visitors a wide range of natural options for getting around, even in the absence of new technologies.



Google’s autonomous vehicle prototype (WIKIMEDIA COMMONS, USER GRENDULKHAN)



Smartphones have revolutionized access to transportation information (NELSON/INGAARD)

## 2.2 NEARBY NETWORKS

### 2.2.1 NON-MOTORIZED NETWORKS

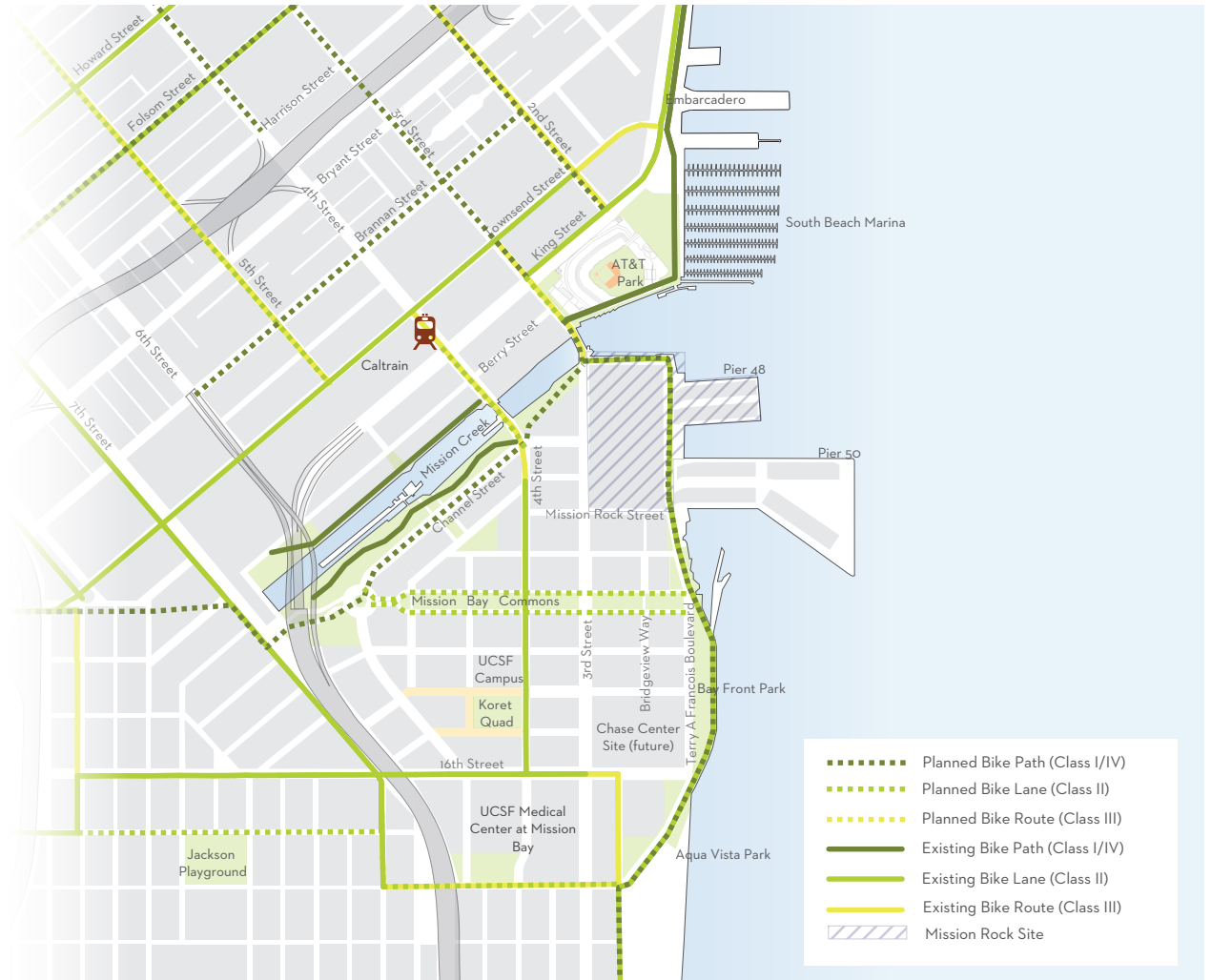
#### Pedestrian

Most trips begin or end on foot, so safe and robust pedestrian space is the backbone of any high quality transportation system.

The Embarcadero, 3rd Street, and Fourth Street are the major pedestrian routes between Mission Rock and the jobs and transit connections in SoMa and Downtown San Francisco. Pedestrian facilities on the Embarcadero are wide and spacious, while sidewalks through SoMa are typically more narrow and less well maintained. The City's Central Corridor Plan aims to steadily improve pedestrian conditions as the area grows and changes in the coming years. Mission Bay's street network is also in the process of being built out. Once the area's development is complete, all streets in the area will have sidewalks on both sides that are six feet wide, and in many places 10 or 12 feet.

#### Bicycle

San Francisco continues to build bicycle lanes of various class distinctions throughout San Francisco as part of its implementation of the 2009 San Francisco Bicycle Plan. In Mission Bay, dedicated bicycle lanes exist on Terry A. Francois Boulevard, Fourth Street, and 16th Street. The facilities on Terry A. Francois Boulevard will soon be improved to a full two-way cycle track as part of the larger San Francisco Bay Trail, which will ultimately be a high quality bicycle and pedestrian route along the entire bay-front. New or improved bicycle facilities are slated for multiple streets running north to Market Street, including 2nd, 3rd, and 5th streets.



Mission Rock's connections to the broader bicycle network and planned routes



## 2.2.2 TRANSIT NETWORKS

Mission Rock is served by several local and regional transit networks within a half-mile walk, including bus, light rail, and commuter rail. More regional connections are available a bit further to the north, along Market Street, the Embarcadero and in eastern SoMa, where there are additional regional rail, bus, and ferry options.

### Local Transit - Muni

Muni provides local transit service throughout San Francisco. The following Muni routes have stops within a quarter-mile of Mission Rock:

- ▶ **Light Rail** - N-Judah, T-Third, and E-Embarcadero
- ▶ **Bus** - 10-Townsend, 30-Stockton, 45-Union-Stockton, 47-Van Ness, 55-16th Street, 81X-Caltrain Express, 83X-Mid-Market Express

Notable investments and plans underway by SFMTA include:

The Central Subway project will place the T-Third line in a subway along Fourth Street north of Bryant Street and along Stockton Street, extending it 1.7 miles north through the SoMa, Union Square, and Chinatown neighborhoods. This will provide a more direct connection between the Mission Bay neighborhood and BART at Powell Station, as well as transit-, job-, and destination-rich neighborhoods near and north of Market Street. The project is due to open to the public in 2019.

Muni Forward is a comprehensive update to Muni routes and service plans. A subset of lines called the Rapid Network is receiving particular attention through the project, including increases in service frequency and other improvements. Service along 16th Street, through

the Mission and into Mission Bay, will see notable improvements through the project, including transit-only lanes, stop consolidation, transit signal priority, and additional transit bulbs and islands. An early Muni Forward improvement that directly affected Mission Bay was the implementation of the 55-16th Street bus, creating a direct connection between the BART station at 16th and Mission streets and the center of Mission Bay, at 3rd and Mission Bay Boulevard North. In several years, that route will be replaced by a re-routed 22-Fillmore, a trolley bus that provides crosstown connections along 16th Street through the Mission and north along Church and Fillmore streets to the Lower Height, Fillmore, Pacific Heights, and the Marina. Other routes in the vicinity of the project that will see updates include the 10-Townsend and the 12-Folsom/Pacific (the latter will be replaced by the 11-Downtown Connector).

### Regional Transit

#### Caltrain

Caltrain provides commuter rail service between San Francisco and the South Bay, with stops along the Peninsula, into San Jose and, during peak periods, south to Gilroy. Caltrain offers local, limited stop and “baby bullet” express routes which all serve San Francisco. Caltrain’s northernmost station is located about a quarter mile from the Mission Rock site at the intersection of 4th and King streets in San Francisco and is the busiest in the Caltrain system.

Notable planned Caltrain investments include:

- ▶ **Caltrain electrification** will replace the existing diesel service with electrified service between San Francisco and San Jose by 2020, allowing for increased speeds and service levels along the



Caltrain (CALTRAIN)



SF Bay Ferry (FLICKR USER PHOCA2004)

Peninsula corridor. The electrification project will also accommodate shared use of the corridor by Caltrain and planned high-speed rail service.

- ▶ Caltrain's **Downtown Extension** would connect Caltrain to the new Transbay Transit Center. The alignment of the extension is still being determined and is among the items being advanced in the Planning Department's Railyard Alternatives and I-280 Boulevard Feasibility Study.

### BART (Bay Area Rapid Transit)

BART provides regional transit service to the East Bay, Peninsula, and other parts of San Francisco. The closest stations to Mission Rock – Embarcadero and Montgomery – are a little more than one mile from the neighborhood. When it opens, the Central Subway will provide a rapid light rail connection between the site and Powell Station. BART is the region's rail spine, and it operates every 5 to 15 minutes on lines serving downtown San Francisco during the afternoon peak and every 20 minutes during non-peak times, including weekends.

### Ferries

SF Bay Ferry (operated by the Water Emergency Transportation Authority, or WETA) and Golden Gate Ferry provide daily ferry service between the San Francisco Ferry Building and the North and East Bay. Aside from services at the San Francisco Ferry Building, the nearest terminal is currently just beyond AT&T Park's center field gate, where ferries provide service to and from home baseball games. WETA and the City are exploring the potential for a new terminal in Mission Bay near 16th Street, though planning is in the very initial stages.



Local transit connections as of 2017



### Transbay Transit Center: Regional Bus and High Speed Rail

The under-construction Transbay Transit Center is located approximately one mile northeast of Mission Rock and will be open by the time the development is built out. The Transit Center will provide bus connections to regional destinations, as well as access to Greyhound and Amtrak Thruway Connection buses. Once the Downtown Extension is complete, the center will also be the terminal for California High-Speed Rail and Caltrain. Upon completion, the terminal will be served by 11 transit systems: AC Transit, BART, Caltrain, Golden Gate Transit, Greyhound, Muni, SamTrans, WestCAT Lynx, Amtrak, Paratransit, and High Speed Rail.

#### 2.2.3 VEHICULAR CIRCULATION AND PARKING

Mission Rock is located near the center of the Bay Area’s auto network, providing easy access to the region’s freeway system but also exposing drivers in the area to congestion resulting from the large number of daily trips to, from, and through northeast San Francisco.

#### Local Streets

Third, 4th, and 16th streets are the key arterials providing vehicular access to and from Mission Rock and the broader Mission Bay neighborhood. Lefty O’Doul Bridge is also a drawbridge that is used several times per day, causing traffic congestion at one of the key access/egress points for the site on 3rd Street. The bridge is a historic landmark for which major structural modification is not an option, though the city is planning to realign lanes traveling across the bridge in the



Local street network

coming years to make space along its the eastern edge for bicycle and pedestrian facilities as part of the San Francisco Bay Trail.

### Regional Connections

For connections to the region, ramps to Interstate-80 and access to the East Bay are located approximately a half mile north of the site, via 4th and 5th streets. Interstate 280 provides the main connection to the South Bay, and ramps are located less than a half mile of the site to the west, via King Street, or slightly further to the southwest, at Mariposa Street.

### Parking

As of SFMTA's most recent parking inventory in 2011, the Mission Bay and the Central Waterfront area (bound by the Bay to the east, Mission Creek Channel to the north, 7th Street and Iowa Street to the west, and Pier 80 to the south) had approximately 7,000 off-street parking spaces, and SoMa (bound by the Bay, Market Street, 7th Street, and the Channel) had an additional 26,000 spaces. Many of the spaces in Mission Bay are reserved for the users of specific sites like University of California, San Francisco's hospital and medical campus, but a sizable share of the spaces in SoMa are in paid publicly accessible lots and garages. Parking supplies in that area have shrunk somewhat in recent years, as surface parking lots have been redeveloped.

Many streets in SoMa and Mission Bay also have on-street parking. A large share of the on-street parking in both neighborhoods is currently metered per SFpark pricing policies to manage demand during nearby special events.



Parking facilities near Mission Rock (2015)



## 2.3 TECHNOLOGY-BASED TRANSPORTATION

As noted earlier, technology-based transportation companies offering car share, bike share, and app-based ride hailing (e.g. Lyft and Uber) are changing the way people travel. Although it has yet to be determined how ride hailing trips affect the number of overall driving trips, these innovative services have enjoyed early and growing adoption by Bay Area residents, particularly San Franciscans, and they are widely available in the areas around the project.

**Car-share** has emerged as a strong mobility option for households without cars. Efforts to quantify the impacts of car sharing have found that car share members drive 40% fewer miles than the average driver and take 46% more public transit trips, 10% more bicycle trips, and 26% more walking trips. The average household reduces its vehicle ownership by 50% after joining a car-share service.

**Bike share** provides another short-term mobility option, offering hourly rental of bicycles. Unlike car share programs offered in San Francisco, bike share allows for one-way rentals. Bay Area Bike Share is poised to expand dramatically throughout San Francisco by the



City Car Share (WIKIMEDIA COMMONS, USER MARIORDD)



Bay Area Bike Share (WIKIMEDIA COMMONS, USER MARIORDD)



Scoot (FLICKR USER MARTIN WICHARY)



Water taxi service in Chicago (FLICKR USER LUKE GORDON)

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time Mission Rock opens, with a plan to expand to 7,000 bicycles by 2018.

**Scooter sharing** is another service that has emerged in San Francisco in recent years. Scoot offers \$3 one-way rentals of its fleet of more than 400 small two- and four-wheeled vehicles. The two-wheelers travel as fast as 30 miles per hour, and the four-wheeled “mini-cars” travel 25 miles per hour. Users of the service find nearby vehicles and unlock them using the company’s smartphone app.

TNCs like Lyft and Uber provide on-demand booking of one-way car trips via smart phone app, and have recently expanded to facilitate shared vehicle trips (through Lyft Line and UberPool).

The rest of the private transit market is an evolving landscape, consisting of long-distance employer shuttles, short-distance institutional and transportation management association (TMA) shuttles, on-demand commuter shuttles, and other services.

**Long-distance employer-sponsored shuttles** currently make trips to many office campuses outside of San Francisco (e.g. technology companies in the South Bay). An SFMTA program that designated certain Muni bus stop and other designated curbside locations is ongoing.

There are a number of **short-distance shuttles** in operation in the project area. Currently, the Mission Bay TMA operates five routes from Mission Bay to Market Street and points throughout SoMa. Most of the routes operate only during peak periods Monday through Friday. Numerous companies and institutions also offer shuttle service within San Francisco. For example, Levi’s operates a shuttle between Caltrain and BART stations and the company’s headquarters in Levi’s Plaza.

Chariot, which offers a **demand-responsive microtransit service** using 14-passenger vans, operated nine public routes during the morning and evening commute periods as of August 2017. The service typically utilizes white curbside loading zones for passenger drop-off and pick-up. Chariot recently expanded many of its routes

and now serves points in the South Bay and East Bay, in addition to intra-San Francisco routes.

Two **water taxi** companies currently run limited service between points along the Bay, including the San Francisco Ferry Building. Over time, water taxi operations may expand with growing demand, and there is potential for a landing at Pier 48 and, with the exception of winter, at AT&T Park’s ferry dock.

These evolving transportation services provide people in San Francisco with new options to move around the city and the region, further supporting a multimodal lifestyle not dependent upon ownership or use of a private vehicle.





# 03

## GETTING AROUND AT MISSION ROCK

Mission Rock will be designed to give all users high quality choices for how they move about the site and how they get to and from it.

The site will feature generous and active pedestrian areas throughout, and the bicycle network will give cyclists of different ages and skill levels high quality options. Wide sidewalks and wayfinding will help people find the variety of nearby transit options, and Mission Rock's entire street grid will provide comfortable access

to the waterfront and, at Pier 48, a variety of water transportation options as well.

This chapter expands on these ideas, laying out the vision for how people will get around Mission Rock. Note that the project's Design Controls go into more detail on dimensions and materials.



## 3.1 NON-MOTORIZED CIRCULATION

Mission Rock's streets will be designed with the site's modal hierarchy in mind, prioritizing the safe and comfortable movement of pedestrians. Streets will include a variety of features that will help ensure that pedestrians feel safe and comfortable moving throughout the site by keeping vehicle speeds slow and ensuring that those on foot or on bicycles are highly visible to motorists.

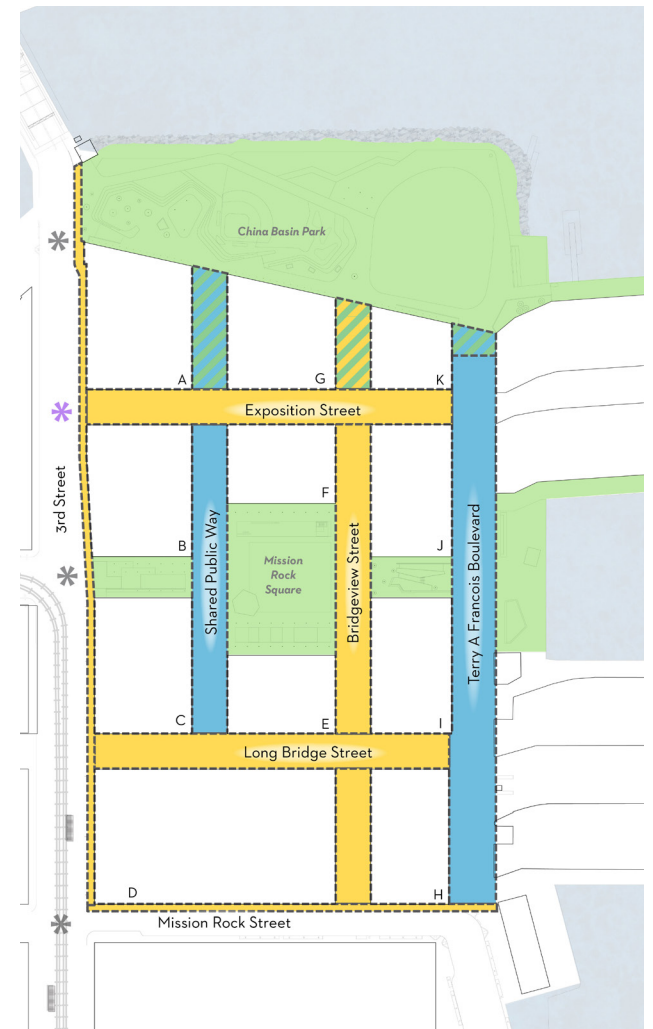
As specified in the Design Controls, all crossings will be marked using high visibility paint and other treatments, and all curbs will include ramps to facilitate accessible paths of travel. Some will be reinforced by bulbouts that bring curbs to the edge of travel lanes, shortening crossing distances and making pedestrians who are readying to cross more visible to drivers. At others, "tabletop" treatments will bring the roadway to sidewalk level and change paving materials through intersections. The changes in grade and visual treatment have been shown to make motorists instinctively slow down through these sensitive zones.

On the site's curbed streets, a combination of street furnishings, lighting treatments, and generous sidewalks will make pedestrian space vibrant, inviting, and comfortable even when pedestrian volumes are higher before and after events. Lighting will be at a pedestrian scale, and furnishings like benches and planters will create variety and a sense of protection from vehicle flows between the curbs. All three north-south streets will transition seamlessly into China Basin Park via vehicle-free zones at their northern ends.

### 3.1.1 SHARED STREETS

Shared streets, in which all modes mix across the entire street cross-section, will form the backbone of north-south pedestrian circulation, strategically placed along key paths of travel. These streets will be curbsless, following street design approaches seen in Europe along key walking corridors and high streets. Visual and tactile cues like changes in the color or texture of pavers, bollards, street furniture, light fixtures, plantings, and tactile warning strips will differentiate between areas dedicated to pedestrian movement and areas shared by pedestrians, bicycles, and vehicles. These types of streets are somewhat rare in San Francisco, but the Mission Rock team has worked closely with the City to design the streets in a way that works with local norms and regulations. The Design Controls document describes the design of these streets in more detail.

The Shared Public Way will be a key retail corridor through the site, creating a vibrant connection between AT&T Park to the north and the ballpark's main parking facility at the southern end of Mission Rock. Lined with ground-floor shops and cafes, the street will feature



Street types on the Mission Rock site

patio seating and displays that extend the ground-floor uses into the right-of-way, creating “street rooms” that invite people to stroll and linger. The street will only allow northbound vehicle movement, and entrances to the zone will feature signs and other visual cues to make clear that vehicle access is for drop-off, pick-up, and deliveries only.

Terry A. Francois Boulevard, along the eastern edge of the site, will be a slightly different shared street, mixing the area’s maritime history with a newer identity as a place where people come together for all kinds of activities. The boulevard will feature a slow two-way, plaza-like shared zone for all modes between wide zones reserved for walking, biking, and loading. The San Francisco Bay Trail will extend through the site on the east side of the street, and the west side will allow pedestrian and loading access to ground-floor maker spaces, which will be raised slightly above street level in an ode to traditional industrial and warehouse building vocabulary.







### 3.1.2 BICYCLE FACILITIES AND CIRCULATION

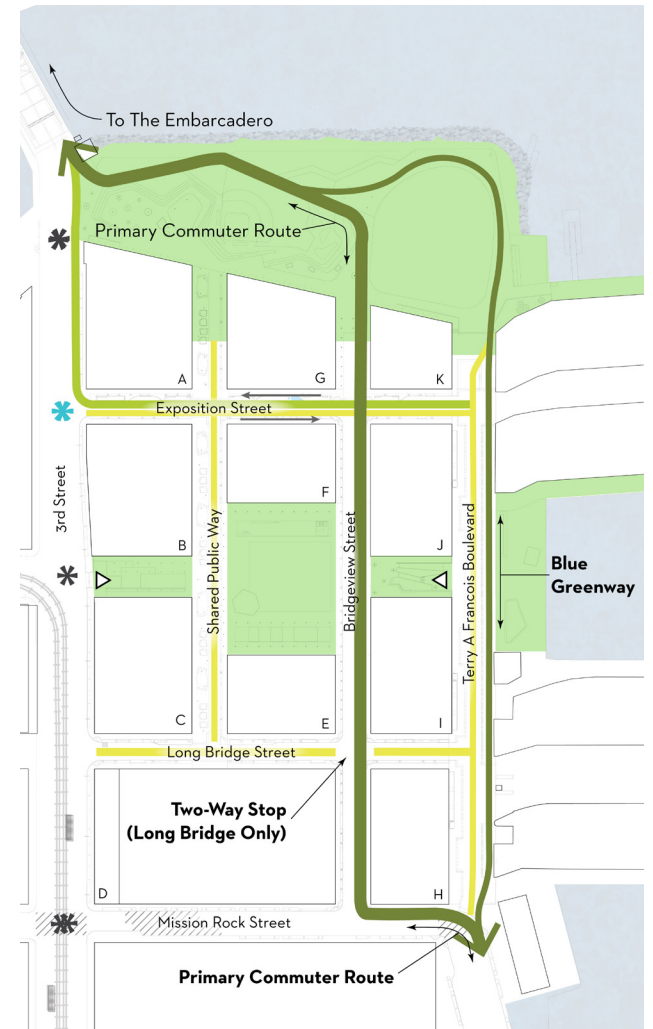
In keeping with the rest of the transportation program, Mission Rock’s approach to bicycle circulation is about providing a multitude of choices, with facilities designed for leisurely riders along the waterfront and higher speed facilities along more direct routes to SoMa, Downtown, and other points north of the site.

Even in cities with higher rates of bicycle commuting like San Francisco, researchers estimate that a considerable number of additional people might consider cycling if there were a network of slower, more protected facilities that made them feel safe and comfortable while riding. Mission Rock will provide routes to and through the site that speak to this need, and these facilities will connect to a large and growing network of bicycle facilities in the surrounding area.

The San Francisco Bay Trail’s connection through the site will provide a comfortable route for cyclists of all ages. Visual cues at north and south gateways to the multi-use path will encourage slower bicycle speeds, opening space for younger and older cyclists, as well as pedestrians. The figures on the following pages show how the bicycle facility is anticipated to connect into the City’s bicycle network on the north and south ends. For more detail on the proposed design of these intersections or other streets, see Chapter 4 of the Design Controls.

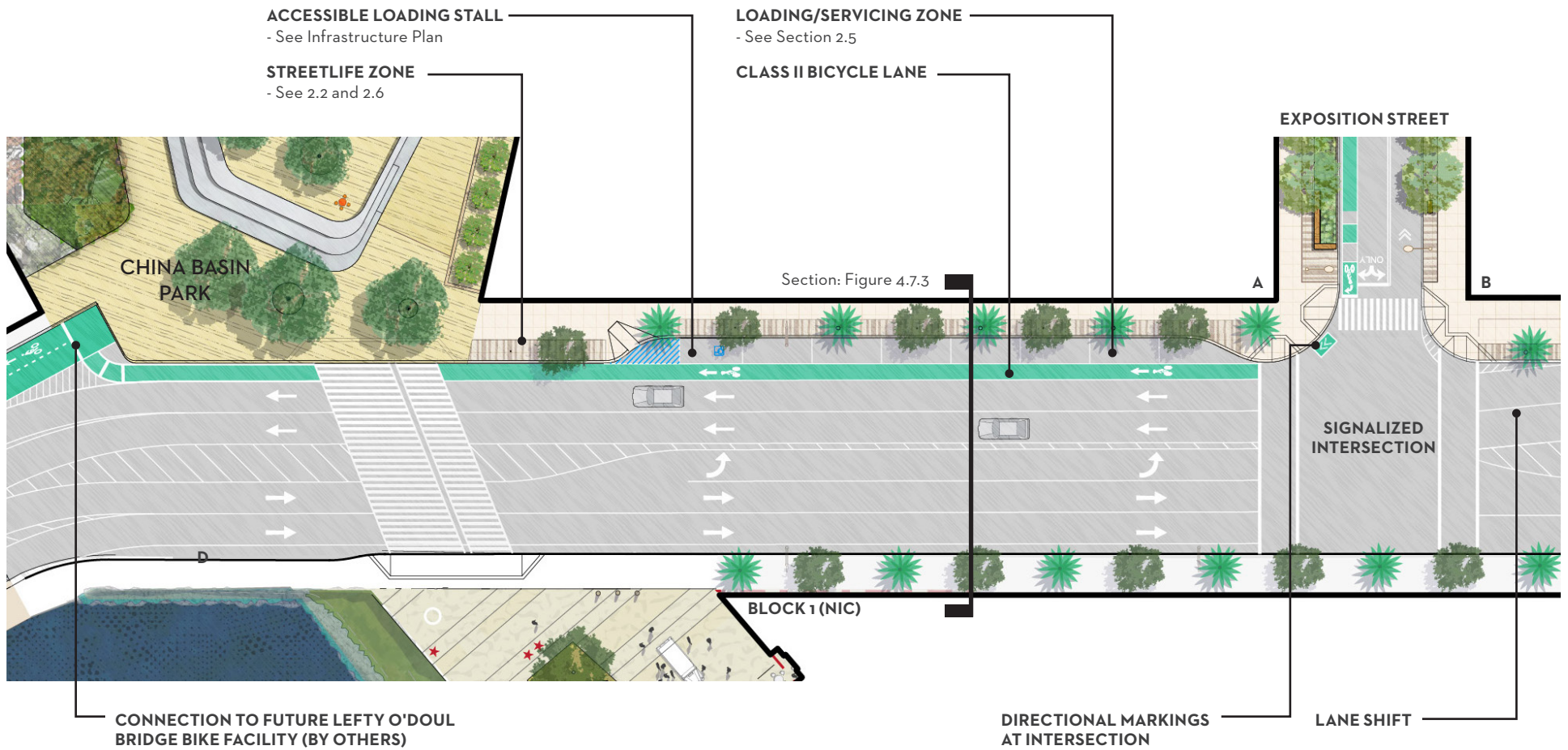
A cycle track route along Bridgeview Street will provide a higher speed connection between the Embarcadero and points south of the site for commuters and more

-  Planned Bike Path (Class I/IV)
-  Planned Bike Lane (Class II)
-  Planned Bike Route (Class III)
-  Existing Signal Location
-  Planned Signal Location
-  Access to Below-Grade Parking (if provided)



Bicycle circulation concept





A northbound buffered bicycle lane would provide commuters an alternative to traveling through China Basin Park to connect to a planned two-way cycle track across Lefty O'Doul Bridge.





experienced cyclists. A raised and green-painted two-way track protected by a painted buffer zone and soft-hit posts or another buffering approach will clearly reserve a piece of the right-of-way for cyclists. A two-way stop will control cross-traffic on Long Bridge Street to enable a faster and smoother ride for north- and south-bound cyclists. The intersection will be raised to the level of the cycle track to slow cars as they approach and move through the intersection. To connect to high quality bicycle facilities planned for Lefty O'Doul Bridge and the Embarcadero, the route will rejoin the San Francisco Bay Trail in China Basin Park. Northbound cyclists will be able to bypass the park via a painted bicycle lane along Exposition and 3rd streets.

The Design Controls document contains more detail on the planned design of these facilities. That document will be updated as the design team works with the City to ensure that bicycle facilities on the site connect seamlessly to improved facilities north and south of the site, to be implemented in the next several years.

For cyclists with destinations in Mission Rock, the site will provide a variety of bicycle storage options, including a network of spaces in public areas and conveniently located secure spaces inside the site's residential and office buildings. The project team anticipates that an existing bike share provider will install at least one bike share pod on the site, connecting to the much expanded bike share network that hit San Francisco streets in 2017.



Bridgeview Street imagined, with a two-way cycle track providing a faster option for commuters.



## 3.2 TRANSIT ACCESS

The Mission Rock site offers close, comfortable connections to several fast, high frequency, and high capacity transit options. By the time Mission Rock opens for occupancy, the T-Third Muni light rail line will have begun providing quick access to Market Street via 4th Street and the Central Subway (Mission Rock Station is located adjacent to the site, at the intersection of 3rd and Mission Rock streets). Caltrain's San Francisco terminal is a 10-minute walk from the site at 4th and King streets, and BART will be a 20-minute walk or quick T-Third ride away. Bay Area Bike Share will also provide a fast and convenient way to get to transit nodes like Market Street's subway stations and the Transbay Terminal.

The project team will implement a multi-pronged signage and wayfinding strategy to ensure that residents, employees, and visitors understand just how convenient it is to access these high quality mobility options. Outdoor static wayfinding will show basic directions and distances to nearby transit stops, and interactive information kiosks in key places on the site will provide access to more specific directions and real-time transit service information. For residents and employees, a Mission Rock website and screens in building lobbies will both show real-time transit information.

Elements of the site's transportation demand management program will also encourage transit use. See Chapter 4 and the Mission Rock TDM Strategy for more information on transit-supportive programs and incentives.



Transit screens set up in an office lobby (TRANSITSCREEN.COM)



Wayfinding signage in Amsterdam (FLICKR, ANDREY KARMAISKY)



Interactive information kiosk (USDOT)



Directional wayfinding to transit (FLICKR, CHRIS HEATHCOTE)



## 3.3 VEHICULAR CIRCULATION

Mission Rock’s street network will be dense, highly connective, and strongly tied into its surroundings. The interior street grid will link up with the developing Mission Bay street network at several points, continuing east-west and north-south streets that currently dead-end at the edges of the project site. Bridgeview Way, which today runs between South Street and the southern border of the project site at Mission Rock Street, will continue as Bridgeview Street through the site to China Basin Park. Long Bridge Street, which today links Third and Fourth Streets will extend to the waterfront at Terry A. Francois Boulevard.

Most vehicles will enter the site from 3rd Street, the main north-south vehicular route through Mission Bay. The figures on this page show estimated relative vehicle flows through the site at peak periods, extrapolated from traffic modeling done for the Transportation Impact Study.

The site’s approach to providing parking would place a single garage near the southwestern corner of the project site, which would keep most private vehicle traffic at the southern and western edges of the site. The project’s entitlement documents also include an alternative parking approach that would distribute the site’s parking supply between an above-ground facility at the site’s southwest corner and a smaller facility under Mission Rock Square.

Vehicular circulation through the rest of the site should mostly consist of delivery vehicles and cars dropping off

or picking up passengers. Mission Rock will proactively manage commercial delivery activity, discouraging deliveries during commute periods and encouraging them instead in the early morning hours or late at night. The Mission Rock team will put together a detailed loading management plan for each phase of the project. The team will also work with tenants that are likely to regularly receive large-truck deliveries, such as potential tenants in Pier 48, to ensure that individual deliveries are appropriately staffed to maintain safe conditions for other street users.

As specified in the Design Controls, passenger loading spaces on the Shared Public Way, Bridgeview Street, Long Bridge Street, and Terry A. Francois Boulevard each have curb conditions that meet the standards of the Americans with Disabilities Act, for pick-up and drop-off of passengers with mobility limitations. During specified hours, parcel delivery will be concentrated around commercial loading zones on 3rd, Exposition, and Long Bridge streets and Terry A. Francois Boulevard. Outside of those hours, these spaces would open up to use by private cars picking up and dropping off passengers and for-hire passenger vehicles like taxis and TNCs.

The shared streets – Shared Public Way and Terry A. Francois Boulevard – are expected to see very low traffic volumes, consisting mainly of loading for passengers with mobility limitations. “Traffic calming” treatments like changes in paving materials and changes in roadway grades will help ensure that volumes and speeds stay low

(see the Design Controls for more detail). If all parking is concentrated in a single facility at the southwest corner of the site, Channel Lane and Channel Street will each be closed to vehicle traffic. If the project ultimately includes a parking facility under Mission Rock Square, one or both streets may provide vehicle access to the facility.

### 3.3.1 INTERSECTION CONTROLS

Most internal intersections will be controlled by all-way stop signs. As noted earlier, one intersection along Bridgeview Street will only stop cross traffic on Long Bridge Street to allow for smooth and efficient cycling along the route.

Third Street’s interfaces with Mission Rock and Channel streets will be controlled by traffic signals, as they are today. A signal that currently controls the intersection of 3rd Street and Terry A. Francois Boulevard and halts traffic when Lefty O’Doul Bridge is raised for boat traffic entering Mission Creek is anticipated to remain where it is, allowing for signalized control of what will be an important pedestrian and bicycle connection between China Basin Park and a linear park on the west side of 3rd Street. An additional signal is planned at the intersection of 3rd and Exposition streets. The exact sequence of signals along 3rd Street will be determined by the San Francisco Municipal Transportation Agency and the Department of Public Works.

In keeping with the way major entries and exits from AT&T Park’s main parking lot are managed before and after events today, intersections around the site’s

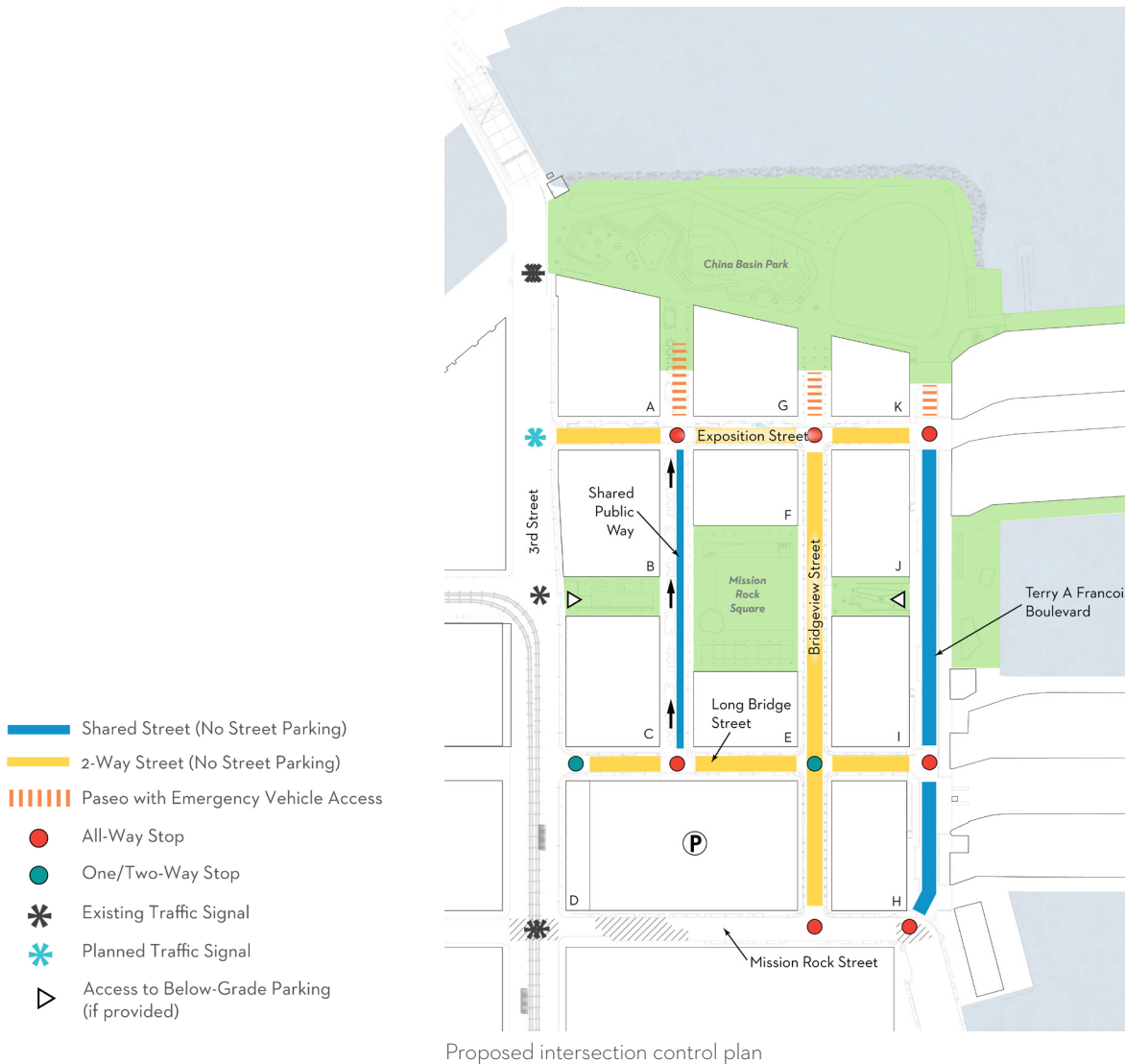


Relative parking-related vehicle flows and garage access control plan (one-garage scenario)



Planned passenger loading zones





parking garage may be controlled by traffic control personnel (also known as parking control officers, or PCOs) before and after events. The number and location of PCOs will be identified in the project’s development agreement with the City. See Chapter 5 for more on traffic control before and after major events.

### 3.3.2 PARKING

Strategic parking management is a cornerstone of the Mission Rock transportation program. A parking garage on the site’s southwestern parcel will be the site’s main parking facility, with 2,300 to 3,000 of the maximum of 3,100 parking spaces allowed on-site, per the development’s entitlement documents. The garage will be used to serve the needs of both users of Mission Rock and users of AT&T Park, replacing the surface parking lot that currently covers the entire site. The site’s entitlement documents include an alternative parking approach that could reduce the size of the main garage and locate some of the site’s parking supply in a smaller facility under Mission Rock Square.

The site’s parking supply will be managed around major AT&T Park events in much the same way as the surface lot is today: To ensure that there is adequate space available for event attendees, prices will be raised around event times to clear the garage at the site’s southwest corner. When there is not an AT&T Park event on the calendar, available capacity in the facility could serve the needs of some users of Chase Center (the Golden State Warriors’ planned arena and event center at 16th and 3rd streets) as well.

Outside of event times, most parking at Mission Rock will be a resource shared flexibly by all of the users of the site. This arrangement is an alternative to the traditional suburban model of requiring that a certain number of spaces be reserved for each individual use (i.e. office, residential, retail, or restaurant), with enough to accommodate each use’s estimated peak demand. Sharing allows a more limited number of spaces to go further by taking advantage of the fact that different uses have different peak periods. For example, peak demand for parking related to office uses tends to take place in the late morning or early afternoon, while peak demand for residential uses is typically overnight. One set of parking spaces can serve both needs. The figures at the right illustrate how this approach to parking management typically results in the need for fewer spaces.

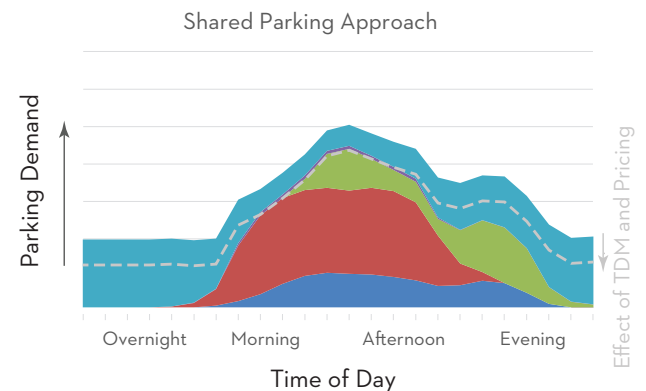
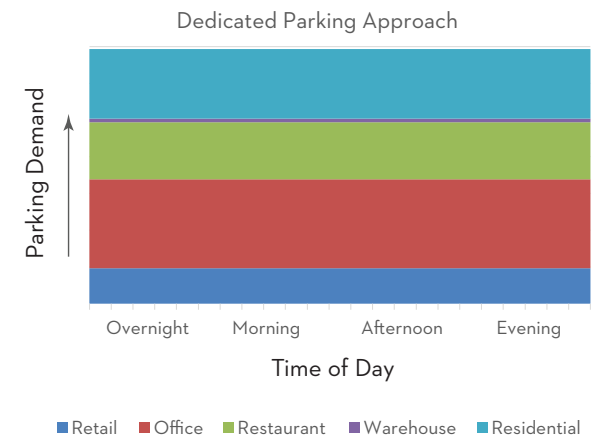
While most spaces will be designed for a typical self-park arrangement, with parking stall widths of eight to nine feet and vehicle circulation lanes, a portion of the spaces for long-term users could be in more

space-efficient vehicle stackers. Approximately 60 of the vehicle spaces will also be reserved for car share and scooter share vehicles (see additional information about vehicle sharing programs in Chapter 4).

### 3.3.2.1 Parking Pricing

The price of parking has been shown to be a highly effective mechanism in changing parking and travel behavior. Parking prices at Mission Rock will be set according to levels of demand: During times with higher levels of typical demand, parking might have a higher price, encouraging the use of other modes. Prices would not change in real time based on current occupancy, but might be adjusted overall a few times a year based on recent occupancy data. Prices might automatically increase by a pre-set amount during peak periods, based on typical demand patterns, or for scheduled events.

Given the project’s desire to encourage people to the most sustainable mode that fits their lifestyle, hourly, daily, and monthly parking prices will be set based



*These figures illustrate how the concept of shared parking often results in reduced parking supplies overall. Because different uses see peak demand at different times, the total parking needed at any given time in a shared arrangement can be as much as one third less than what would be needed if each use had to accommodate peak demand separately. Pricing and TDM can reduce demand further.*



on market prices in the surrounding neighborhood. Disseminating pricing and availability information is critical to ensuring that users are able to change behavior in response to changes in price. Real-time parking information will be shared in a variety of ways, including the Mission Rock website and dynamic signs at entrances to the site.

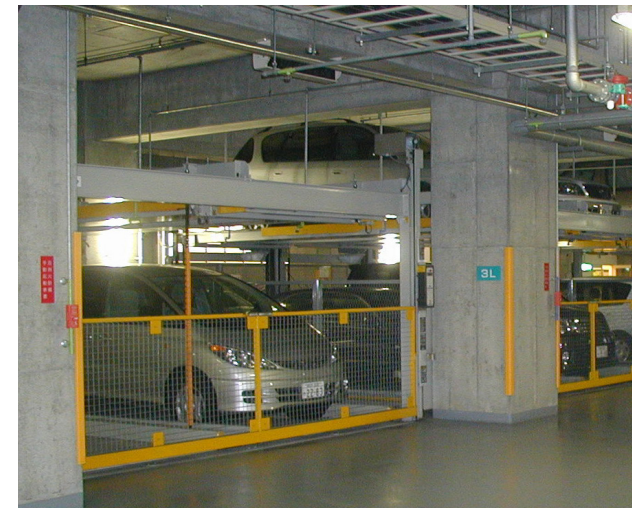
The price of parking at Mission Rock will be unbundled from residential and commercial leases, which means parking will not be included in rental agreements by default - residents and employees will need to purchase a daily or monthly parking permit separately. This approach is in-line with City of San Francisco policy and ensures that site users who do not own a car or do not plan to commute to the site by single-occupancy vehicle are not burdened with the price of parking they do not plan to use.

### 3.3.3 EMERGENCY ACCESS

All of Mission Rock's streets have been designed to provide appropriate clearance for emergency vehicles like large fire trucks. Corners have also been designed to accommodate the turning needs of large vehicles. The site's highly connective street grid will help facilitate emergency access to all of the site's buildings. Streets closed to general vehicle traffic will be made accessible to emergency vehicles as needed. The Infrastructure Plan contains further detail on the streets' technical specifications that allow for the safe circulation of emergency and other larger vehicles.



Dynamic parking information board (NELSONWYGARD)



Car stacker (SAEPARKINGSOLUTIONS.COM.AU)

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## 3.4 CONCLUSIONS

Mission Rock's design reflects the future of transportation in San Francisco. More and more, people count on having convenient access to several ways of getting around, and Mission Rock provides comfortable facilities for all kinds of lifestyles. Mission Rock is designed to be safe and comfortable to pedestrians and cyclists, to create easy paths of access to the wealth of nearby public transit options, and to ensure that those who rely on motorized transportation can be dropped off or picked up in convenient locations around the site.

Of course, circulation infrastructure is only part of the program. The next chapter details the strategies and up-front investments that will help further provide incentives for the use of sustainable, space-efficient modes of transportation.





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Mission Rock's transit-rich context and its bicycle and pedestrian-oriented approach make the site a prime candidate for robust and effective transportation demand management (TDM).

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# 04

## TRANSPORTATION DEMAND MANAGEMENT

This chapter summarizes a comprehensive TDM program that will enable Mission Rock to actively manage travel demand through a variety of up-front infrastructure investments and ongoing programs. Ultimately, a robust

TDM program will reinforce Mission Rock's forward-thinking vision and its aspirations to be an active and vibrant district that is inclusive and safe for all users.

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## 4.1 PLANNED STRATEGIES

Cities and campuses alike have implemented TDM programs to reduce single-occupancy vehicle (SOV) travel and find the optimal balance of transportation modes to accommodate growth. New residents and office tenants increasingly demand convenient access to quality multimodal infrastructure, and in urban areas like San Francisco, they assume that parking will be treated as a limited commodity that will be priced based on occupancy levels and market rates. The Mission Rock TDM Plan is in line with these expectations and exceeds them in important ways to maximize user satisfaction and foster travel choices that are sustainable in all senses of the word.

As summarized in this chapter, the Mission Rock TDM Plan consists of a package of cost-effective strategies that will work together to affect behavioral change. Strategies include incentives, programs, and infrastructure improvements, and they include many that have been successfully implemented in other mixed-use and urban environments. The package of strategies aims to reduce the number of daily SOV trips to the project site (as projected in the site's environmental impact report) by 20%.

The tables on this and the opposite page give an overview of the individual programs that comprise the site's overall TDM Plan. The text that follows provides some information on these programs; complete operational details are included in a separate TDM Plan document. A few of these recommendations have also been directly integrated into the design of Mission Rock, as codified in the Design Controls and other design documents.

Note that TDM programs work together to reduce demand, providing users with a complete package of incentives and infrastructure that can allow them the flexibility to use the mode that makes the most sense for them on a given day. This is in-line with the overall approach to transportation at Mission Rock - providing a variety of high quality mobility choices.

The collection of programs has been thoughtfully crafted into the cohesive strategy outlined in this chapter and further detailed in the TDM Plan document. While some TDM strategies like parking pricing have a more direct effect on travel behavior, others like facilitating delivery services play a more supportive role. Individual strategies would be unlikely to have the same impact in the absence of other strategies.

MEASURE TYPE	INFRASTRUCTURE AND POLICY	OPERATIONAL	
4.1.1 TRANSIT	4.1.1.1 Real-Time Transit Information and Marketing Screens	4.1.1.1 Dynamic Transportation Information	4.1.1.2 Transit Subsidies
4.1.2 BICYCLE	4.1.2.1 On-Site Bike Share 4.1.2.5 Bicycle Parking 4.1.2.6 Showers and Lockers	4.1.2.2 Bike Share Memberships 4.1.2.3 Bicycle Community Programming	4.1.2.4 Bicycle Resource Centers 4.1.2.7 Bicycle Valet
4.1.3 MOTORIZED TRANSPORT	4.1.3.1 On-Site Shared Scooters 4.1.3.3 On-Site Car Share Parking Spaces	4.1.3.2 Scooter Share Memberships	4.1.3.4 Car Share Memberships
4.1.4 PARKING	4.1.4.3 Unbundled Parking	4.1.4.1 Parking Pricing 4.1.4.2 Real-time Parking Pricing and Availability Information	
4.1.5 BUILDINGS	4.1.5.4 Cold and Dry Delivery Storage Space 4.1.5.5 Convenient Zones for Loading and Building Servicing 4.1.5.6 Childcare Facilities 4.1.5.7 Collaborative Work Space 4.1.5.8 Affordable Housing	4.1.5.1 In-Building Concierge Services 4.1.5.2 Coordinated Delivery Services	4.1.5.3 CSA Partnerships 4.1.5.6 Childcare Services
4.1.6 ALL AREAS	4.1.6.1 Signage & Wayfinding Across Modes 4.1.6.4 Improved Walking Conditions	4.1.6.2 Mobile-Friendly Mission Rock Transportation Website 4.1.6.3 Site-wide transportation staff	



## 4.1.1 TRANSIT STRATEGIES

### 4.1.1.1 Real-time Transit Information and Marketing Screens

Dynamic transit information and transportation marketing to residents, employees, and visitors will be displayed on screens in building lobbies, or a similar approach will be used based on state-of-the-practice technology at the time of occupancy. Information will be also displayed in other high traffic areas, such as collaborative work spaces inside residential and office buildings around the site or childcare facility entrances. Making such information readily available can increase residents' awareness of local transit options and facilitate efficient trip planning.

### 4.1.1.2 Transit Subsidies

Clipper Cards pre-loaded with some cash value will be provided to all residents upon move-in, and business tenants will be required to offer employees the same. Clipper is the Bay Area's transit fare payment card and can be used on more than 20 of the region's transit agencies, including BART, Muni, and the ferries. Providing Clipper Cards upon move-in can increase residents' awareness of nearby transit options and increases the ease with which they can start using it. Clipper Cards can also be customized through a bulk purchase through the Metropolitan Transportation Commission, helping site users further associate Mission Rock with transit access.

Providing Clipper Cards could increase the ease of using transit for employees and residents who currently do not have Clipper. For individuals who already have cards, the one-time financial subsidy could help lower

one barrier to increased transit use.

## 4.1.2 BICYCLE STRATEGIES

### 4.1.2.1 On-Site Bike Share

At least one high visibility space will be made available for a Ford GoBike dock on-site, with the possibility of additional docks depending on Ford GoBike's intended Mission Bay expansion. Prominently located bike share docks can increase awareness of bike share as a viable transportation option while also facilitating use. Each bicycle dock would be provided and maintained by the Ford GoBike management company, Motivate, and the project team will work with the company to identify appropriate dock locations on the Mission Rock site.

### 4.1.2.2 Bike Share Memberships

Single-year Ford GoBike memberships will be offered to all residents 18 years or older upon move-in. Members of Ford GoBike can take free, unlimited 45-minute one-way bicycle rides between bike share stations.

Providing residents with bike share memberships could help tenants with minimal experience cycling in San Francisco a low-cost and low-obligation opportunity to try cycling, and it would provide residents with a quick and easy way to get to the Transbay Transit Center and Market Street, for BART connections and a variety of other transit options and recreational activities.

### 4.1.2.3 Bicycle Community Programming

Through the site transportation staff, regular bicycle parties or happy hours for the bicycling community will be hosted at Mission Rock, potentially paired with gear giveaways. Bicycle-oriented programs and events encourage bicycling by raising public acceptance and



Real-time transit information in Seattle (FLICKR USER ORAN VIRIYINCY)



Ford GoBike (NELSONWYGAARD)

support for non-motorized transportation and building connections between residents who regularly bicycle, making biking a fun, social activity. Integrating bicycling into the social fabric of the Mission Rock community will raise the profile of bicycling as a viable mode of transportation and encourage people to try biking for a portion of trips.

#### 4.1.2.4 Bicycle Resource Centers

Each building's secure bicycle parking area will be equipped with a bicycle maintenance space, with resources like a bicycle stand, a workbench, tools, and a basic repair kit. These dedicated spaces contribute to social acceptance of bicycling and reduce one key barrier associated with owning a bicycle – concern about complications related to ongoing maintenance – by providing tools and parts through a vending machine at low prices.

This measure will also include working to incorporate a bicycle store in the site retail plan and establishing a resource center containing a vending machine for bicycle parts, a “fix-it” work station with basic tools, and bicycle pumps somewhere else within the site at an easily accessible location.

#### 4.1.2.5 Bicycle Parking

Given the importance of non-motorized transportation to the site's overall design concept, more bicycle parking will be provided than is required by San Francisco City Code. This will include secure Class I parking spaces in residential and office buildings and a network of Class II bicycle parking spaces throughout public areas.

Class I parking consists of secure long-term bicycle parking, including bicycle lockers, bicycle cages, and bicycle rooms. Class II bicycle parking refers to more short-term bicycle parking, including on-street bicycle racks. The site's location in a flat part of San Francisco and the numerous planned bicycle facilities through the site imply a strong potential for very high rates of bicycle usage, and this will be encouraged through easy access to ample, convenient bicycle parking. Bicycle parking facilities will also be available to accommodate various types of bicycles including those with cargo and trailer attachments.

There are several methods of providing secure (Class I) bicycle parking spaces for residents and employees. The site will employ approaches that reflect best practices regarding secure short-term and long-term bicycle parking. For instance, one approach may be to locate bicycle cages at convenient locations within buildings, and bicycle owners who qualify can receive a key or access card to use the cages for a set period of time (e.g. during work hours). The access card can be the same as one used to access an elevator or parking garage. Public bicycle parking is often considered secure when it is situated in well-lit, highly visible areas.

#### 4.1.2.6 Showers and Lockers

The site will meet the San Francisco Code requirement to provide shower and clothes locker facilities for tenants and employees in buildings with certain uses. Offices (including childcare, business services, and light manufacturing) that exceed 10,000 square feet must provide at least one shower and six clothes lockers;



Bicycle fix-it station (FLICKR USER JOE)



Bicycle room (Class I parking) (NELSONNYGAARD)



for facilities between 20,000 and 50,000 square feet, the building must provide two showers and 12 lockers. Those exceeding 50,000 square feet must provide four showers and 24 lockers. Retail sales and restaurants exceeding 25,000 square feet must also provide one shower and six clothes lockers; those exceeding 50,000 square feet must provide at least two showers and 12 lockers.

#### 4.1.2.7 Bicycle Valet

Free bicycle valet services will be provided for large on-site events (per code requirements). Complementing the bicycle parking available on a daily basis, bicycle valet services during special events can encourage people to travel to and from events by bicycle by eliminating the challenge of finding safe and convenient bicycle parking in an area crowded with event attendees. These services also raise public acceptance and support for non-motorized transportation by building connections with visitors.

### 4.1.3 MOTORIZED VEHICLE STRATEGIES

#### 4.1.3.1 On-Site Shared Scooters

Off-street parking spaces will be reserved for 15 to 20 shared scooters (approximately six car parking spaces in total). These spaces will be made available to scooter share companies at no cost. Electric scooters are highly convenient in a dense urban environment and may have additional marketing value, given the cache scooters carry among certain population segments. Scoot is a current provider of this type of service. One of the benefits of Scoot's network is the ability to travel point-to-point, instead of needing to return scooters

to their point of origin. Scoot already has pods within a short walk of Mission Rock. The parking garage would accommodate space for a scooter dock, which the scooter share vendor would provide and maintain.

#### 4.1.3.2 Electric Scooter Memberships

Pending a partnership with Scoot Networks, a one-year Scoot membership will be offered to all new residents, and Scoot Networks could provide its scooter orientation on-site. Like a bike share membership, a scooter share membership could help establish new travel behavior patterns upon move-in. This measure would entail forming a partnership with Scoot or another electric scooter share vendor to provide free memberships in exchange to reserving space for electric scooter parking on-site.

#### 4.1.3.3 On-Site Car Share Parking Spaces

Designated car share spaces will be provided in the parking garage, with flexibility to increase over time in response to demand. The number of spaces provided will exceed the amount required by the San Francisco Zoning Code. These spaces will be made available to car share companies at no cost.

Research indicates that a single car-share vehicle can remove as many as 20 private cars from the transportation network. Spaces will be located in high-visibility parking spots within the parking garage, which will be publicly accessible. Clear exterior signage will increase these spaces' visibility and emphasize the convenience of car share. Depending on the car share vendor provided, additional partnerships with ChargePoint may be required to provide infrastructure



SF Bicycle Coalition bicycle valet AT&T Park (NELSON\NYGAARD)

for electric vehicle charging.

#### 4.1.3.4 Car Share Memberships

Car share memberships will be offered to all households for their first year of residency. Depending on specifics of agreements with car share vendors, membership fees could be reduced or waived and some rental credit could be provided. These memberships could help establish new behavioral patterns upon moving in. Pairing access to car sharing vehicles with car sharing memberships is also shown to be more effective than implementing one or the other on its own.



#### 4.1.4 PARKING STRATEGIES

Priced and actively managed parking is a cornerstone of the Mission Rock transportation program. The following measures will ensure that driving is not the default choice for access to the site.

##### 4.1.4.1 Parking Pricing

The price of parking has been shown to be a highly effective mechanism in changing travel behavior, and as such, parking will be priced strategically at Mission Rock. During times of higher demand, parking might have a higher price, encouraging a higher rate of turnover and the use of other modes. Prices will not change in real time based on current occupancy, but instead might automatically increase by a pre-set amount during peak periods, based on typical demand patterns, or for scheduled events. Prices might be adjusted overall a few times a year based on recent occupancy data.

By refining the price of parking periodically, it would be possible to keep parking occupancy rates relatively close to the optimal level, typically around 90% for off-street parking. Researchers have found that parking facilities function efficiently (i.e. without requiring excessive parking-search time) up to roughly this level of occupancy. Demand-responsive pricing has been successfully piloted in San Francisco, Berkeley, Los Angeles, and other cities, and the AT&T Park lot on which Mission Rock will be built currently employs a form of this concept.

##### 4.1.4.2 Real-Time Parking Pricing and Availability Information

Dynamic displays (or another state-of-the-practice price-information sharing strategy) will be installed to show real-time parking price and availability information. This information will also be made available through other channels like a Mission Rock transportation website; this will require installing technology and associated information systems to automatically monitor parking usage. For market-based parking pricing to be truly effective, the dynamic between price and availability must be clearly communicated to drivers. Making such information readily available to potential drivers, particularly at parking garage entrances, decreases the likelihood of drivers' circling for parking or potentially increases the possibility of choosing other modes.

##### 4.1.4.3 Unbundled Parking

Parking costs will be unbundled from all residential, commercial, and retail leases and ensure that the users of parking are the ones who ultimately pay for it. In other words, individuals desiring parking will be required to pay the cost of parking themselves, and the price of parking will not be included in the leases of any residential or commercial tenants. "Unbundling" parking means that the cost for parking is separate from the cost of residential and commercial units. It is an increasingly common practice in urban areas, and it is required in San Francisco. Thirty percent of San Francisco households do not own a vehicle, and unbundled parking makes housing more affordable, particularly for those who do not need a parking space.



Car share spaces (NELSONNYGAARD)



Parking pricing information sign (NELSONNYGAARD)

This approach provides financial savings to households who decide to dispense with one of their cars, and it can help attract households who wish to live in a transit-oriented neighborhood where it is possible to live well with only one car, or even no car, per household. Unbundling parking costs changes parking from a required purchase to an optional amenity, so that households can freely choose how many spaces they wish to lease.

Unbundling parking tends to reduce demand for parking by specifically calling out and making optional the previously hidden cost of “free” parking. This in turn allows developers to provide less parking, which increases the area that can be developed with more lucrative land uses such as additional housing units. For this measure to work optimally for office users, the users of parking - not their employers - must be the ones who ultimately pay daily or monthly costs.

#### 4.1.5 BUILDING STRATEGIES

##### 4.1.5.1 In-Building Concierge Services

Mission Rock will work with the managers of individual buildings to appoint an in-building concierge to provide information about local merchants and coordinate/facilitate delivery services for residents. In-building concierge services and/or multi-purpose front-desk staff can facilitate valet parking, farm-to-table produce delivery, cold and dry storage for grocery or produce delivery, and secure package delivery. Concierge staff could also provide information about the nearest stores and services like dry cleaning and laundry service, as well as pickup/delivery services from local merchants.

Residents would pay for all services.

The site-wide transportation staff would provide centralized transportation support to the in-building concierges. The combination of these services will provide targeted travel information, consolidating or eliminating the need for additional trips.

##### 4.1.5.2 Coordinated Delivery Services

Mission Rock will consider partnering with delivery service companies, in addition to establishing a centralized staging location for parcel delivery and a distribution system that relies on non-motorized transportation to deliver packages to the various buildings within the development. In the absence of an official partnership, ways of making ordering in more appealing instead of making separate trips off the property for daily needs would be facilitated, thus reducing vehicle trips in the process. One potential way to do this would be to offer direct ordering through the Mission Rock website. Each building would manage these services individually as needed.

##### 4.1.5.3 Community-Supported Agriculture Partnerships

Local community-supported agriculture (CSA) deliveries will be coordinated. Fostering the use of local CSA organizations has the potential to reduce greenhouse gas emission and vehicle-trips by providing project residents convenient access to locally sourced food, reducing the number of trips and vehicle miles traveled by both vendors and consumers. This measure could also have marketing benefits and reinforce the site’s overall message about sustainability.



In-building concierge (FLICKR USER ALAN LIGHT)



CSA box (FLICKR USER NIKI SUBLIME)



#### 4.1.5.4 Cold and Dry Delivery Storage Space

Mission Rock will work with individual building managers to provide storage space near the concierge and elevators to store packages, perishables, laundry, and other deliveries. Storage should be family friendly, including room to store car seats and strollers and near to car share locations. Providing storage space for groceries, laundry, and other packages can have a direct effect on reducing trips by encouraging and facilitating online ordering. A centralized storage facility within each building can also consolidate delivery trips by enabling delivery vehicles to only make one stop for multiple recipients instead of several.

#### 4.1.5.5 Convenient Zones for Loading and Building Servicing

Passenger loading and building servicing zones are integrated into Mission Rock's overall street design. These zones will reduce the need for personal vehicle trips by facilitating deliveries and also enabling easy pick-up and drop-off of seniors and people with disabilities by locating them near elevators and at corners with curb ramps.

#### 4.1.5.6 Childcare Facilities and Services

Mission Rock will aim to attract a provider of on-site childcare services and facilities to ensure easy access for Mission Rock residents and employees. Ensuring that childcare services are provided on-site at Mission Rock would break down a key barrier for parents to taking non-auto modes to work by bringing such services within walking distance and near the many commute options around the Mission Rock site. The

childcare services could be provided on the ground floor of a northern parcel, near China Basin Park. Other family-friendly amenities will also be established, including storage spaces with room to store car seats, strollers, and other family-related equipment.

#### 4.1.5.7 Collaborative Work Space

Mission Rock will work with the developers of individual parcels to establish a collaborative work space in each residential building. A typical offering in residential buildings today, business services rooms can help encourage and facilitate working from home, which can directly reduce trips to and from the site.

Work spaces could include for-rent work rooms that can be reserved in advance, equipped with video conference equipment, high-speed internet connections, projectors, white boards, basic office supplies, and printing, scanning, and faxing services. For residents interested in using this work space long term, dedicated mailboxes for businesses could be set aside and located nearby. The developers and managers of individual buildings will ultimately be responsible for developing and maintaining these business services rooms and ensuring that they are equipped with appropriate equipment.

#### 4.1.5.8 Affordable Housing

Forty percent of on-site units will be restricted to inclusionary affordable housing, to be provided in a balanced manner throughout the phasing of the development. Affordable units are generally associated with lower rates of auto trip-making, as residents living in affordable housing typically own fewer cars

per household than residents of market-priced units. They are more likely to use transit and are less likely to require parking, reducing overall vehicle trip generation.

### 4.1.6 ALL-REALM STRATEGIES

#### 4.1.6.1 Signage and Wayfinding across Modes

ADA compliant signage and wayfinding will be installed at key points throughout the development. Signs can help indicate points of connection between different modes, as well as estimated travel times and directions by mode, and they can help increase people's understanding of travel options. Clear signage is also important for ensuring safety for all types of users, differentiating spaces for different users within shared public spaces.



Transit-focused wayfinding (NELSON\NYGAARD)



#### 4.1.6.2 Mobile-Friendly Mission Rock Transportation Website

An ADA compliant site-wide website will be maintained with a dynamic and engaging section dedicated to transportation information and services, with specific portals for each user type (or the state-of-the-practice equivalent to this measure, per changes in technology by the time of first occupancy). A mobile-friendly website oriented toward all residents, employees, and visitors providing online access to concierge services and transportation programs can help raise awareness and visibility of transportation options and facilitates connections among transportation modes. The transportation information on the website will likely include but not be limited to real-time transit information and a transportation tab with all nearby options (e.g. Muni, car share, scooter share, ride-sourcing apps) showing locations and availability.



The informative website of a TMA in Mountain View. The site is mobile-friendly, as the images on the next page show.

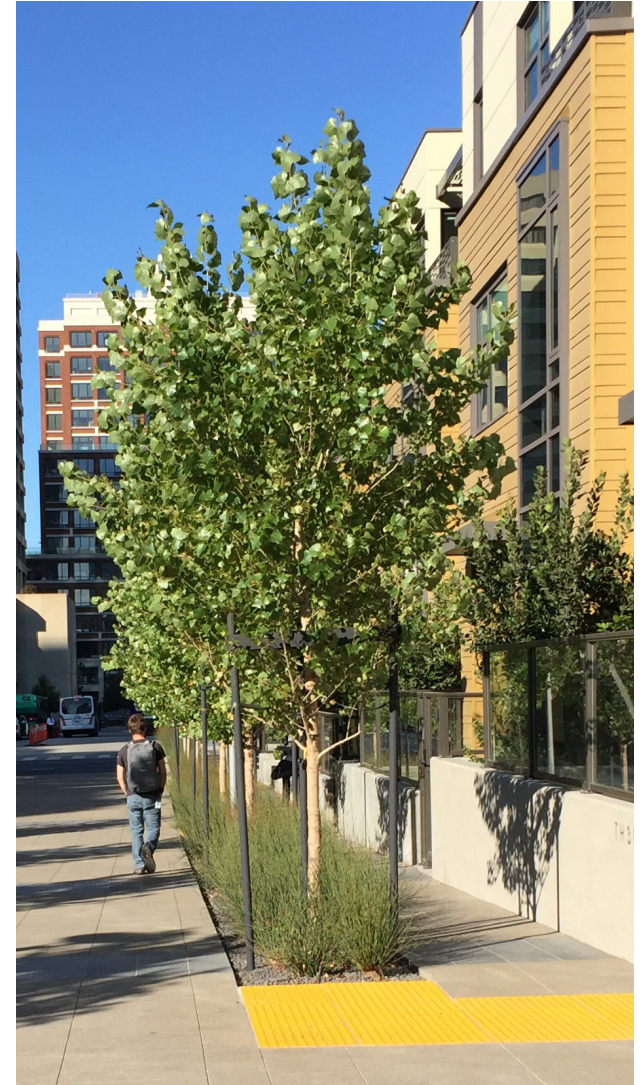
#### 4.1.6.3 On-Site Transportation Staff

A site-wide, dedicated transportation staff will be hired and tasked with providing individualized advice and information on transportation options to residents and employees. This can help raise awareness and understanding of transportation options and ensure that site users can find non-auto transportation options that meet their unique travel needs.

Other staff, such as the in-building concierge or those tasked with organizing bicycle events and maintaining the bicycle resource room, could also provide similar targeted information and facilitate discussions around using different modes. This dedicated transportation staff would act as a centralized transportation resource to the in-building concierges, providing up-to-date transportation information and expert support to front-line staff that are less likely to have the same depth of knowledge of the transportation system. Staff responsibilities may include active campaigns encouraging sustainable trip-making.

#### 4.1.6.4 Improved Walking Conditions

High-quality pedestrian design features (high connectivity, wide sidewalks, highly visible crossings, and others) are directly integrated in the design of Mission Rock. As described in the Mission Rock Design Controls, the development will add over half a mile of complete streets, including new and improved sidewalks and pedestrian crossings. Today, many sidewalks in Mission Bay are narrow or missing in areas. The new streets within Mission Rock will greatly improve the overall walking conditions of the neighborhood and facilitate safer and more convenient pedestrian connections. A pedestrian-oriented urban design is essential for residents, employees, and visitors to fully take advantage of the other TDM strategies, supporting access to all of the available transportation options and programs throughout the site and nearby. These improvements help shape the environment for the other TDM strategies to succeed.



High-quality design for pedestrians (NELSON\NYGAARD)

## 4.2 MARKETING AND COMMUNICATIONS

A strong communication strategy is critical to the success of any TDM program, ensuring that residents, employees, and visitors receive information about relevant resources and incentives at appropriate times and through channels that are easily accessible. Incorporating consistent branding into all communications can help create a sense of place and establish a cohesive identity for the transportation program. Branding can be used to support marketing and communication efforts, particularly on signage and wayfinding, to emphasize that residents, employees, and visitors can travel seamlessly through the area.

The TDM strategies cited in the chapter include three main channels for transportation-related communications: its site-wide transportation staff, a mobile-friendly web portal for site users, and physical signage and other wayfinding mechanisms on site. This section includes examples of communication tactics and channels to illustrate how specific channels can help reach target audiences.

### 4.2.1 SITE-WIDE TRANSPORTATION STAFF

Led by a coordinator, Mission Rock transportation staff would be responsible for maintaining information about TDM programs and acting as a point of contact to assist residents, employees, and visitors with transportation-related questions, concerns, or general assistance. The transportation coordinator would have the authority to implement TDM strategies, oversee the management and marketing of all measures, manage the TDM program budget, and monitor success of the TDM program.

The transportation staff might also be responsible for compiling a print and/or electronic transportation handbook to be distributed to residents on move-in and employees on hiring. This handbook could include information on transportation programs, policies, and service options, in addition to the following information:

- ▶ Transportation staff contact information, including information for the in-building concierges (if relevant)
- ▶ How to access transportation information in other media and locations, such as the website, relevant mobile applications, and real-time screens
- ▶ Commute trip planning information, including links to the regional 511 Rideshare program
- ▶ Clipper Card and vehicle (including car, bicycle, and scooter) share membership subsidies and parking policies
- ▶ Information on accessing other TDM program details and amenities, such as the in-building storage facilities
- ▶ Walking and biking routes within the area, estimated walking and cycling times to key locations, including transit hubs, and a link to the San Francisco bicycle map
- ▶ Local transit options and schedules, including links to Muni, BART, and Caltrain schedules, route maps, and existing trip planner mobile applications

The handbook would be distributed to all prospective residential tenants and all prospective employees who receive an offer to work within the development as part of welcome packets or employee orientation, or posted



Signage that combines directional and map-based wayfinding (NELSONNYGAARD)

in prominent locations for all residents and employees.

To make sure information stays useful to residents and employees over time, transportation staff will endeavor to keep all information and materials up to

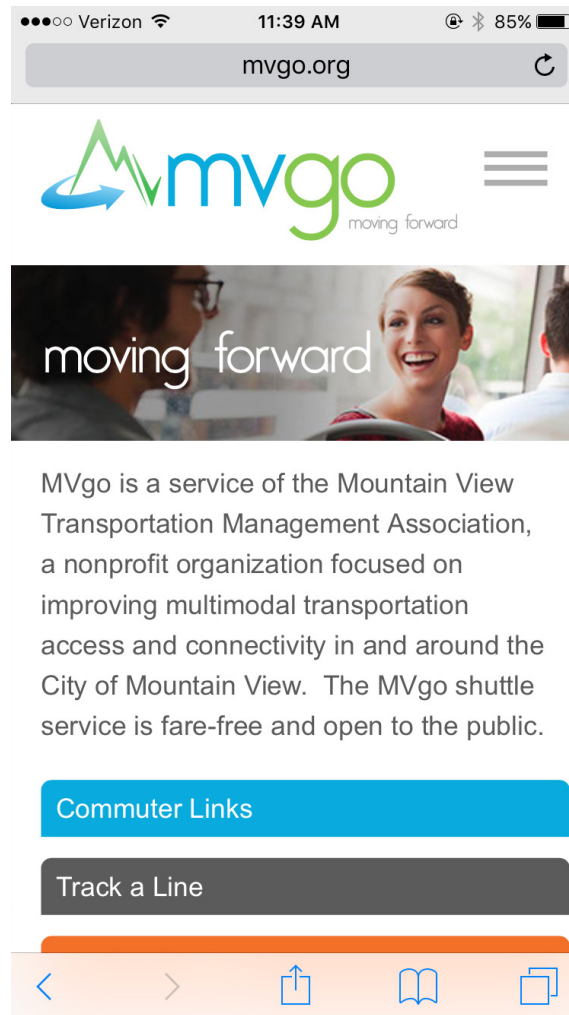


date and relevant. Staff may also consider developing other transportation tools in addition to or instead of a handbook as appropriate, drawing on available best practices.

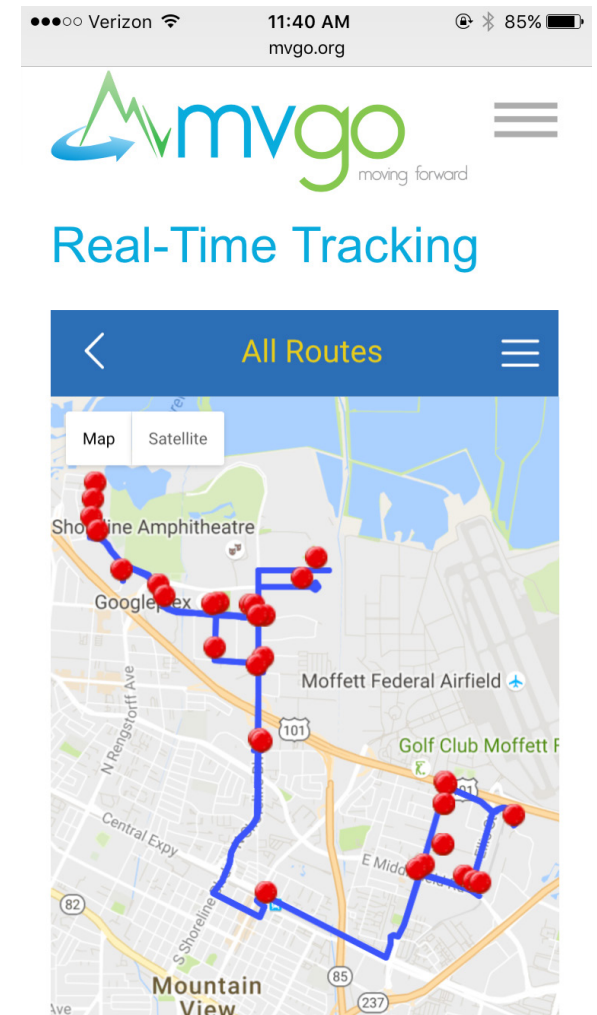
#### 4.2.2 MOBILE-FRIENDLY WEBSITE

Mobile-friendly websites are a way to create a dynamic and engaging repository for transportation information, point-to-point navigation tools, travel suggestions, user engagement campaigns, and other efforts to raise awareness of alternatives to drive-alone travel options and residents, employees, and visitors to use them. In addition to supporting the information already provided in the resident and employee handbook, this website could include the following:

- ▶ Real-time transit information
- ▶ Real-time parking pricing and availability information
- ▶ Notifications of upcoming transportation-related events, such as bicycle parties and farmers' markets, and alerts
- ▶ Integration with internet delivery services for ordering
- ▶ Registration for car share, bicycle share, and/or scooter share memberships
- ▶ Room reservations for the collaborative workspace
- ▶ On-site childcare services enrollment
- ▶ Specific pages or portals for residents, employees, and visitors so that each of these audiences has access to the appropriate and relevant travel information



MVgo is a service of the Mountain View Transportation Management Association, a nonprofit organization focused on improving multimodal transportation access and connectivity in and around the City of Mountain View. The MVgo shuttle service is fare-free and open to the public.



The mobile-friendly version of the Mountain View TMA's website. The TMA offers real-time transit information and links to a variety of other resources.

- ▶ Functionality which allows for tracking travel behavior and enables gamification for incentives

This website will be ADA/Section 508 compliant to ensure that users of all abilities are able to easily access this information. Establishing specific portals for each audience can allow for the delivery of targeted, individualized TDM information for each of the audience groups. Each of the portals could also provide specific information on costs and multimodal options available for traveling to and from Mission Rock, as well as information on nearby attractions and services and links to citywide or regional information. The images on the previous pages show an example of computer and mobile-friendly versions of landing pages for this type of website.

#### 4.2.3 SIGNAGE AND WAYFINDING

Clear, consistent, and predictable signage and wayfinding can help residents, employees, and visitors navigate the site easily. Signage can also bring awareness to important information such as parking prices and availability, bicycle parking locations, estimates of bicycle and pedestrian travel times, and other information on Mission Rock programs or services. Simply providing information on non-motorized travel prominently can increase the likelihood that people will select biking or walking as their mode of transportation.

The efficacy of signage and wayfinding is dependent on the design and placement of signs. Signage should be clear and provide relevant information at key decision points in people's journeys, in areas that are highly

visible, and in clear lines of sight. For instance, when entering the site, cyclists should be able to clearly understand their route options through the site. This signage will be especially important for safety along the shared public ways, to ensure that users understand the encouraged forms of travel and appropriate behavior on each mode. Temporary signage may be used in areas more highly trafficked by residents or employees, to provide information on specific events or programs, such as CSA pick up locations.

Wayfinding examples throughout the chapter show how it can be used in vibrant, mixed-use areas. Some signs offer clear guidance for the nearby area at several scales while providing clear directional guidance to nearby transportation hubs and popular destinations.

For further information on the design considerations that will be accounted for in designing signage for the Mission Rock site, see section 2.10 of the Design Controls.

##### 4.2.3.1 Transportation Information Kiosks

Transportation information kiosks in the public realm can provide centralized locations for relevant transportation information for trips within Mission Rock and to nearby services and attractions. These kiosks could be placed throughout the site, at strategic decision-making locations where residents, employees, and visitors might need the information, such as the intersection of Terry A. Francois Boulevard and Mission Rock Street, China Basin Park, and Mission Rock Square. The kiosks could include transit schedules and fare information, walking and cycling routes, real-time

transit information, and Bay Area Bike Share dock locations and bicycle availability.

It is recommended that these kiosks be digital, interactive displays (as shown in the accompanying image) to allow information to be updated easily and regularly. These boards would be maintained and updated as needed by the transportation staff.

While the information kiosks can provide detailed information on transportation options to visitors and others new or unfamiliar with Mission Rock and the surrounding area, real-time transit screen technology is designed to offer an opportunity to understand transportation options at a quick glance. This would be particularly useful for employees and residents, those who make recurring trips frequently and don't need detailed guidance.

Each of the communication-based TDM measures are pertinent to residents, employees, and visitors at different times during their life cycle at Mission Rock. As such, it is critical to think strategically about when to share what with each of these key segments to reach certain groups of users.

The mobile-friendly Mission Rock website will be an important avenue for sharing information about programs, policies, and services. It is reasonable to assume that the website will act as a front-line communications vehicle to reach all of those who have or may be interested in having a connection with the site. Signage and wayfinding will be seen on a daily basis and is an important element for users of the development to efficiently navigate Mission Rock.

## 4.3 CONCLUSIONS

Establishing a robust TDM program reaffirms Mission Rock’s commitment to sustainability and inclusivity. The program will encourage the site’s residents, employees, and visitors to use the most environmentally friendly and spatially efficient mode possible for each trip, with an emphasis on cycling, walking, and shared rides.

TDM MEASURE	TARGET AUDIENCE		
	RESIDENT	EMPLOYEE	VISITOR
4.1.1.1 Real-Time Transit Information			
4.1.1.2 Clipper Cards			
4.1.2.2 Bike Share Memberships			
4.1.2.1 On-Site Bike Share			
4.1.2.7 Bicycle Valet			
4.1.2.3 Bicycle Community Programming			
4.1.2.4 Bicycle Resource Centers			
4.1.2.5 Bicycle Parking			
4.1.2.6 Showers and Lockers			
4.1.3.1 On-Site Shared Scooters			
4.1.3.2 Scooter Share Memberships			
4.1.3.4 On-Site Car Share			
4.1.3.4 Car Share Memberships			
4.1.4.1 Parking Pricing			

TDM MEASURE (CONT'D)	TARGET AUDIENCE		
	RESIDENT	EMPLOYEE	VISITOR
4.1.4.2 Real-Time Parking information			
4.1.4.3 Unbundled Parking			
4.1.5.1 In-Building Concierge Services			
4.1.5.2 Coordinated Delivery Services			
4.1.5.3 CSA Partnerships			
4.1.5.4 Cold and Dry Delivery Storage Space			
4.1.5.5 Convenient Zones for Loading			
4.1.5.6 Childcare Services			
4.1.5.7 Collaborative Work Space			
4.1.5.8 Affordable Housing			
4.1.6.2 Mobile-Friendly Website			
4.1.6.3 Site-Wide Transportation Staff			
4.1.6.1 Signage and Wayfinding			
4.1.6.4 Improved Walking Conditions			

Target audience for each TDM program





# 05

## EVENT MANAGEMENT

The energy and excitement generated by people visiting parks and event venues will be part of what makes Mission Rock a fun and interesting place to live, work, and play.

These visitors will bring the area to life throughout the year. Mission Rock will be designed and actively managed to maximize the best aspects of festivities in these spaces while responsibly managing the potential inconveniences that large crowds can cause. This

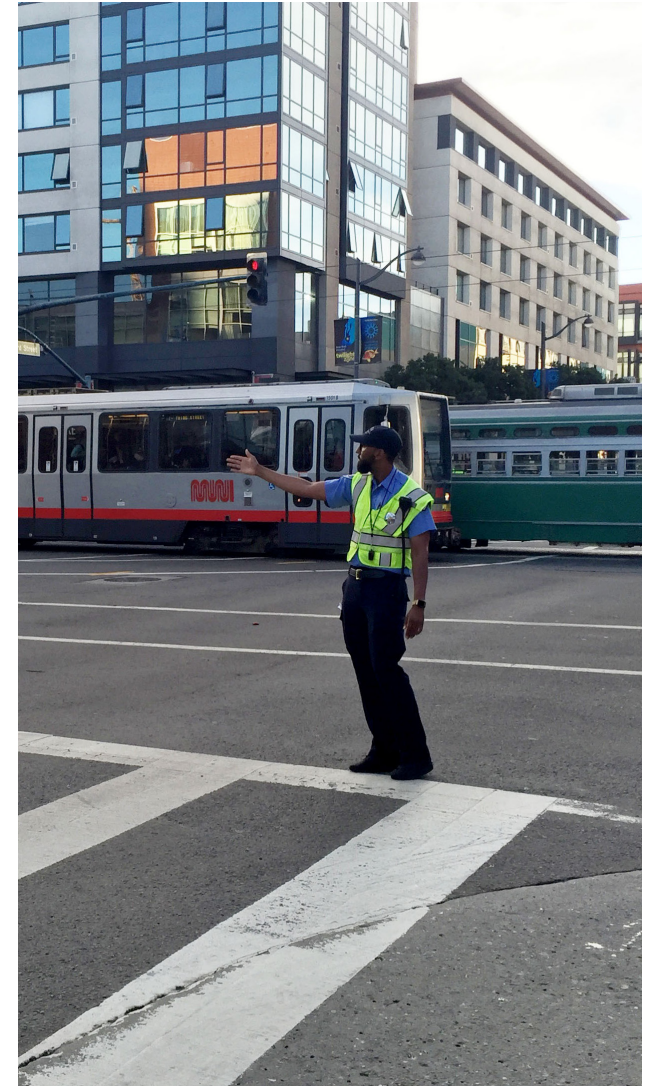
chapter outlines the basic site's anticipated approach to managing pedestrian activity, vehicle flows, and bicycle parking around them to ensure that residents and employees can enjoy the energy without the hassle.

As the team has since it moved to AT&T Park in 2000, the San Francisco Giants will continue to work closely with the City and with citizens advisory committees in the area to manage the effects of event crowds on surrounding neighborhoods, through measures like deploying traffic control officers (known in San Francisco as parking control officers, or PCOs). In addition to such measures, the Mission Rock transportation staff might also be empowered to take additional actions like closing on-site streets or individual lanes to vehicle traffic and encouraging the use of non-auto modes for travel to on-site events.

This chapter describes how these types of strategies might be combined for three scenarios, representing the likely range of common events: A primary event at AT&T Park (35,000+ attendees), a secondary event at AT&T Park (15,000 to 35,000 attendees), and on-site events in China Basin Park, Mission Rock Square, or potential event venues in Pier 48 or Block E (500 to 4,000 attendees). A more detailed Event Management

Plan will be developed in concert with City agencies before construction of the first phase of the project, and it will be updated ahead of each subsequent phase of the site's build-out. The Event Management Plan will include the topics listed in the table of contents referenced on the next page.

Given their storage-space needs, automobiles naturally pose challenges for organizers of any large event. As such, most scenarios include some restrictions on vehicle movement through the site, and the TDM Plan's efforts to reduce reliance on single-occupancy vehicles for travel to and from the site will be particularly crucial during these times. However, some vehicle movement will be accommodated. An up-to 3,000-space parking garage at the southwest corner of the site will serve as AT&T Park's main parking facility, replacing the surface lot on which Mission Rock will be built. During AT&T Park and Mission Rock events, curb space around the site will also provide important capacity for passenger loading.



Parking control officers (PCOs) (NELSON\NYGAARD)



# EVENT MANAGEMENT PLAN TOPICS

An Event Management Plan will be developed for submission and approval as part of the first phase application for the Mission Rock site, then updated and submitted (for informational purposes) as part of each subsequent phase application. The plan will cover all events on-site at Mission Rock. Section V will identify the full universe of potential TDM and traffic management strategies. The subsets of such strategies that will apply to different events (by size/type and location) will also be identified in Section V.

## I. Introduction

- a. Purpose of the Document
- b. Goals of the Mission Rock Event Management Program

## II. Mission Rock Project Update

- a. Description of Current Phase Land Use
- b. Description of Cumulative Project To Date
- c. Interim Transportation Network (Phases 1-3 only)

## III. Transportation Context

- a. Transit Network
- b. Bicycle and Pedestrian Networks
- c. Key Local and Regional Roadways
- d. Parking Facilities

## IV. Events at Mission Rock

- a. On-Site Event Venues
- b. Characteristics of Potential Event Types (would include: location, event format/type, number of attendees, likely days of week, likely times of day, attendee arrival/departure windows and concentrations, estimated attendee trips linked with other nearby events/land uses, and likely frequency)
- c. Project Phasing & Implications for Events
  - i. Phase I
  - ii Phase II
  - iii. Phase III
  - iv. Phase IV

## d. Relationship with Other Venues and Potential Events in the Area

- i. Other Venues and Event Types
  - 1. AT&T Park
  - 2. Chase Center
- ii. Concurrent Events: Type and Frequency of Overlaps

## V. Managing On-Site Event-Related Travel Demand

- a. Desired Outcomes
  - i. Ensure Safe Conditions for Pedestrians and Cyclists
  - ii. Avoid Transit Delays Related to Garage Queuing Impacts
  - iii. Minimize Mission Bay Traffic Impacts during Sensitive Times
- b. Universe of Event-Specific TDM and Traffic Management Tools
  - i. Transportation Demand Management Strategies (e.g. communications/information distribution, temporary or permanent multimodal wayfinding, incentives/disincentives for using particular modes at particular times, etc.)
  - ii. Traffic Control Strategies (e.g. curb management, the use of temporary or permanent static and/or dynamic signs, PCOs, traffic flow/lane adjustments, other strategies to prevent transit delays on T-Third & support safety of all users, etc.)
- c. Matrix: Event Types + Tools/Strategies To Be Used + Responsible Party/ies + Additional Considerations

- d. Event-Specific Nuances (as applicable; e.g. differences in the location of PCOs, differences in the use of dynamic or temporary signage, differences for events on different days/at different times, at different phases of build-out, etc.)
- e. Emergency Vehicle Access/Circulation On-Site
- f. Event-Related Loading & Servicing
- g. Managing Concurrent Event Scenarios: Coordinating with Other Venues through Ballpark Mission Bay Transportation Coordinating Committee (BMBTCC) and/or Other Applicable Body

## VI. Implementation and Refinement

- a. Mission Rock Transportation Coordinator Responsibilities
- b. Coordinating with City Agencies
  - i. Port of San Francisco (e.g. manage efforts to involve relevant city agencies, staff-level approval with rest of relevant phase application materials)
  - ii. San Francisco Municipal Transportation Agency (e.g. involved in development of initial content, involved in approval process)
- c. Coordinating with Venue Managers and Neighborhood through BMBTCC and/or Other Applicable Body
- d. Monitoring and Plan Refinement

## 5.1 PRIMARY EVENTS

### ***AT&T Park, 35,000 to 40,000+ Attendees***

A primary event at AT&T Park will be the most common scenario, occurring between 80 and 100 times per year, depending on whether the Giants make the playoffs and on how many non-baseball events (like concerts or other sporting events) AT&T Park hosts.

#### 5.1.1 MANAGEMENT STRATEGIES

##### **Parking Pricing**

As noted in Chapter 4, it is anticipated that the Mission Rock garage will be actively managed around event times to ensure that there is space available for AT&T Park event attendees. To encourage regular users of the garage to find alternative ways to get to the site on event days, parking prices could be raised during a period covering a few hours before and after AT&T Park events. This approach has already been successfully employed to manage parking demand in the existing main AT&T Park lots, Lot A and Pier 48. People arriving at the garage around event times could pay a flat event rate that might amount to a total that is higher than typical hourly rates would be (i.e. if the event period is six hours long, the flat event rate would exceed the total cost of parking for six hours at typical hourly rates).

##### **Vehicle Flows and Curb Space**

Vehicular circulation through Mission Rock could be restricted during primary events in anticipation of high pedestrian volumes through the site. The Shared Public Way is a particularly critical north-south pedestrian route, providing the most direct path of travel between the main garage and the ballpark. As such, it is anticipated that the street would be closed



Giants games at AT&T Park regularly sell out, bringing a festive atmosphere to the neighborhood

to vehicle traffic around major event times. Right turns from Mission Rock Street to 3rd Street could also be prohibited before events, to reduce volumes on Mission Rock Street in front of the Public Safety Building. Left turns into and out of the site at 3rd Street's intersections with Long Bridge will be prohibited at all times. The eastern-most lane on 3rd Street between Exposition and King streets will also likely be closed before and after events, as it is today, to facilitate the movement of large volumes of pedestrians near the ballpark.

Traffic flows will be actively managed through PCOs and strategically placed signs, and garage entrances and exits will be managed to allow for efficient processing of major vehicle flows. To ensure that emergency vehicles have clear access to Public Safety Building driveways on the south side of Mission Rock Street, keep clear zones will be maintained and could be reinforced by one or more PCOs. Traffic flows on Mission Rock Street could also be managed to maintain an open lane for potential emergency vehicle movement. Event vehicles will also be encouraged, via signs and PCOs strategically located at points south of

the site, to enter and exit the area via Terry A. Francois Boulevard. Specific PCO locations will be determined by the SFMTA with the goal of supporting pedestrian safety, limiting impacts on transit, and keeping intersections clear of vehicles.

Most vehicular circulation through the site is expected to be for passenger pick-up and drop-off. Key passenger loading locations will include the north side of Exposition Street and the east side of the block of 3rd Street just north of Exposition Street. Primary loading zones for people with mobility limitations include the east side of 3rd Street north of Exposition Street and an accessible loading zone on Exposition Street between the Shared Public Way and Bridgeview Street.

To manage vehicle movement at points of potential conflict between modes, this plan recommends the use of PCOs in key places along 3rd Street and through the site, including the intersections of Mission Rock and 3rd, Mission Rock and Bridgeview, and Mission Rock and Terry A. Francois Boulevard, and the 3rd Street crossing just south of Lefty O'Doul Bridge.

### **Pedestrians**

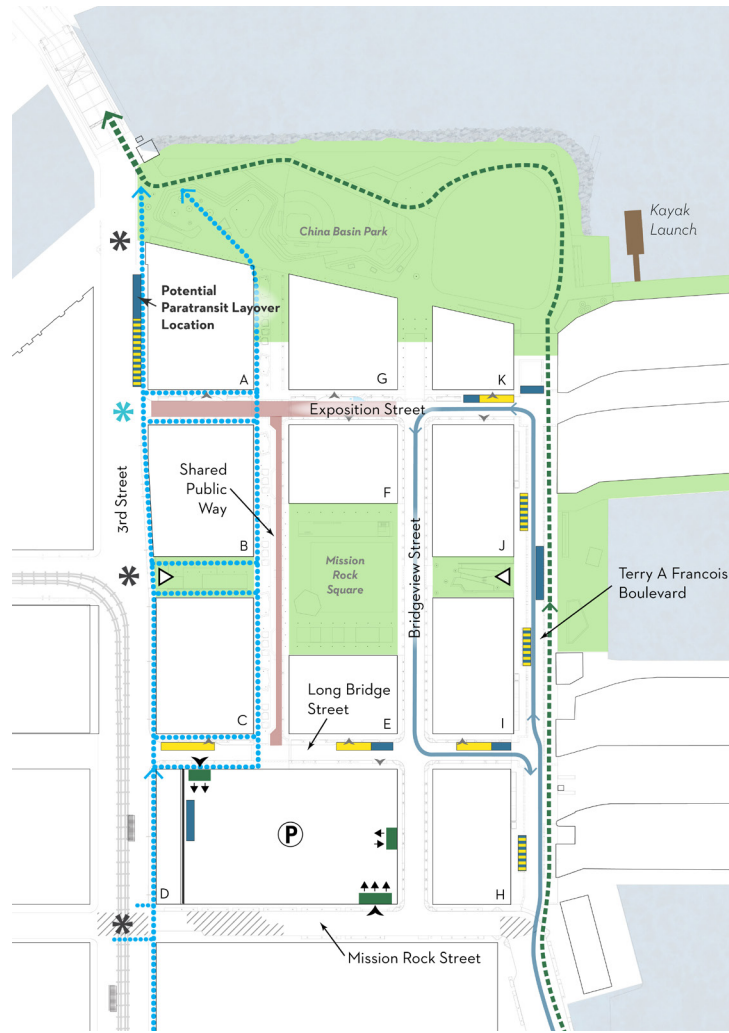
It is anticipated that all pedestrian paths of travel will be open, but pedestrian activity is likely to concentrate along the Shared Public Way and 3rd Street, the two key north-south routes between Long Bridge Street and the ballpark.

### **Bicycles**

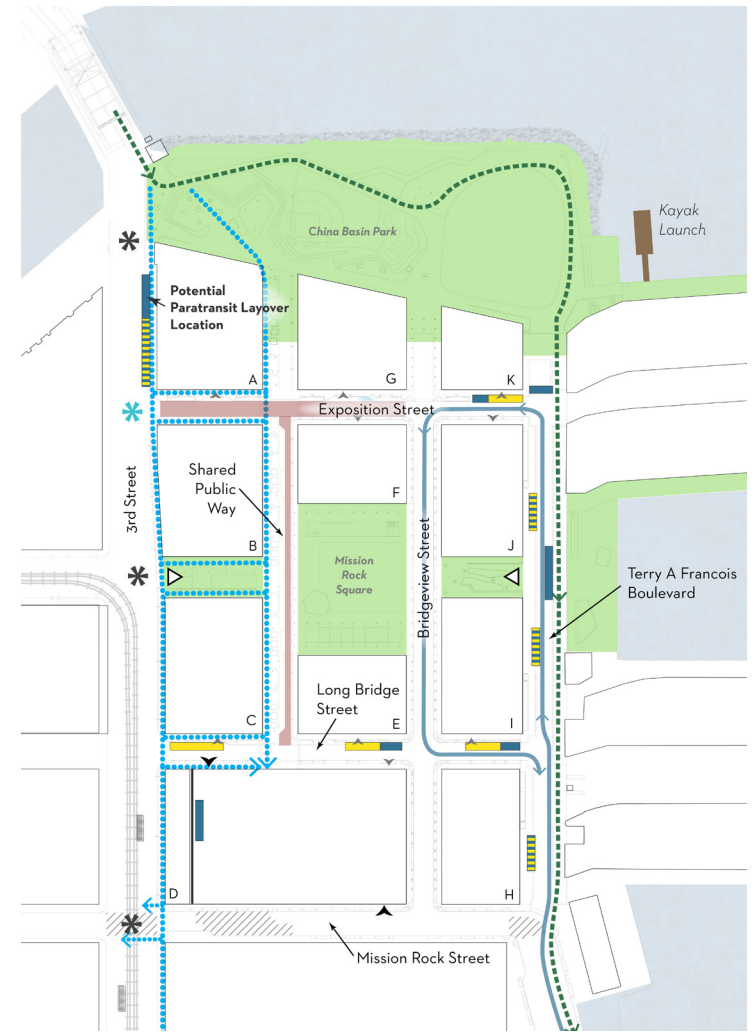
Primary bicycle flows south of China Basin are expected to be along the San Francisco Bay Trail to and from bicycle parking facilities immediately around AT&T Park. Some cyclists may also use Bridgeview Street, but they might be less likely to do so than in normal conditions due to larger numbers of vehicles turning into and out of the garage. Cyclists will be encouraged to dismount at the western end of China Basin Park to reduce conflicts with the heavy pedestrian flows across Lefty O'Doul Bridge. Some event attendees will also likely lock their bicycles on the Mission Rock site, to visit on-site restaurants before or after games or to avoid crowds closer to the venue. An additional ballpark bicycle valet facility could also be located on the Mission Rock site, if usage of the main valet facility warrants it.



- ⋯⋯⋯ Key Pedestrian Routes
- - - - - Primary Bicycle Route
- ← Primary Passenger Loading Flow
- ▬ ADA-Accessible Loading
- ▬ Commercial Deliveries Only
- ▬▬▬ Time-Limited Commercial Loading
- ▬ Closed to Vehicular Traffic
- ✱ Existing Traffic Signal
- ✱ Planned Traffic Signal
- ↕ Garage Lanes
- ▲ Planned Driveway
- ▲ Potential Driveway
- ▨ Keep Clear Zone
- ▷ Access to Below-Grade Parking (if provided)



Pre-event circulation patterns



Post-event circulation patterns

## 5.2 SECONDARY EVENTS

### **AT&T Park, 15,000 to 35,000 Attendees**

Circulation patterns at Mission Rock are anticipated to be similar around smaller events at AT&T Park. The Shared Public Way could be closed, and the relative intensity of different vehicle flows should be consistent with the basic patterns seen for the biggest events at the ballpark, though overall flows should be much smaller. Bicycle and pedestrian circulation patterns are also expected to be consistent with those anticipated for larger events.

Given lower levels of expected parking demand, it is anticipated that the garage at the southwest corner of the site would generally not need to use flat-rate event pricing around secondary events. Event attendees would be able to park in available spaces as long as spaces are available. However, communications related to AT&T Park events would likely still encourage the use of other modes to access the ballpark, in the interest of reducing congestion and parking demand overall.



Concert at AT&T Park (FLICKR USER REBECCA WILLIAMSON)



Stern Grove concert series (NELSON WYGAARD)

## 5.3 ON-SITE EVENTS

### **Mission Rock, 500 to 4,000 Attendees**

Mission Rock will have two spaces equipped to host large events. The Great Lawn in China Basin Park will have room to host concerts, movie nights, and other large gatherings. Mission Rock Square will likely host a broader range of events, from staged performances to farmers markets or craft fairs, with thousands of people flowing through the space over a several-hour period.













The garage at the southwest corner of the site's parking prices could be converted to event rates for a period covering several hours before and after the biggest events, to discourage use by regular users.

### **5.3.1 CHINA BASIN PARK EVENT**

#### **5.3.1.1 Vehicle Circulation and Passenger Loading**

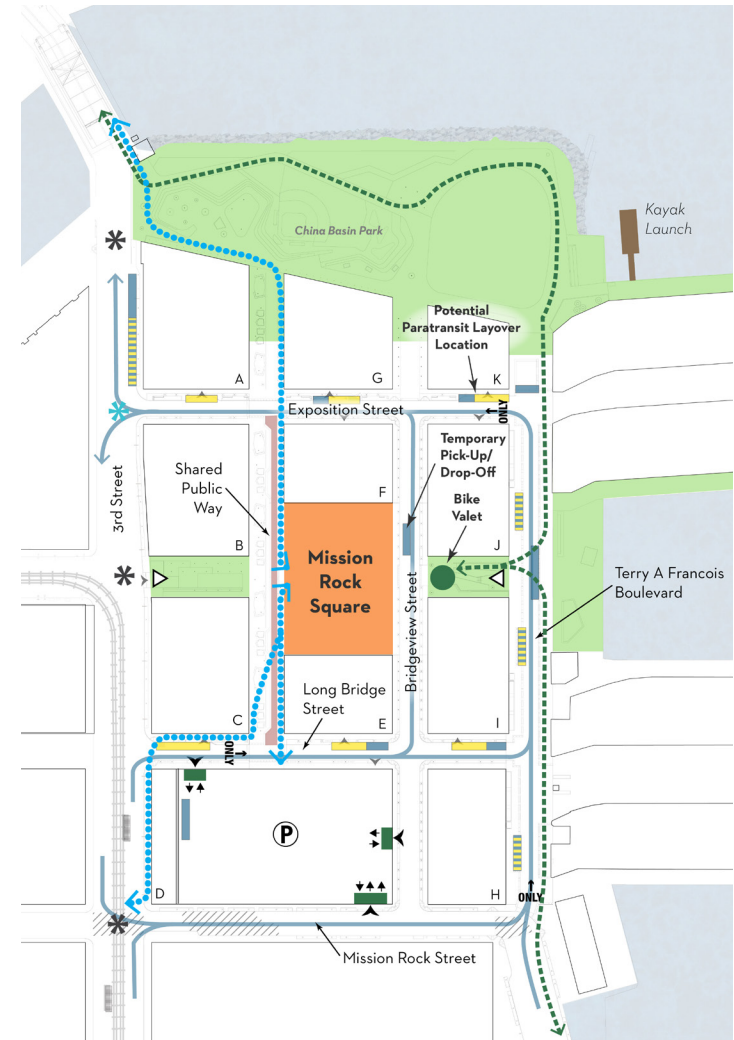
For the biggest China Basin Park events, Terry A. Francois Boulevard and Exposition Street could be closed to through traffic (the project team will apply for street closure permits through the standard City process), with the streets reserved for event-related pick-up and drop-off. To make vehicle flows predictable for pedestrians crossing these key streets, Terry A. Francois Boulevard could be converted to a one-way street northbound, and Exposition Street could be one-way westbound to complete a site-wide circuit.

It is anticipated that the north end of Terry A. Francois Boulevard, at or north of the intersection with Exposition Street, would be the main drop-off and pick-up location for people with mobility limitations. Taxi, TNC, and other vehicular loading could be focused along Exposition Street west of Terry A. Francois Boulevard.

-  Passenger Pickup & Dropoff
-  ADA-Accessible Loading
-  Commercial Deliveries Only
-  Closed to Vehicular Traffic
-  Existing Traffic Signal
-  Potential Traffic Signal
-  Garage Entry Lane Open
-  Garage Exit Lane Open
-  Planned Driveway
-  Potential Driveway
-  Keep Clear Zone
-  Access to Below-Grade Parking (if provided)

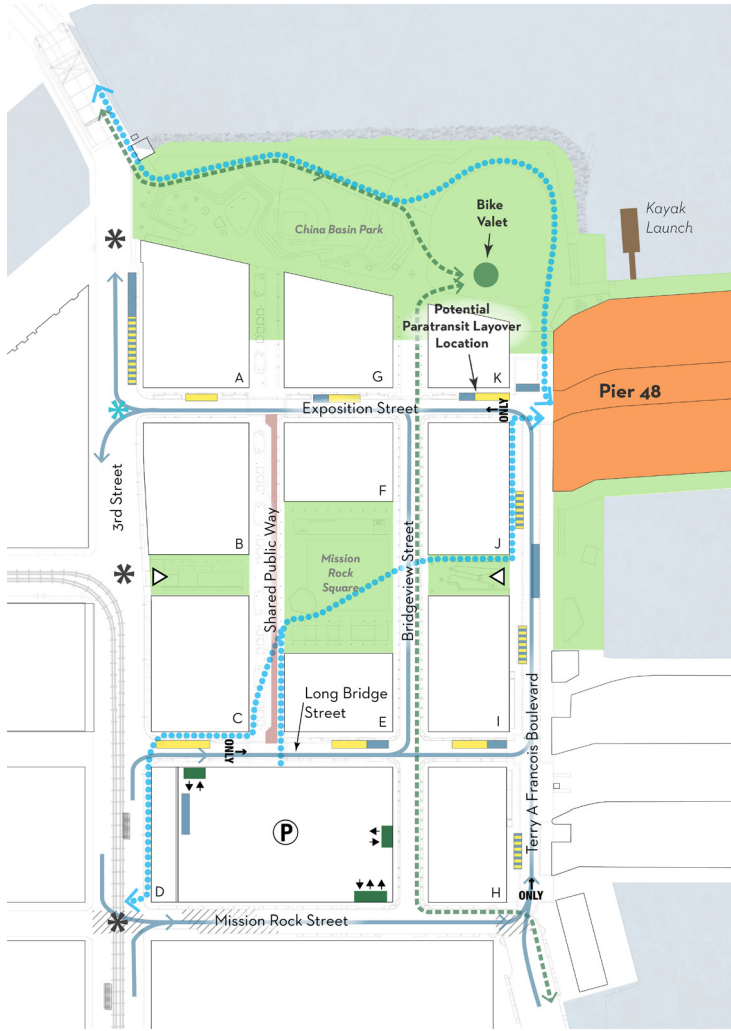


China Basin Park event circulation patterns



Mission Rock Square event circulation patterns





Event circulation patterns for potential event venue at Pier 48



Event circulation patterns for potential event venue at Block E

- Passenger Pickup & Dropoff
- ADA-Accessible Loading
- Commercial Deliveries Only
- Closed to Vehicular Traffic
- Existing Traffic Signal
- Potential Traffic Signal
- Garage Entry Lane Open
- Garage Exit Lane Open
- Planned Driveway
- Potential Driveway
- Keep Clear Zone
- Access to Below-Grade Parking (if provided)

### 5.3.1.2 Pedestrian Circulation

Pedestrian traffic is likely to focus along two major routes: 1) through China Basin Park and up 3rd Street to/from the Caltrain terminal at 4th and King streets and toward BART on Market Street, and 2) through the site to/from the parking garage and the Muni light rail station on 3rd Street south of Channel Lane. Flows through the site can be expected to concentrate on Bridgeview Street north of Mission Rock Square, in the square, and along the Shared Public Way and Long Bridge Street, en-route to the parking facility and the Muni station at the southwestern corner of the site. PCOs may be helpful on Exposition Street at Shared Public Way and Bridgeview Street, to enable vehicles picking up or dropping off passengers to exit the site.

### 5.3.1.3 Bicycle Circulation and Parking

Bicycle valet facilities could be located along the San Francisco Bay Trail, just southeast of the event space, and cyclists will also be able to use the network of public bicycle parking spaces throughout the site.

Cyclists from the north could be encouraged to dismount at the edge of China Basin Park and walk their bicycles around the event space to the bicycle valet facility. Cyclists from the south could be encouraged to dismount as they approach the area for pick-up and drop-off of attendees with mobility limitations.

## 5.3.2 MISSION ROCK SQUARE EVENT

### 5.3.2.1 Vehicle Circulation and Passenger Loading

For the biggest Mission Rock Square events, Shared Public Way could be closed to vehicle traffic (with

appropriate City permits), and Bridgeview Street between Long Bridge and Exposition streets will be closed to all but pick-up and drop-off of people with mobility limitations. As for China Basin Park events, Terry A. Francois Boulevard and Exposition Street could create a one-way loop for taxi, TNC, and other vehicular drop-off, and they could be closed to through traffic.

### 5.3.2.2 Pedestrian Circulation

Major pedestrian flows to transit nodes north and northwest of the site are anticipated to follow the Shared Public Way through China Basin Park to 3rd Street. Flows southwest to the main garage and the T-Third Muni light rail stop would follow Shared Public Way to the south and Long Bridge Street between Shared Public Way and 3rd Street.

### 5.3.2.3 Bicycle Circulation and Parking

Bicycle valet could be located on Channel Lane east of Mission Rock Square. The main flows of cyclists from points south would follow the San Francisco Bay Trail to Channel Lane. Temporary signage at the north end of the site would encourage cyclists to follow the San Francisco Bay Trail to Channel Lane. The cycle track on Bridgeview Street could be closed to bicycle traffic temporarily, to make way for large pedestrian flows and for the primary loading area for event attendees with mobility limitations.

Mission Rock residents, employees, and visitors would also be encouraged to travel to and from the site on foot, bike, or transit on days with events on-site or at AT&T Park. Site transportation staff would keep and

prominently display a calendar of major events as a planning resource for regular users of the site.

## 5.3.3 EVENTS IN POTENTIAL VENUES AT PIER 48 AND BLOCK E

As the figures on page 63 show, circulation patterns related to events at potential Pier 48 and Block E event venues would be similar to those for events at China Basin Park and Mission Rock Square respectively. The following subsections describe slight differences.

### 5.3.3.1 Vehicle Circulation and Passenger Loading

For events at Pier 48, vehicular circulation through the site are anticipated to be the same as for events at China Basin Park. For events at Block E, paratransit loading could be moved to Long Bridge Street. To account for increased flows of cyclists along Bridgeview Street, vehicles could be discouraged from using that street by on-site personnel or temporary signs.

### 5.3.3.2 Pedestrian Circulation

Pedestrian flows are expected to be broadly similar to those for China Basin Park (Pier 48 events) and Mission Rock Square (Block E events).

### 5.3.3.3 Bicycle Circulation and Parking

For Pier 48 events, bicycle valet services could be sited on the China Basin Park Great Lawn. Cyclists from the south could be encouraged to use Bridgeview Street, to clear space for pedestrian circulation between Pier 48 and Block K. For Block E events, bicycle valet services could be sited in Mission Rock Square, and cyclists would be expected to gravitate to Bridgeview Street for access from both north and south.



## 5.4 CONCLUSIONS

Those who live and work near AT&T Park enjoy the exciting, festive atmosphere created by such a premiere urban event space, and they also know it takes some extra planning to make trips to and from the area as smooth as possible. The Giants and the transportation staff at Mission Rock will work hard to aid in this planning by providing users of the site ready access to an abundance great information and a range of travel choices.

In the same spirit, the Giants and the Mission Rock team are committed to working with neighborhood organizations to responsibly manage event-related transportation conditions and make sure inconveniences related to events are kept to a minimum.



AT&T Park and Mission Rock







# MISSION ROCK TRANSPORTATION DEMAND MANAGEMENT PLAN

December 2017

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# 1 OVERVIEW

The development context and overall design profile of Mission Rock make it a prime candidate for robust and effective transportation demand management (TDM). Travel demand generated by Mission Rock will be affected by locational and land use factors, such as proximity to high quality transit, the presence of transit-supportive land use densities, and mixed land use patterns.

This TDM Plan describes measures that will enable Mission Rock to actively manage travel demand through a variety of up-front infrastructure investments and ongoing programs, including unbundled parking, pedestrian- and bicycle-friendly design, transportation marketing, vehicle share facilities and memberships, and others. Ultimately, implementing a robust TDM program will reinforce the forward-thinking vision and brand of Mission Rock as an active and vibrant district that is inclusive and safe for all users.

## DEVELOPMENT CONTEXT AND DESIGN PROFILE

Establishing new and enhanced links to and along San Francisco's waterfront, Mission Rock's mixed-used, multi-phase development will be a dynamic addition to the Mission Bay neighborhood. Encompassing approximately 27 acres, Mission Rock is slated to include 11 parcels of residential, office, and retail development as well as a refurbished and reactivated Pier 48, an expanded China Basin Park, and a variety of smaller open space areas. Including Pier 48, Mission Rock will include approximately 1,000 to 1,500 dwelling units, 1.4 to 1.8 million square feet of commercial development, and more than five acres of new open space, for a total of approximately 3.9 million gross square feet of development and eight acres of open space. The site plan calls for a tight and highly walkable urban street grid, with more than half a mile of complete streets. In addition, between 2,400 and 3,000 parking spaces could be provided in off-street facilities.

Mission Rock is located near a busy, increasingly congested part of San Francisco and is readily accessible via car, transit, walking, and bicycling. The site is accessible to I-280 and US-101/I-80 through SoMa's urban street grid, with bicycle connections to the north via the Embarcadero bike route as well as to the south via the Blue Greenway. More importantly, the project is well served by transit, both local and regional. Multiple lines of Muni bus and light rail are within a quarter-mile of the site, with moderate to high frequency of service for most of the day and late into the evening.

Although narrow sidewalks, missing crosswalks, long blocks, and the amount of on-going construction in the surrounding area all currently challenges for pedestrians and bicyclists, the Mission Rock development includes multiple street design improvements to create a safe and inviting environment, such as:

- A highly connective grid of internal streets
- Sidewalks that are to be between 12 and 15 feet wide throughout the project site

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- High visibility sidewalks, bulb-outs, and raised pedestrian crossings
- Completion of the portion of the Blue Greenway that runs through the site, with a 16-foot-wide shared bike and pedestrian right-of-way running along Terry Francois Boulevard and the northern edge of China Basin Park
- Designated bicycle lanes or bicycle-friendly low-traffic blocks on all internal roadways
- Bicycle treatments at internal intersections

Mission Rock will also provide important neighborhood amenities – groceries, childcare, personal services – establishing destinations that are easily accessible by all modes of transportation. The existing and future transportation infrastructure in the area (see Figure 1) will further promote the use of all modes of active transportation.

Figure 1 Mission Rock Context Map

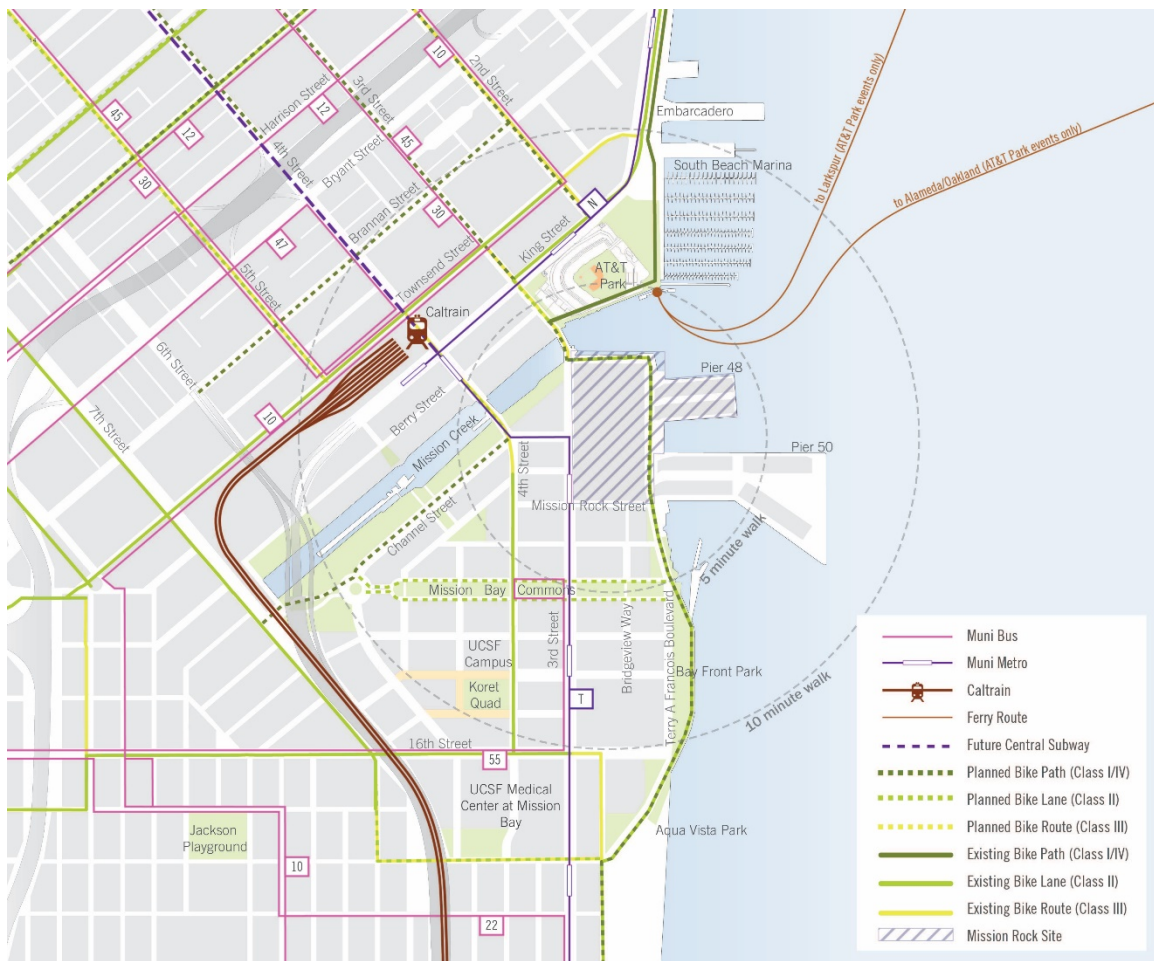


Figure 2 summarizes Mission Rock’s development components, associated vehicle trip estimates, and the anticipated trip reduction goal, per commitments made in the project’s Environmental Impact Report (EIR).



Figure 2 Estimated Vehicle Trip Generation and Trip Reduction Goal<sup>1</sup>

Scenario	Proposed Development Components (approximate)	Aggregate Daily One-Way Vehicle Trips (a)	Number of Trips to be Reduced (b = a * 20%)	Target Threshold (c = a - b)
High Commercial, Low Residential	<ul style="list-style-type: none"> <li>▪ 1,048 dwelling units</li> <li>▪ 1.4 million square feet (sf) office</li> <li>▪ 130,000 sf retail</li> <li>▪ 86,000 sf sit-down restaurant</li> <li>▪ 37,000 sf quick service restaurant</li> <li>▪ 5 acres park</li> <li>▪ 190,000 sf brewery</li> <li>▪ 11,000 sf brewery retail</li> <li>▪ 11,000 sf brewery restaurant</li> </ul>	7,615	1,523	6,092
Low Commercial, High Residential	<ul style="list-style-type: none"> <li>▪ 1,579 dwelling units</li> <li>▪ 980,000 square feet (sf) office</li> <li>▪ 130,000 sf retail</li> <li>▪ 84,000 sf sit-down restaurant</li> <li>▪ 36,000 sf quick service restaurant</li> <li>▪ 5 acres park</li> <li>▪ 190,000 sf brewery</li> <li>▪ 11,000 sf brewery retail</li> <li>▪ 11,000 sf brewery restaurant</li> </ul>	7,242	1,448	5,794

## WHY TRANSPORTATION DEMAND MANAGEMENT

This TDM Plan reaffirms Mission Rock’s commitment to sustainability and inclusivity. It encourages the site’s residents, employees, and visitors to use the most environmentally friendly and spatially efficient mode possible for each trip, with an emphasis on cycling, walking, and shared rides.

The measures outlined below are designed to work together to affect site users’ travel habits. Targeted programs strengthen the benefits of investments in bicycle and pedestrian infrastructure and the site’s proximity to major transit nodes by reinforcing awareness of these options, breaking down barriers to incorporating them in travel routines, and incentivizing habitual use.

The site plan and TDM program are consistent with several decades of City of San Francisco climate and sustainability policies that aim to encourage the use of transit and other non-auto modes of transportation. It is also consistent with the City’s efforts to manage the transportation impacts of new development. The Plan was developed with San Francisco’s new TDM Ordinance in mind, and the Mission Rock team used the Ordinance’s framework to scale the site’s programs appropriately.

Many campuses have implemented similar TDM programs to reduce single-occupancy vehicle (SOV) travel and find the optimal balance of transportation modes to accommodate growth.

<sup>1</sup> Seawall Lot 337 and Pier 48 Mixed-Use Project Environmental Impact Report, Appendix 4-1 – Transportation Impact Analysis, April 2017. Pg. 486.

Genentech implemented an aggressive TDM strategy in 2006 that included programs such as shuttle service and parking cash-out accompanied by comprehensive marketing and communications through an online employee portal. Since implementation, drive-alone mode share has decreased by almost 30%, decreasing carbon emissions from 4.5 tons per employee to 1.9. Similarly, Stanford University's extensive TDM program, which has for years included meaningfully priced parking, transit subsidies, and incentive programs, has effected a substantial decrease in SOV commuting, from 72% in 2002 to 46% in 2011. Moreover, these programs serve campuses that grew rapidly during the periods noted, but this growth was not accompanied by substantial increases in parking.

In a similarly urban environment, the City of Cambridge implemented a parking and TDM ordinance in 1998, made permanent in 2006. In the Kendall Square area, which predominantly houses large biotechnology firms and research and academic institutions, such as the Massachusetts Institute of Technology, the ordinance has been particularly effective. Although the neighborhood has added 4.6 million square feet of commercial and institutional development over the past 10 years, automobile traffic has *decreased* on major streets, with vehicle counts decreasing as much as 14 percent.<sup>2</sup> In this way, citywide TDM measures in Cambridge have not deterred the development market while still having a positive impact on quality of life and the environment.

Given these successes, robust TDM programs are becoming expected aspects of new developments, in central cities and suburbs alike. San Francisco is no exception. The City has established a TDM ordinance that would require developers to establish TDM programs scaled to the amount of parking they plan to build on-site. This ordinance reinforces existing multimodal policies, such as the city's Transit First Policy, which was established in 1973 and amended to include pedestrians and bicyclists in 1999. New residents and office tenants increasingly demand convenient access to quality multimodal infrastructure, and in urban areas like San Francisco, they assume that parking will be treated as a limited commodity that will be priced based on occupancy levels and market rates. The Mission Rock TDM Plan reflects the values outlined in City policies by striving to maximize user satisfaction and foster travel choices that are sustainable in all senses of the word.

## PLAN OVERVIEW

This Plan is comprised of the following chapters:

- Chapter 2 presents a slate of recommended TDM measures for Mission Rock to reduce SOV trip and parking demand for the development.
- Chapter 3 presents the marketing and communications strategy for Mission Rock's TDM program, discussing the interplay between the primary communication mechanisms, the TDM measures, and the various user groups of Mission Rock.
- Chapter 4 presents Mission Rock's approach to monitoring the TDM Plan's implementation to ensure that it achieves the 20% vehicle-trip reduction target.

This TDM Plan will be incorporated into the Transportation Plan for Mission Rock, which will coordinate daily circulation of people, bicycles, and vehicles to, from, and around the site.

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<sup>2</sup> Moskowitz, Eric. "Car-free commuting push pays off in Kendall Square." *The Boston Globe*. July 25, 2012. <https://www.bostonglobe.com/metro/2012/07/24/kendall-square-car-traffic-falls-even-workforce-soars/C4Fio7iKZnwEMAw7y4cJgN/story.html>

## 2 PLANNED MEASURES

The Mission Rock TDM Plan consists of a package of measures that will work together to effect behavioral change in a way that is both cost effective and highly marketable. Measures include incentives, programs, and infrastructure improvements, and they include many that have been successfully implemented in other mixed-use and urban environments; those case studies are cited as possible below each measure.

The measures balance the desire to provide innovative transportation amenities with the need to maintain a cost-effective program and an acknowledgement that Seawall Lot 337 Associates, LLC will not hold a primary relationship with site tenants over the long term – vertical developers or the management companies that take ownership of individual buildings once they are developed will ultimately play this role, and will be required to be responsible for any relevant ongoing programs. As such, programs that necessitate ongoing operational expenditures are included but deemphasized in favor of one-time, up-front investments that give new tenants and visitors immediate experiences with and exposure to the array of non-auto transportation options available to them. These will form lifelong patterns of choosing sustainable transportation options. Figure 2 gives an overview of the measures included in the Plan, and identifies the likely responsible party for implementing the measure, the target audience for the measure, the communication channels used and associated level of impact. The remaining chapter provides further detail. As in the table's column headings, colors are used to differentiate infrastructural (❖) and operational (❖) measures in the text below. A few of these recommendations have been directly integrated into the design of Mission Rock, as codified in the Design Controls and other design documents.



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**Figure 3 Summary of Planned TDM Measures by Mode**

● = High Impact   ● = Medium Impact   ○ = Low Impact   Infrastructural = ❖   Operational = ❖

Mode	Measure Type	TDM Program Measures	Responsible Party	Target Audience for Measure			Communication Channels Used			Page Reference
				Residents	Employees	Visitors	Mobile-Friendly, Site-Wide Website	Signage and Wayfinding	Site-Wide Transportation Staff	
Transit	❖ ❖	Real-time transit information and marketing screens	Vertical Developer	x	x	X	●	●	-	10
Transit	❖	One-time transit subsidies	Vertical Developer	X			●	-	●	11
Bicycle	❖	Bike share memberships	Vertical Developer	X			●	-	●	12
Bicycle	❖	Space for on-site bike share	Horizontal Developer	X	X	X	●	●	-	13
Bicycle	❖	Bicycle valet	Horizontal Developer			X	●	●	-	13
Bicycle	❖	Bike community programming with periodic giveaways	Vertical and Horizontal Developers	X	X		●	●	●	13
Bicycle	❖	Bicycle resource center, including vending machine with parts and tools and fix-it station	Horizontal Developer	X	X		●	●	○	14
Bicycle	❖	Secure bike parking in buildings and along desire lines	Vertical and Horizontal Developers	X	X	X	●	●	-	14
Bicycle	❖	Showers and clothes lockers for employees	Vertical Developer		X		○	●	○	16

**MISSION ROCK TRANSPORTATION DEMAND MANAGEMENT PLAN**

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Mode	Measure Type	TDM Program Measures	Responsible Party	Target Audience for Measure			Communication Channels Used			Page Reference
				Residents	Employees	Visitors	Mobile-Friendly, Site-Wide Website	Signage and Wayfinding	Site-Wide Transportation Staff	
Personal Motorized Transport	❖	On-site shared scooters	Horizontal Developer	X	X	X	●	●	○	16
Personal Motorized Transport	❖	Electric scooter share memberships	Vertical and Horizontal Developers	X			○	-	○	17
Personal Motorized Transport	❖	On-site car share parking spaces	Horizontal Developer	X	X	X	●	●	○	18
Personal Motorized Transport	❖	Car share memberships	Vertical Developer	X			◉	-	●	18
Parking	❖	Market-based off-street parking pricing	Garage Developer	X	X	X	◉	◉	◉	19
Parking	❖	Unbundled parking	Vertical and Horizontal Developers	X	X		○	-	●	19
Parking	❖	Reduced parking supply	Horizontal Developer	X	X	X	◉	●	-	20
Parking	❖	Real-time information on parking pricing and availability	Vertical and Garage Developers	X	X	X	●	●	-	20
Buildings	❖	In-building concierge services	Vertical Developer	X	X		-	-	◉	22
Buildings	❖	Delivery coordination for online personal services	Horizontal Developer	X	X		●	-	○	22

**MISSION ROCK TRANSPORTATION DEMAND MANAGEMENT PLAN**

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Mode	Measure Type	TDM Program Measures	Responsible Party	Target Audience for Measure			Communication Channels Used			Page Reference
				Residents	Employees	Visitors	Mobile-Friendly, Site-Wide Website	Signage and Wayfinding	Site-Wide Transportation Staff	
Buildings	❖	Partnerships with CSAs	Horizontal Developer	X	X		●	◐	○	23
Buildings	❖	Cold, dry storage space for grocery and package delivery	Vertical Developer	X			-	●	-	23
Buildings	❖	Family supportive amenities	Vertical Developer	X			-	●	-	23
Buildings	❖	Convenient loading zones	Horizontal Developer	X	X	X	-	●	-	24
Buildings	❖ ❖	Childcare services and facilities	Vertical Developer	X	X		●	○	-	24
Buildings	❖	Collaborative work space with business services	Vertical Developer	X			●	○	-	24
Buildings	❖	Convenient elevator design for bicycles, strollers, wheelchairs, etc.	Vertical Developer	X	X	X	-	○	-	25
Buildings	❖	On-site affordable housing	Vertical Developer	X			●	-	○	26
All Areas	❖	Site-wide transportation staff	Vertical Developer	X	X	X	◐	-	●	26
All Areas	❖	Mobile-friendly Mission Rock transportation website	Horizontal Developer	X	X	X	●	-	-	27



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Mode	Measure Type	TDM Program Measures	Responsible Party	Target Audience for Measure			Communication Channels Used			Page Reference
				Residents	Employees	Visitors	Mobile-Friendly, Site-Wide Website	Signage and Wayfinding	Site-Wide Transportation Staff	
All Areas	❖	Intuitive signage and wayfinding for trip planning across all modes	Horizontal Developer	X	X	X	-	●	-	27
All Areas	❖	Improved walking conditions to, from, and within Mission Rock	Horizontal Developer	X	X	X	-	●	-	27

Some TDM measures like parking pricing have a more direct effect on travel behavior, while others like facilitating delivery services play a more supportive role. For another example, providing car share membership leverages the potential impact of providing easily accessible car share spaces. In other words, the effectiveness of these combined measures is more than the sum of the parts.

The importance of monitoring cannot be overstated; regular monitoring enables management to effectively address and adjust these measures over time in response to changing residential and employee needs.

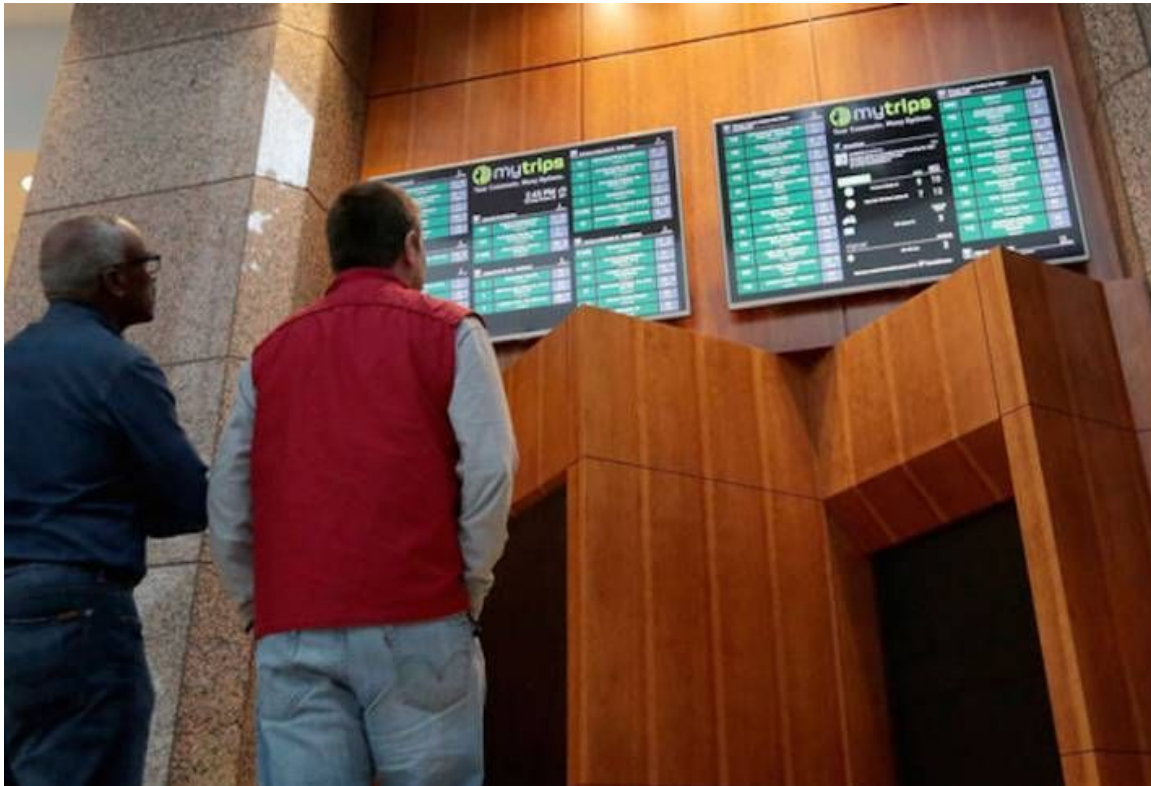
## TRANSIT MEASURES

### ❖❖ Real-time Transit Information and Marketing Screens

This programmatic measure consists of providing real-time transit information to Mission Rock residents, employees, and visitors. Information will be displayed on screens in lobbies (see Figure 3) and other high traffic areas, such as the collaborative work space or the childcare facilities. Making such information readily available increases residents' awareness of local transit options and facilitates efficient trip planning and use of other modes.

**Mission Rock will display dynamic transit information and transportation marketing in building lobbies or use a similar approach based on state-of-the-practice technology at the time of occupancy.**

Figure 4 TransitScreen Display in an Office Lobby



## Implementation Examples

Parkmerced, the largest apartment community in San Francisco, began a partnership in 2014 with TransitScreen, a company that provides this service. TransitScreen is working with the Metropolitan Transportation Commission to modernize transit displays in over 46 locations throughout the San Francisco Bay Area. Another residential development, NEMA, provides real-time transit information on their resident app and website.

## ❖ One-Time Transit Subsidies

The Clipper card is the Bay Area's transit fare payment card and can be used on more than 20 of the region's transit agencies, including BART, Muni, and the ferries. Providing a one-time transit subsidy in the form of Clipper cards upon move-in can increase residents' awareness of nearby transit options and increases the ease with which they can start using it. Clipper cards through a bulk purchase through the Metropolitan Transportation Commission, the regional public agency that manages Clipper. A custom-designed Clipper card can help tie the Mission Rock brand more closely to lifestyles that incorporate frequent transit use.

Providing Clipper cards increases the ease of using transit for employees and residents who currently do not have Clipper. For individuals who already have cards, the one-time financial subsidy could help lower one barrier to increased transit use.

**Mission Rock will provide a one-time transit subsidy in the form of a Clipper card pre-loaded with \$50 cash value to all residents over the age of 18 upon move-in, and will require that business tenants offer employees the same.**

## Implementation Examples

The City TDM Ordinance lists one-time financial incentives paired with outreach to employees and residents as a possible measure. Although other residential developments in the Bay Area have provided free/discounted monthly transit passes to residents, providing a Clipper Card with a set value pre-loaded would be a new measure.



## BICYCLE MEASURES

Figure 5 Ford GoBike Bike Share Dock



### ❖ Bike Share Memberships

Members of Ford GoBike can take free, unlimited 30-minute one-way bike rides between bike share stations. Once the system's expansion is complete (planned for November 2016 through 2018), annual memberships will cost \$149 per year. Providing residents and employees with bike share memberships could help tenants with minimal experience bicycling in San Francisco a low-cost and low-obligation opportunity to try cycling, and it would provide residents with a quick and easy way to get to the Transbay Transit Center and Market Street, for BART connections and a variety of other transit options and recreational activities.

**Mission Rock will offer bike share memberships for all residents 18 years and older for one year upon move-in.**

## Implementation Examples

While many property owners partner with bike share services to locate bike share docks nearby, offering a bike share membership to residents would be a new measure. Multiple tech companies in the Bay Area, such as Microsoft and Facebook, partner with Bikes Make Life Better, a company that specializes in bicycle program management, to develop and administer their bike programs.

### ❖ Space for On-Site Bike Share

This measure would involve partnering with Ford GoBike to locate one or more bike share docks in Mission Rock. The system is primarily concentrated in downtown San Francisco, but has recently expanded to Oakland and Berkeley. In May 2017, they announced their plans to establish 7,000 GoBikes across San Francisco, San Jose, Oakland, Berkeley, and Emeryville by 2018. As bike share placement is most effective every 1,000 feet, Mission Rock should examine where Ford GoBike is already planning to establish bike docks near the development and consider sponsoring at least one dock within the site itself. Currently, there is one bike station planned at Terry Francois Boulevard and 3<sup>rd</sup> Street. Prominently located bike share docks can increase awareness of bike share as a viable transportation option while also facilitating convenient use. Each bicycle dock would be provided and maintained by Ford GoBike, but sponsoring a bicycle dock would allow control over the specific siting and design of the dock, including incorporation of developer-specific branding on the bikes, docks, and other materials.

**Mission Rock will establish a high visibility space for a Ford GoBike (or similar provider) dock, with the possibility of additional docks depending on the bike share provider's intended Mission Bay expansion. If sponsorship is necessary, Mission Rock will take it into consideration.**

### ❖ Bike Valet

Complementing the bike parking available on a daily basis, bike valet services during special events can encourage people to travel to and from events by bicycle by eliminating the challenge of finding safe and convenient bike parking in an area crowded with event attendees. These services also raise public acceptance and support for non-motorized transportation by building connections with visitors.

**Mission Rock will provide free bike valet services for all on-site events, as required by code.**

## Implementation Examples

San Francisco Administrative Code Section 2.76 requires that events that require a street closure and anticipate over 2,000 attendees provide monitored bicycle parking. Currently, the San Francisco Bicycle Coalition provides these services for many events, including those at AT&T Park.

### ❖ Bike Community Programming

Bike-oriented programs and events encourage bicycling by raising public acceptance and support for non-motorized transportation and building connections between residents who regularly bike, making biking a fun, social activity. These events could include evening bike parties, bike-oriented happy hours, periodic bike gear giveaways, and bicycle campaigns that involve contests

and prizes. Integrating bicycling into the social fabric of the Mission Rock community will raise the profile of bicycling as a viable mode of transportation and encourage people to try biking for a portion of trips.

**Through the site transportation staff, Mission Rock will host regular bike parties or happy hours for the bicycling community, potentially paired with gear giveaways.**

### **Implementation Examples**

Although private and non-profit organizations such as the San Francisco Bike Coalition often host these types of events, bike event programming led by a mixed-use development would be a new measure. Some Bay Area employers, such as LinkedIn and Google, sponsor special events around Bike to Work Day paired with regular giveaways and bike valet.

### **❖ Bicycle Resource Center**

A bicycle resource center can provide a dedicated space for residents and employees to get information about bicycling as well as tools and parts for bike repairs and maintenance. A dedicated space contributes to social acceptance of bicycling and reduces one key barrier associated with owning a bike – concern about complications related to ongoing maintenance – by providing tools and parts through a vending machine at low prices. This measure will also include working to incorporate a bicycle store in the site retail plan and establishing a resource center containing a vending machine for bicycle parts, a “fix-it” work station with basic tools, and bicycle pumps somewhere else within the site at an easily accessible location.

**Mission Rock will establish bicycle maintenance space near a major secure bike parking area within each building with resources like a bike stand, a workbench, tools, and a basic repair kit. This space will be available over the life of the project. The team will work to include a bike store as part of the site retail plan.**

### **Implementation Examples**

In Seattle, Via6 is a 654-unit mixed-use apartment complex that provides a bike wash station for residents, as well as a bike shop on the ground floor that is owned and operated separately from the development. The Velo Room at Solera (Denver) provides tools, bike stands, work benches, air pumps, tubes, and other supplies, as well as gel packs, energy bars, and bike trail maps. Several university campuses, including Ponce Health Science University in Portland and the University of California-Davis, have bicycle repair stations in key facilities.



Figure 6 Bike Center, Millenium Park, Chicago



Source: Flickr, Brian Kusler

## ❖ Bike Parking

Following San Francisco Zoning Code Section 155, Table 155.2, the Mission Rock project is required to provide at least 710 secure bike parking spaces (Class I), in addition to at least 371 spaces for bikes in publicly-accessible locations (Class II), under the Maximum Commercial Scenario. Under the Maximum Residential Scenario, the Mission Rock project is required to provide at least 765 Class I spaces, and 388 Class II spaces.

Given the importance of non-motorized transportation to the site's overall design concept, this measure goes above that requirement to provide one Class I space per dwelling unit, one Class I space per 2,500 square feet of commercial development, one Class I space per 3,750 square feet of retail, and one Class I space per 5,000 square feet of open space, in addition to around 700 Class II spaces. Class I parking consists of secure long-term bicycle parking, including bicycle lockers, bike cages, and bike rooms. Class II bike parking refers to more short-term bicycle parking, including on-street bike racks. The site's location on a Class I north-south bicycle facility and in a flat part of San Francisco implies a strong potential for very high rates of bicycle usage, and this should be encouraged through easy access to ample, convenient bicycle parking. Bike parking facilities will also accommodate various types of bicycles including those with cargo and trailer attachments.

There are several methods of providing secure (Class I) bicycle parking spaces for residents and employees. Bike cages can be placed at convenient locations within buildings or on sidewalks in the area, and bike owners who qualify can receive a key or access card to use the cages. This space

will serve as a common, secure bike room, where residents or employees can use a key or access card (often the same card used to access an elevator or parking garage). Moreover, public bike parking is often considered secure when it is situated in well-lit, highly visible areas.

**Exceeding the bike parking required by City code, Mission Rock will construct 1 Class I bike parking space per dwelling unit, an additional 511 (under the High Residential Scenario) or 667 (under the High Commercial Scenario) Class I spaces for commercial development, and 675 (under the High Commercial Scenario) or 692 (under the High Residential Scenario) Class II bike parking spaces and will work with vertical developers to set aside necessary square footage for secure bike parking in the ground floor or another convenient area of each building.**

### **Implementation Examples**

As it is required by San Francisco zoning code, any new construction, including the addition of new units or an increase of off-street vehicle parking capacity, must include bicycle parking spaces. For residential development, one Class I (secure) space per unit is required; for buildings with more than 100 units, 100 spaces plus one space per every four units over 100 are required. The requirements for commercial development vary; retail development must provide one Class I (secure) space for every 7,500 square feet of occupied floor area, and office developments must provide one space for every 5,000 square feet.

### **❖ Showers and Lockers for Employees**

Following San Francisco Zoning Code Section 155.4, specific land uses exceeding a certain square footage threshold are required to provide shower and clothes locker facilities for tenants and employees. Offices (including childcare, business services, and light manufacturing) that exceed 10,000 square feet must provide at least one shower and six clothes lockers; for facilities between 20,000 and 50,000 square feet, the building must provide two shower and 12 lockers. Those exceeding 50,000 square feet must provide four showers and 24 lockers. Retail sales and restaurants exceeding 25,000 square feet must provide one shower and six clothes lockers; those exceeding 50,000 square feet must provide at least two showers and 12 lockers.

**Mission Rock will work with the vertical developers to meet this requirement.**

### **Implementation Examples**

San Francisco first implemented this requirement in 1998, and amended it to include office land uses in 2013.

## **PERSONAL MOTORIZED VEHICLE MEASURES**

### **❖ On-site Shared Scooters**

Electric scooters are highly convenient in a dense urban environment and may have additional marketing value, given the cache scooters carry among certain population segments. The main company providing scooter share services is called Scoot, providing access to both single-rider scooters and quad vehicles, which have four wheels and can carry up to two people. One of the benefits of Scoot's network is the ability to travel point-to-point, instead of needing to return scooters to their point of origin. Scoot already has pods within about a half-mile of Mission Rock.

Providing scooter share access to residents on-site will magnify the effectiveness of offering Scoot memberships. The parking garage would accommodate space for a scooter dock, which the scooter share vendor would provide and maintain.

**Mission Rock will reserve off-street parking space for 20 scooters (approximately six car parking spaces), and will pursue a potential marketing partnership opportunity with a provider of scooter share (e.g. Scoot) or a similar service.**

### Implementation Examples

This would be a new measure.

Figure 7 Scoot Networks



Source: Flickr, Marcin Wichary

### ❖ Electric Scooter Share Memberships

Like a bike share membership, a scooter share membership for Mission Rock residents can help establish new travel behavior patterns upon move-in. This measure would entail partnering with Scoot or another electric scooter share vendor to provide free memberships in exchange to reserving space for electric scooter parking on-site.

**Mission Rock will offer a one-year membership for Scoot or a similar service to all new residents aged 21 and over who meet the scooter share provider's membership requirements, and will offer on-site scooter orientation (provided by Scoot Networks or a similar provider).**

### Implementation Examples

Offering scooter share memberships would be a new measure.



## ❖ On-site Car Share Parking Spaces

According to San Francisco Zoning Code<sup>3</sup>, Mission Rock is required to provide 31 to 38 car share spaces. Research indicates that a single car-share vehicle can remove as many as 20 private cars from the transportation network. Spaces will be located in high-visibility parking spots within the publicly-accessible parking garage, with clear exterior signage to increase visibility and emphasize the convenience of car share. City Car Share offers electric vehicles which appear to be equally popular, though others have found barriers to adoption as people are still becoming comfortable with using the technology; this may not be the case in five years. Depending on the car share vendor provided, additional partnerships with ChargePoint may be required to provide infrastructure for electric vehicle charging.

**Exceeding this code requirement, Mission Rock will negotiate an agreement with one or more local car share vendors to provide 50 designated car share spaces in initial design with flexibility to increase over time in response to demand. Mission Rock will also consider partnering with ChargePoint to provide electrical hookups adjacent to spaces to allow for the potential for electric shared vehicles, with the ability to increase over time in response to demand.**

### Case Studies

Fox Plaza (San Francisco) has 443 units with a 0.77 parking ratio and provides 14 car share vehicles on site, with 12 additional spaces located within 1/4 mile. Madera Apartments (Mountain View) has 203 units with a 1.37 parking ratio and provides two car share vehicles on site, with two additional Zipcar locations within ¼ mile. The Uptown (Oakland) has 665 units with a 0.80 parking ratio and provides one car share vehicle on site, with an additional four car share locations within a 1/4 mile.

## ❖ Car Share Memberships

New residents will receive a car share membership for their first year of residency to help establish new behavioral patterns upon moving in (opt-out allowed, but default to providing for all). Pairing access to car sharing vehicles with car sharing memberships is also shown to be more effective than implementing one or the other on its own.

**Mission Rock will offer memberships to all households for their first year of residency. Depending on the agreement with the on-site car share vendor, membership fees will likely be reduced or waived and some rental credit may be provided.**

### Implementation Examples

Several Bay Area residential projects cover the full price of car share memberships for residents (New Californian - Berkeley; Madera Apartments - Mountain View; Fruitvale Transit Village - Oakland; Fox Plaza - San Francisco; The Uptown - Oakland). Many of these developments have parking ratios of less than one per unit, and all of them have seen parking utilization rates of well below capacity.

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<sup>3</sup> San Francisco Planning Code Section 166, Table 166.

## PARKING MEASURES

### ❖ Parking Pricing

The price of parking has been shown to be a highly effective mechanism in changing parking and travel behavior. Demand-responsive pricing involves altering the cost of parking according to the level of demand. During times of higher demand, parking has a higher price and thus encourages both a higher rate of turnover and the use of other modes; during times of lower demand, parking has a lower price. Prices generally do not change in real time based on current occupancy, but instead might automatically increase by a pre-set amount during peak periods, based on typical demand patterns, or for scheduled events. Prices might be adjusted overall a few times a year based on recent occupancy data. By refining the price of parking periodically, it is possible to keep parking occupancy rates relatively close to the optimal level, typically around 90% for off-street parking. Researchers have found that parking facilities function efficiently (i.e. without requiring excessive parking-search time) up to roughly this level of occupancy.<sup>4</sup>

**At the time when the site is fully built out, Mission Rock’s parking facilities will be priced to keep demand below a threshold occupancy rate and to encourage site users to avoid parking during AT&T Park events. Non-event rates will be comparable to off-street parking prices at other facilities in SoMa and Northern Mission Bay.**

### Implementation Examples

Demand-based parking pricing has been implemented to various degrees in multiple cities. The *SFPark* program in San Francisco regulates parking prices for off-street as well as on-street parking facilities, adjusting hourly parking rates every three months based on the parking demand at each garage during five different time bands throughout the day. When occupancy exceeds 80%, hourly rates for the following three-month period are increased by 50 cents. Unlike approach planned for Mission Rock, *SFPark* also decreases prices when occupancy falls below a low-end threshold of 40%. When it was first implemented, the program also adjusted early bird parker time requirements and added off-peak discounts to discourage commuting at peak hours, reducing congestion around the garages. Since implementation, San Francisco has seen higher garage occupancy at lower prices overall, resulting in a marginal increase in revenue.

### ❖ Unbundled Parking

“Unbundling” parking means that the cost for parking is separate from the cost of residential and commercial units. It is an increasingly common practice in urban areas; the City of San Francisco requires residential developments to unbundle parking. Thirty percent of San Francisco households do not own a vehicle<sup>5</sup> and unbundled parking makes housing more affordable those who do not need a parking space. This approach provides a cost savings to households who decide to dispense with one of their cars, and it can help attract households who wish to live in a transit-

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<sup>4</sup> See: Levy, Nadav, Karel Martens, and Itzhak Benenson. Exploring Cruising Using Agent-Based and Analytical Models of Parking. *Transportmetrica*, DOI: 10.1080/18128602.2012.664575, 2012. AND Millard-Ball, Adam, Rachel Weinberger, and Robert Hampshire. Is the curb 80% full or 20% empty? Assessing the impacts of San Francisco’s parking pricing experiment. *Transportation Research Part A: Policy and Practice*, No 63, 2014, pp. 76-92.

<sup>5</sup> U.S. Census, American Community Survey 2013, 5-year estimates

oriented neighborhood where it is possible to live well with only one car, or even no car, per household. Unbundling parking costs changes parking from a required purchase to an optional amenity, so that households can freely choose how many spaces they wish to lease.

Unbundling parking tends to reduce demand for parking by specifically calling out and making optional the previously hidden cost of “free” parking. This in turn allows developers to provide less parking, which increases the developable area for more lucrative land uses such as additional housing units. For this measure to work optimally for office users, the users of parking – not their employers – must be the ones who ultimately pay daily or monthly costs.

**Mission Rock will unbundle parking costs from all residential, commercial, and retail leases and ensure that the users of parking are the ones who ultimately pay for it.**

### ❖ Reduced Parking Supply

Overbuilding parking supply leads to increased automobile use, contributing to more vehicle trips, traffic congestion, higher housing costs, and greenhouse gas emissions. Providing parking at a rate below the surrounding neighborhood reduces the parking supply from what would be typically provided for this kind of development, which in turn reduces the number of trips the development may generate. Given the large number of households with no vehicle and the demand for housing in San Francisco, a limited supply of parking could be expected to attract a high proportion of residents without vehicles, which in turn would result in fewer vehicle trips from the development. Mission Rock is within a few blocks of frequent high-quality transit to downtown and is in a neighborhood that is already facing vehicular congestion, which further discourages driving and parking.

**Mission Rock will establish maximum parking ratios that are lower than the neighborhood average; if anticipated needs related to AT&T Park require providing parking at a rate higher than the neighborhood average, Mission Rock will still price parking at or above market rates for northern Mission Bay or SoMa, rather than reducing prices to fill the facility.**

### ❖ Real-time Parking Pricing and Availability Information

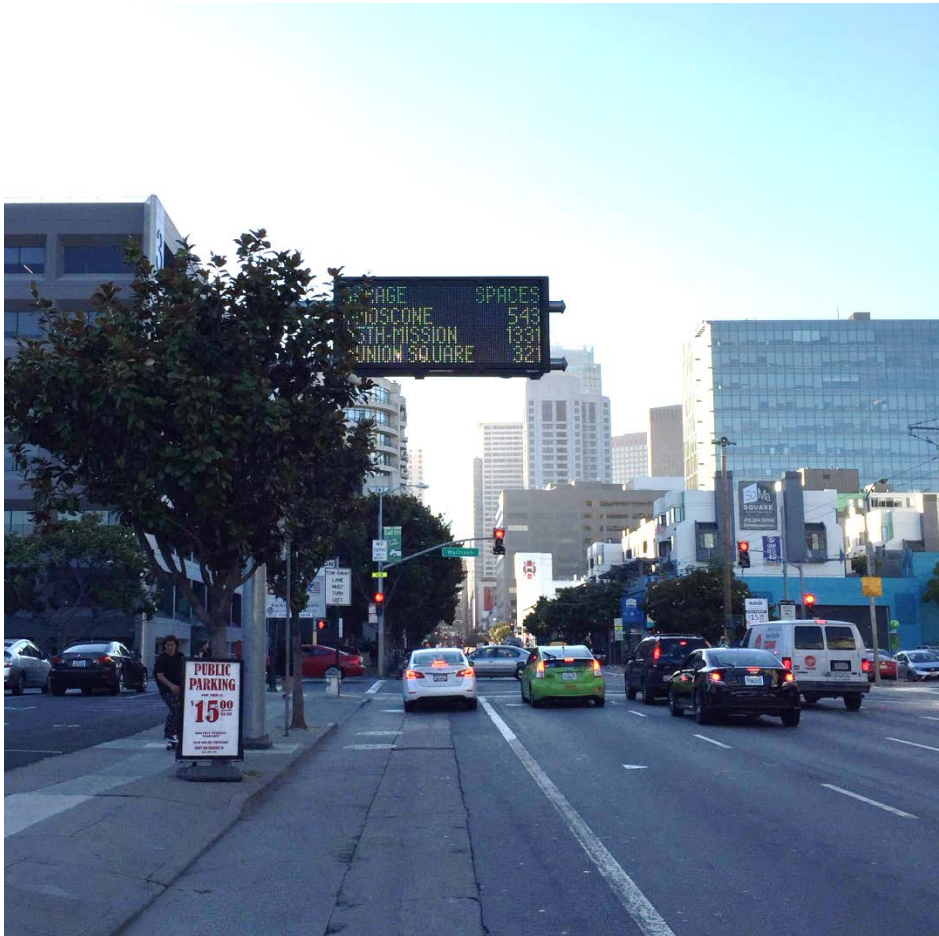
This programmatic measure consists of providing real-time parking pricing and availability information to Mission Rock residents, employees, and visitors who utilize the off-street parking facilities on-site. Information could be displayed on signs outside of the parking garage, and could also be accessible on the mobile-friendly Mission Rock website. For market-based parking pricing to be truly effective, the dynamic between price and availability must be clearly communicated to drivers. Making such information readily available to potential drivers, particularly at parking garage entrances, decreases the likelihood of drivers’ circling for parking or potentially increases the possibility of choosing other modes.

Real-time availability information for an overall facility can be derived from the access control of the parking garage, calculated based on the number of entries and exits at any given time. To provide garage floor-specific information on where spaces are available, each parking space needs a sensor (typically embedded in the floor) that communicates wirelessly with a central system to sense when the space is occupied.



**Mission Rock will install dynamic displays (or use another state-of-the-practice price-information sharing measure) to show real-time parking price and availability information, and will endeavor to make this information available through other channels like a Mission Rock transportation website; this will require installing technology and associated information systems to automatically monitor parking usage.**

Figure 8 Dynamic Parking Signage, SoMa



### Implementation Examples

All City-owned garages that participate in the demand-based parking pricing program, *SFpark*, provide real-time pricing and availability information on the *SFpark* website; there are several dynamic message signs at key intersections in SoMa that indicate the number of parking spaces available and general wayfinding to those garages.

## BUILDING MEASURES

### ❖ In-Building Concierge Services

In-building concierge services and/or multi-purpose front-desk staff can facilitate valet parking, farm-to-table produce delivery, cold and dry storage for grocery or produce delivery, and secure package delivery. Concierge staff could also provide information about the nearest stores and services like dry cleaning and laundry service, as well as pickup/delivery services from local merchants. Residents would pay for all services.

This concierge will be supported by the site-wide transportation staff who would provide centralized transportation support to the in-building concierges (see section on the site-wide transportation staff below). The combination of these services will consolidate or eliminate the need for additional trips and could be a resource for residents, providing targeted travel information. In buildings where a concierge service isn't feasible, the site-wide transportation staff will provide this service to the building tenants.

**Mission Rock will encourage vertical developers to appoint an in-building concierge to provide information about local merchants and coordinate/facilitate delivery services for residents.**

#### Implementation Examples

Though many residential buildings provide a concierge, explicitly pairing in-building concierge staff with a transportation specialist would be a new measure for reducing trips and demand for parking. Crafting and marketing the concierge's role as such may increase the program's effectiveness.

### ❖ Coordinated Delivery Services

Mission Rock will aim to partner with online personal service providers (i.e. Instacart, Postmates, Taskrabbit) or facilitate other ways of making ordering in, instead of making separate trips off the property for daily needs, more appealing and reduce vehicle trips in the process. One potential way to do this would be to offer direct ordering through the Mission Rock website. Each building would manage these services individually as needed.

**Mission Rock will aim to establish site-wide partnerships with internet delivery services companies.**

#### Implementation Examples

NEMA on Market Street facilitates local organic produce and wine delivery, which is part of its overall suite of concierge services. This type of amenity could be coupled with an app-based ordering system, such as Instacart or Postmates, or Mission Rock may want to develop one specific to its services.

### ❖ CSA Partnerships

Partnering with local community-supported agriculture (CSA) organizations has the potential to reduce greenhouse gas emission and vehicle-trips by providing project residents convenient access to locally sourced food, reducing the number of trips and vehicle miles traveled by both

vendors and consumers. This measure could also have marketing benefits and reinforce the site's overall message about sustainability. Initial conversations about bringing a farmers' market to Mission Rock have yielded a cost estimate of approximately \$75,000 to \$100,000 annually for Mission Rock to manage it in-house. Alternatively, hiring a farmers market management company could reduce costs to as low as \$15,000. However, providing a farmers market may result in generating more trips rather than it offsets; as such, a partnership with a local CSA might be more cost-effective.

**Mission Rock will coordinate with local CSAs to provide group deliveries, and continue exploring the possibility of hosting regular farmers' markets on the premises.**

### **Implementation Examples**

This would be a new measure; although there are multiple farmers' markets throughout San Francisco, they are not specific to a certain development or community, nor were they started with a specific development's needs in mind.

### **❖ Cold and Dry Delivery Storage Space**

Providing storage space for groceries, laundry, and other packages can have a direct effect on reducing trips by encouraging and facilitating online ordering. A centralized storage facility within each building can also consolidate delivery trips by enabling delivery vehicles to only make one stop for multiple recipients instead of several. Where this type of measure has been implemented without direct staff monitoring at all times, building residents typically access deliveries through a locker system with unique pick-up codes that include the locker number and access times for the delivery recipient.

**Mission Rock will work with the vertical developers to provide storage space near the concierge and elevators to store packages, perishables, laundry, and other deliveries.**

### **Implementation Examples**

Presidio Landmark has a wine cellar with climate controlled lockers; separate storage lockers are also provided.

### **❖ Family Supportive Amenities**

Providing secure storage space for personal car seats, strollers, athletic or other extracurricular gear, and other large equipment can address challenges families face while traveling. Locating this space near car share parking spaces make it easier for families to travel without feeling a personal vehicle is necessary. If this measure is implemented without direct staff monitoring at all times, building residents can access the space with an access code or key card.

**Mission Rock will provide storage space for family-related equipment near car share parking spaces.**



## ❖ Convenient Loading Zones

While the site does not contain on-street parking, Mission Rock is planning to dedicate a portion of the site's curb space for loading and deliveries of goods and people to reduce the need to make personal vehicle trips. Curb designations will be consistent with City of San Francisco regulations. Under those regulations, taxis, transportation network companies, and private vehicles may drop off along any curb space not designated by a red curb or marked otherwise. Vehicles may not idle in these locations as per San Francisco Transportation Code Section 7.2.86. As noted earlier, the project team will work with the City to develop a loading management plan during a future phase of project development.

Drop-off locations for seniors and people with disabilities will be located near building entrances, elevators, and at corners with curb ramps. The location of loading zones will also take into consideration the moving needs of residents and businesses. See the Mission Rock Transportation Plan and the Design Controls for more detail on the planned location of loading and delivery zones and for more information on Americans with Disabilities Act (ADA) accessibility on the site.

**Mission Rock is integrating loading zones into the site's overall street design.**

## ❖ ❖ Childcare Facilities and Services

Providing childcare services on site at Mission Rock would break down a key barrier for parents to taking non-auto modes to work by bringing such services within walking distance and near the many commute options around the Mission Rock site. Mission Rock will aim to attract a childcare provider, likely on the ground floor of a northern parcel, near China Basin Park.

**Mission Rock will aim to attract a provider of on-site childcare services and facilities to ensure easy access for Mission Rock residents and employees.**

### Implementation Examples

Many residential developments in major cities provide childcare services as part of their amenities; NEMA on Market Street provides childcare, and North Beach Place provides day care and children's play areas. A housing development at 8<sup>th</sup> and Market instituted unbundled parking to free up space for an on-site childcare center. Parkmerced includes a Montessori School on its premises, with full daycare and after-school care.

## ❖ Collaborative Work Space

A business services room can help encourage and facilitate working from home, which can have a direct impact on reducing trips to and from the site. Such an amenity is a typical part of large rental buildings, though the size and specific services included vary.

At Mission Rock, work spaces could include rentable work rooms that can be reserved in advance, equipped with video conferencing equipment, high-speed internet connections, projectors, white boards, basic office supplies, and printing, scanning, and faxing services. For residents interested in using this work space long term, dedicated mailboxes for businesses could be set aside and located nearby. Vertical developers will ultimately be responsible for developing and maintaining these business services rooms and ensuring that they are equipped with appropriate equipment.

**Mission Rock will work with vertical developers to implement this measure.**

## Implementation Examples

NEMA (Market Street, San Francisco) has a business lounge with Apple computers, printers, fax machines, and scanners, and a board room with phone, touch screen monitor, and computer hook-ups. Many newer residences also offer Wi-Fi throughout all common areas.

Figure 9 Co-Working Space



Source: Wikimedia, Chris Gallegos

## ❖ Convenient Elevator Design

By designing elevators that easily accommodate bicycles, strollers, and wheelchairs, Mission Rock will be able to increase the visibility and communicate the importance of bicycling and improve the family friendliness and accessibility of the project. Building codes already require elevators to be large enough to accommodate a variety of users, but the project will also aim to provide appropriate wayfinding and signage for elevators to educate residents about using the appropriate elevators to transport bicycles and other wheeled conveyances.

**Mission Rock will work with vertical developers to implement this measure and meet building code requirements.**

## Implementation Examples

Many residential developments have gone to great lengths to design their facilities as bicycle friendly, but none have specifically called out adaptations to their elevations as an accommodation or amenity.

## ❖ On-Site Affordable Housing

Residents living in affordable housing typically own fewer cars per household than residents of market-priced units. They are more likely to use transit and are less likely to require parking, reducing overall vehicle trip generation.

**Mission Rock will restrict 40% of on-site units to inclusionary affordable housing, to be provided in a balanced manner throughout the phasing of the development.**

## ALL-REALM MEASURES

### ❖ On-Site Transportation Staff

The Mission Rock team aims to hire at least one on-site transportation staff person proficient in the planning and implementation of a TDM program, with an annual budget for TDM staffing, communications, and programs. The site-wide transportation staff will provide customized travel guidance to residents and employees, helping raise awareness and understanding of transportation options and ensuring that site users can find non-auto transportation options that meet their unique travel needs. They may also provide resources to support employers, such as helping them enrolled in pre-tax benefits and/or San Francisco's Emergency Ride Home program, setting up flexible work schedules, developing employee mobility management programs and organizing sitewide marketing and incentive campaigns. Other staff, such as the in-building concierge or those tasked with organizing bike events and maintaining the bike resource room, could also provide similar targeted information and facilitate discussions around using different modes. This dedicated transportation staff would act as a centralized transportation resource to the in-building concierges, providing up-to-date transportation information and expert support to front-line staff that are less likely to have the same depth of knowledge of the transportation system.

The on-site transportation staff will also support efforts to collect data to evaluate the effectiveness of the overall TDM program and to understand opportunities to adjust the program to meet changing needs of Mission Rock residents, employees, and visitors. Chapter 3 provides additional detail about how the other TDM measures will leverage the transportation staff for marketing and communications.

**Mission Rock will hire and task dedicated transportation staff with providing individualized advice and information on transportation options to residents and employees.**

### Implementation Examples

This would likely be a new measure, as other developments have not explicitly instituted and integrated transportation information with residential or employee services. Several cities have used something similar to this measure at a neighborhood level. Portland, Ore. has seen notable mode shifts from its Smart Trips program, which provides targeted marketing and information on non-auto transportation options in particular neighborhoods.

### ❖ Mobile-Friendly Mission Rock Transportation Website

A mobile-friendly website oriented toward all residents, employees, and visitors providing online access to concierge services and transportation programs can help raise awareness and visibility of transportation options and facilitates connections among transportation modes. The transportation information on the Mission Rock site will likely include but not be limited to real-time transit information and a transportation tab with all nearby options (e.g. Muni, car share, scooter share, ride-sourcing apps) showing locations and availability. Chapter 3 provides



additional detail about how the other TDM measures will leverage the website for marketing and communications.

**Mission Rock will create a site-wide website with a dynamic and engaging section dedicated to transportation information and services, with specific portals for each user type (or the state-of-the-practice equivalent to this measure, per changes in technology by the time of first occupancy).**

### **Implementation Examples**

NEMA (Market Street, San Francisco) has a "resident portal" where residents can submit work orders, track packages, pay rent, alert the valet, and communicate with management regarding car charging, car share, bike share, and bike repair.

### **❖ Signage and Wayfinding across Modes**

Signage and wayfinding to indicate points of connection between different modes, as well as estimated travel times and directions by mode, can help increase people's understanding of travel options. Clear signage is also important for ensuring safety for all types of users, differentiating spaces for different users within shared public spaces. Signage will also indicate the nature and location of nearby bicycle routes. Mission Rock will coordinate with the City on the project's overall signage and wayfinding program to ensure the project conforms to City standards. Chapter 3 provides additional detail about how the other TDM measures will leverage signage and wayfinding for marketing and communications.

**Mission Rock will design and install signage and wayfinding at key points throughout the development, including signage for safety along the shared streets.**

### **Implementation Examples**

Interactive signage and wayfinding has been instituted in a variety of cities, academic institutions, and transportation hubs.

### **❖ Improved Walking Conditions**

As described in the Mission Rock Design Controls, the development will add over half a mile of complete streets, including new and improved sidewalks and pedestrian crossings. Complete streets are streets designed and operated to enable safe access for users of all ages, abilities, and transportation modes with the ultimate goal of fostering more livable communities. Today, many sidewalks in Mission Bay are narrow or missing in areas. The new streets within Mission Rock will greatly improve the overall walking conditions of the neighborhood and facilitate safer and more convenient pedestrian connections. A pedestrian-oriented urban design is essential for residents, employees, and visitors to fully take advantage of the other TDM measures, supporting access to all of the available transportation options and programs throughout the site and nearby. These improvements help shape the environment for the other TDM measures to succeed.

**Mission Rock has integrated high-quality pedestrian design features (high connectivity, wide sidewalks, highly visible crossings, and others) into its design.**

## 3 MARKETING AND COMMUNICATIONS

A strong communication measure is critical to the success of any TDM program, ensuring that residents, employees, and visitors receive information about relevant resources and incentives at appropriate times and through channels that are easily accessible. Incorporating consistent branding into all communications can help create a sense of place and establish a cohesive identity for the transportation program. Branding can be used to support marketing and communication efforts, particularly on signage and wayfinding, to emphasize that residents, employees, and visitors can travel seamlessly through the area.

The Plan anticipates that Mission Rock will likely have three main channels for transportation-related communications: Its site-wide transportation staff, a mobile-friendly web portal for site users, and physical signage and other wayfinding mechanisms on site. This section includes examples of communication tactics and channels to illustrate how specific channels can help reach target audiences. Given the diverse mix of ways different people process information, any good communications plan relies on a mix of measures and channels. The Communications Timeline section matches the mix of channels outlined in this section to the key audiences for the information: residents, employees, and visitors.

Communications technology and norms are changing rapidly, and as such, this portion of the Plan will necessarily be updated as the projects approaches first occupancy. As such, the details for each of these measures are presented as a set of recommendations. Regardless of how they are implemented, these measures remain part of the TDM Plan.

### SITE-WIDE TRANSPORTATION STAFF

Mission Rock transportation staff would be responsible for maintaining information about TDM programs and acting as a point of contact to assist residents, employees, and visitors with transportation-related questions, concerns, or general assistance. The Mission Rock team envisions that a transportation coordinator would have the authority to implement TDM measures, oversee the management and marketing of all measures, and monitor success of the TDM program. Whether the coordinator would need support from additional staff and how large the team would be will be figured out as the communications measure is solidified closer to occupancy.

Transportation staff might also be responsible for compiling a print and/or electronic transportation handbook to be distributed to residents on move-in and employees on hiring. This handbook could include information on transportation programs, policies, and service options, in addition to the following information:

- Transportation staff contact information, including information for the in-building concierges (if relevant)

- Commute trip planning information, including links to the regional 511 Rideshare program
- Clipper card and vehicle (including car, bike, and scooter) share membership subsidies and parking policies
- Information on accessing other TDM program details and amenities, such as the in-building storage facilities
- Walking and biking routes within the area, estimated walk and bike times to key locations, including transit hubs, and a link to the San Francisco bike map
- Local transit options and schedules, including links to Muni, BART, and Caltrain schedules, route maps, and existing trip planner mobile applications

It is envisioned that this handbook would be distributed to all prospective residential tenants and all prospective employees who receive an offer to work within the development. It might also be included as a component of resident and employee welcome packets or employee orientation. The information provided in the handbook, as well as relevant website addresses, may also be posted in prominent locations for all residents and employees, such as apartment lobbies or lunchrooms. Print materials with information on various programs, maps, and amenities could also be provided to the in-building concierge staff for easy distribution when questions arise.

The transportation coordinator will also be responsible for supporting employers by providing information and guidance regarding tools and programs for flex work or telecommuting.

To make sure information stays useful to residents and employees over time, it is important that Mission Rock transportation staff keep all information and materials up to date and relevant.

## **MOBILE-FRIENDLY MISSION ROCK WEBSITE**

Mobile-friendly websites are an easy way to create a dynamic and engaging repository for transportation information, point-to-point navigation tools, travel suggestions, user engagement campaigns, and other efforts to raise awareness of alternatives to drive-alone travel options and residents, employees, and visitors to use them. In addition to supporting the information already provided in the resident and employee handbook, this website could include the following:

- Real-time transit information
- Real-time parking pricing and availability information
- Notifications of upcoming transportation-related events, such as bike parties and farmers' markets, and alerts
- Integration with internet delivery services for ordering
- Registration for car share, bike share, and/or scooter share memberships
- Room reservations for the collaborative workspace
- On-site childcare services enrollment
- Specific pages or portals for residents, employees, and visitors so that each of these audiences has access to the appropriate and relevant travel information
- Functionality which allows for tracking travel behavior and enables gamification for incentives

Establishing specific portals for each audience can allow for the delivery of targeted, individualized TDM information for each of the audience groups. For example, the resident and employee portals could have features to receive notifications for coordinated delivery services,



should Mission Rock choose to develop a centralized delivery facility. Each of the portals could also provide specific information on costs and multimodal options available for traveling to and from Mission Rock, as well as information on nearby attractions and services and links to citywide or regional information. Figure 9 shows an example of a landing page for this type of website. Advantages of a webpage similar to that shown in the figure include prominent links to a trip planning service, alerts for riders, and individual operator websites for more information.

Figure 10 Sample Site-Wide Transportation Website, Mountain View Transportation Management Association (TMA)



## SIGNAGE AND WAYFINDING

Clear, consistent, and predictable signage and wayfinding can help residents, employees, and visitors navigate the site easily. Signage can also bring awareness to important information such as parking prices and availability, bike parking locations, estimates of bike and pedestrian travel times, and other information on Mission Rock programs or services. Simply providing information on non-motorized travel prominently can increase the likelihood that people will select biking or walking as their mode of transportation.

The efficacy of signage and wayfinding is dependent of the design and placement of signs. Signage should be clear and provide relevant information at key decision points in people's journeys, in areas that are highly visible, and in clear lines of sight. For instance, when entering the site, cyclists should be able to clearly understand the route options along Terry Francois Boulevard, Exposition Street, and Bridgeview Street. This signage will be especially important for safety along the shared public ways, to ensure that users understand the encouraged forms of travel and





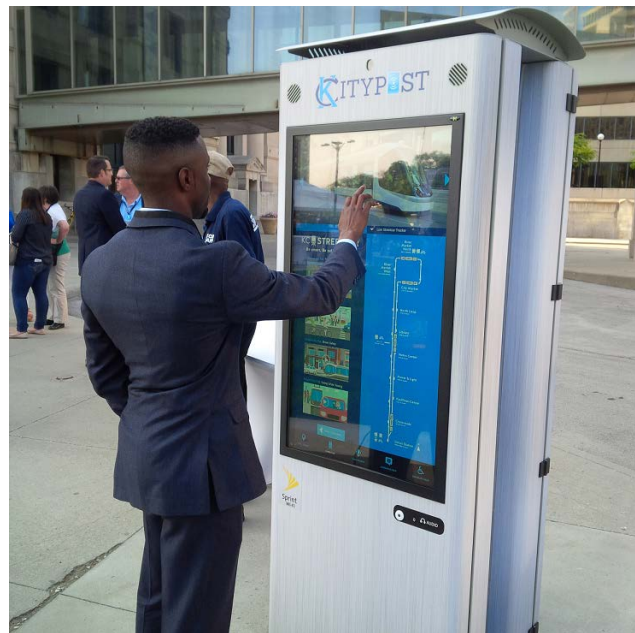
Figure 12 Bike Route and Parking Signage



Source: NelsonNygaard, signal-tech.com

## Transportation Information Kiosks

Transportation information kiosks can provide centralized locations for relevant transportation information for trips within Mission Rock and to nearby services and attractions. These kiosks could be placed throughout the site, at strategic decision-making locations where residents, employees, and visitors might need the information. For instance, kiosks located at the primary entrances to Mission Rock such as the intersection of Terry Francois Boulevard and Mission Rock Street could include all information necessary to navigate to specific places throughout the site. Similarly, kiosks could be placed in and around primary points of congregation on the site, including China Basin Park and Mission Rock Square. The kiosks could include transit schedules and fare information, walking and cycling routes, real-time transit information, and Ford GoBike dock locations and bike availability.



Source: Kansas City example from transit.dot.gov

It is recommended that these kiosks be digital, interactive displays (as shown in the accompanying image) to allow information to be updated easily and regularly. These boards would be maintained and updated as needed by the transportation staff.

Real-time transit information signage, such as the technology provided by TransitScreen, would be a similar dynamic information-distribution mechanism aimed mostly at residents, employees, and their visitors, located in the site's residential and office building lobbies (see more information on this measure in Chapter 2). While the information kiosks can provide detailed information on transportation options to visitors and others new or unfamiliar with Mission Rock

and the surrounding area, real-time transit screen technology is designed to offer an opportunity to understand transportation options at a quick glance. This would be particularly useful for employees and residents, those who make recurring trips frequently and don't need detailed guidance.

## **COMMUNICATION TIMELINE**

Each of the communication-based TDM measures are pertinent to residents, employees, and visitors at different times during their lifecycle at Mission Rock. As such, it is critical to think strategically about when to share what with each of these key segments.

The mobile-friendly Mission Rock website will be an important avenue for sharing information about programs, policies, and services. It is reasonable to assume that the website will act as a front-line communications vehicle to reach all of those who have or may be interested in having a connection with the site. Signage and wayfinding will be seen on a daily basis and is an important element for users of the development to efficiently navigate Mission Rock. The site-wide transportation staff will provide key information for residents and employees at the time of move-in or hire, and will provide as needed services over time. See Figure 12 through Figure 14 for more detail on the progression of anticipated touch points for transportation-related communication for residents, employees, and visitors of Mission Rock.



**MISSION ROCK TRANSPORTATION DEMAND MANAGEMENT PLAN**  
Seawall Lot 337 Associates, LLC

Figure 13 Residential Communications Touch Points

	Pre-Move In & Lease Signing Period	Move-in Period	Establishing Transportation Patterns	Ongoing	Life Change: New Job	Life Change: Family
<b>Website</b>	Promote website and all web-based transportation tools through pages or portal aimed at prospective tenants	Receipt of access to special "residents-only" website pages/portals	Visit website to plan frequent trips and learn about transportation options, sign up for any available subsidies or complimentary memberships, as applicable	Ongoing use of website for trip planning tools, information on events, and program memberships	Return to trip planning tools and information on website	Return of trip planning tools and information on website
<b>Wayfinding &amp; Signage</b>	View wayfinding and signage when touring site	Gain deeper familiarity with the site and surroundings through signage and wayfinding	Use of dynamic wayfinding (kiosks and transit screens) to deepen understanding of nearby transportation options and develop time/schedule patterns	Ongoing use of wayfinding and signage	Renewed use of dynamic wayfinding to deepen understanding of new transportation options given new destination	Renewed use of dynamic wayfinding to deepen understanding of new transportation options given new destination; use of signage pointing to family transportation resources
<b>Site-wide Transportation Staff</b>	Discussion of transportation handbook, nearby transportation options, amenities or subsidies as applicable, promotion of trip-planning assistance	Distribution of transportation handbook, one-on-one assistance in planning commute or other trip options, or signing up for transportation programs/memberships	One-on-one assistance in planning commute or other trip options	Available for questions as they arise	Additional one-on-one support to plan new routes, etc. as needed	Additional one-on-one support to plan new routes, understand family-friendly resources on site, as needed

**MISSION ROCK TRANSPORTATION DEMAND MANAGEMENT PLAN**

Seawall Lot 337 Associates, LLC

Figure 14 Employee Communications Touch Points

	Employer Signs Lease at Mission Rock	Employer Move-in Period	Employee Move-In Period	Ongoing: With Employer	Ongoing: With Employees	Ongoing: New Hires
<b>Website</b>	Promote website and all web-based transportation tools through pages or portal aimed at prospective tenants	Receipt of access to special "employer-only" website pages/portals	Employees receive access to special "employees-only" website pages/portal Plan frequent trips and learn about transportation options, sign up for available subsidies or complimentary memberships, as applicable	Ongoing references of website for trip planning tools, information on events and program memberships	Ongoing use of trip planner on website and other website tools	Receipt of access to special "employees-only" website pages/portals Ongoing use of trip planner on website and other website tools
<b>Wayfinding &amp; Signage</b>	View wayfinding and signage when touring site	Presentation regarding available wayfinding	Use of wayfinding and signage to learn about nearby transportation options	Ongoing use of wayfinding and signage	Ongoing use of wayfinding and signage	Presentation regarding available wayfinding
<b>Site-wide Transportation Staff</b>	Discussion of transportation handbook, nearby transportation options, amenities or subsidies as applicable, promotion of trip-planning assistance	Distribution of transportation handbook, one-on-one assistance in planning commute or other trip options, or signing up for transportation programs/memberships	Distribution of transportation handbook One-on-one assistance in planning commute options is made available to new employees	Presentations to share new web or wayfinding functionality, employee-focused TDM programs, and ongoing support structures	Available for questions as they arise	Distribution of transportation handbook Additional one-on-one support is available to plan new routes, etc.

**MISSION ROCK TRANSPORTATION DEMAND MANAGEMENT PLAN**  
Seawall Lot 337 Associates, LLC

Figure 15 Visitor Communications Touch Points

	Planning Trip to Site	(For Event Attendees) Purchase Tickets	Arrive on Site	Ongoing Time Spent on Site	Planning to Leave Site
<b>Website</b>	Use of public-facing website, including embedded trip-planning tools and parking pricing and availability information	Opportunity to receive tailored point-to-point trip suggestions and information emphasizing parking pricing and limited parking availability at time of ticket purchase	Use mobile-friendly website to understand transportation options, parking pricing and availability information, and maps of site		Use mobile-friendly website to plan onward journey from site
<b>Wayfinding &amp; Signage</b>			Use of dynamic parking pricing and availability signage; use of wayfinding and signage, including kiosks, to navigate to specific destination	Use of wayfinding and signage to navigate to additional destinations	Use of wayfinding and signage, including kiosks, to understand options for onward journey from site and navigate to nearby transit options, as applicable
<b>Site-wide Transportation Staff</b>	Coordinate with retailers and restaurants to post latest transportation information on their websites; maintain site website to ensure any updates to transportation information are readily available				

## 4 MONITORING AND COMPLIANCE WITH SF TDM ORDINANCE

A robust monitoring program that allows the site's transportation team to adjust offerings over time is key to the success of the Mission Rock TDM Plan. Monitoring will allow the Mission Rock team to better understand the effects of different measures on travel behavior and determine how programs are meeting the needs of residents, employees, and visitors.

The objectives of an annual monitoring program are:

1. To measure progress toward achieving, or retaining, compliance with the TDM's goal of reducing estimated aggregate daily one-way vehicle trips by 20%<sup>6</sup>; and
2. To identify the most and least effective TDM measures, so that the former can be strengthened and the later can be replaced or significantly improved.

This chapter describes the tools the transportation team will use to effectively monitor the program and ensure that the program complies with City of San Francisco monitoring requirements. It starts with a look at how the TDM Plan compares to the San Francisco TDM Ordinance.

### USING THE SAN FRANCISCO TDM ORDINANCE AS GUIDANCE

San Francisco adopted a citywide TDM Ordinance that created a TDM Program for new development in 2017. The goal of the Program is to reduce driving trips associated with new development. The Ordinance calls for development projects negotiated through Development Agreements, such as Mission Rock, to comply with the spirit of the Program, allowing that there may be unique opportunities because of project scale and mixes of use to meet the goals of the Program. Mission Rock's TDM Plan aims to reduce anticipated driving trips by 20% compared with what is estimated without TDM.

At the heart of the Ordinance is a menu of potential TDM measures, with points or credits assigned to different measures based on their documented effectiveness. Developers are required to implement measures that get them to a point total established based on the number of net new parking spaces planned as part of a given project. For example, residential and office projects with 20 or fewer parking spaces (including zero) need to implement measures with point values adding up to 13 points; each additional 10 spaces require projects to generate an additional point through additional TDM efforts. Retail projects with four or fewer spaces (including zero) need to

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<sup>6</sup> This goal is a 20% reduction compared to the aggregate daily one-way vehicle trips identified in Mission Rock's travel demand memo prepared by Adavant Consulting, dated June 30, 2015.



implement measures worth a total of nine points, and each additional two spaces will require another point.

Figure 16 estimates how the Mission Rock TDM Plan rates against the City's TDM Menu of Options and the range of associated point values. As the table shows, the measures included in this Plan are expected to garner 21 points for the residential component of the project, 20 points for the office component, and 12 points for the retail/restaurant component.

Figure 16 Comparing Mission Rock TDM Measures to Ordinance Measures, with Estimated Point Values

Program	Ordinance Category	Estimated Point Values by Use		
		Res	Office	Retail
Real-time transit information and marketing screens	INFO-2	1	1	1
One-time transit subsidies				
Bike share memberships	ACTIVE-4			
Space for on-site bike share				
Bicycle valet beyond code requirements	ACTIVE-7			1
Bike community programming with periodic giveaways				
Bicycle resource center, including vending machine with parts and tools and fix-it station	ACTIVE-5a	2	2	
Secure bike parking in buildings and along desire lines beyond code requirements	ACTIVE-2	2	2	2
Showers and clothes lockers for employees	ACTIVE-3		1	
On-site shared scooters	CSHARE-1	Covered	Covered	Covered
Electric scooter share memberships				
On-site car share parking spaces beyond code requirements	CSHARE-1	2	2	2
Car share memberships				
Market-based off-street parking pricing				
Unbundled parking	PKG-1	2	3	3

Program	Ordinance Category	Estimated Point Values by Use		
		Res	Office	Retail
Reduced parking supply				
Real-time information on parking pricing and availability				
In-building concierge services	DELIVERY-1	1	1	
Delivery coordination for online personal services	DELIVERY-1	Covered	Covered	
Partnerships with CSAs				
Cold, dry storage space for grocery and package delivery	DELIVERY-1	Covered		
Family supportive amenities	FAM-1	1		
Convenient loading zones				
Childcare services and facilities	FAM-2	2	2	
Collaborative work space with business services				
Convenient elevator design for bicycles, strollers, wheelchairs, etc.				
On-site affordable housing	LU-2	2		
Site-wide transportation staff	INFO-3	4	4	1
Mobile-friendly Mission Rock transportation website				
Intuitive signage and wayfinding for trip planning across all modes	INFO-1	1	1	1
Improved walking conditions to, from, and within Mission Rock	ACTIVE-1	1	1	1
		21	20	12

**There are several measures recommended in this Plan that do not clearly align with any of those specified in documents related to the Ordinance. As noted earlier, many of these measures play important roles in supporting programs that might more directly affect travel behavior. Others may deserve recognition in the City’s framework. Regardless, the specifics of Mission Rock’s TDM monitoring will be worked out through discussions with the City.**

## TDM PLAN MONITORING AND REPORTING

With the 20% trip reduction goal in mind, Mission Rock will monitor vehicle trips to and from the site for all buildings that have received a Certificate of Occupancy, and compare these vehicle trips to the aggregate daily one-way vehicle trips anticipated for those buildings based on the trip generation rates specified in the EIR supporting documents.

Monitoring will include the following elements:

- **Trip counts and intercept surveys.** This will consist of site-wide counts of persons and vehicles arriving and leaving the project site on a non-ballgame or major event day. Counts will take place over at least two days between 6 a.m. and 8 p.m.
- **Travel demand information.** The trip count and intercept survey data will provide the key inputs to calculating travel demand for the site in line with the San Francisco Planning Department's transportation impact analysis guidelines.
- **Documentation of Plan implementation.** Mission Rock transportation staff will document the implementation of the TDM Plan's elements.

### Timeframe for Monitoring

Per commitments made under the EIR, Mission Rock transportation staff will monitor and adjust the TDM Plan accordingly until 1) the Development Agreement expires, or 2) the site meets the reduction goal for up to eight consecutive reporting periods, whichever comes first. This monitoring will begin 18 months after the completion and commencement of operation of the proposed parking garage. After that point, the site transportation staff will submit annual monitoring reports until five consecutive reporting periods show that the reduction goal has been reached. After this point, staff will submit monitoring reports every three years.

If the TDM Plan's measures are not achieving the reduction goal after three consecutive reporting periods, Mission Rock will work with the Planning Department to adjust the program as necessary, which may include refining or removing existing measures, or adding new measures. If Mission Rock has adjusted the TDM program and has not met the reduction goal for up to eight consecutive reporting periods, the project may pay an additional emissions offset fee to address any shortfall in meeting the TDM Plan reduction target. At that point, monitoring and reporting requirements will be lifted.

Motion No. \_\_\_\_\_  
 October 5, 2017

CASE NO. 2013.0208E  
 Seawall Lot 337 and Pier 48 Mixed-Use Project

**ATTACHMENT A, EXHIBIT 1**

<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
<b>NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.</b>				
<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
<b>MITIGATION MEASURES FOR THE SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
<i>Cultural Resources (Archaeological Resources) Mitigation Measures</i>				
<p><b>M-CP-2: Archeological Testing.</b>                      Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archeological consultant from the rotational Qualified Archeological Consultants List (QACL) maintained by the Planning Department archeologist. The project sponsor shall contact the Planning Department archeologist to obtain the names and contact information for the next three archeological consultants on the QACL. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure at the direction of the Environmental Review Officer (ERO). All plans and reports prepared by the consultant, as specified herein, shall be submitted first and directly to the ERO for review and comment and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of 4 weeks. At the direction of the ERO, the suspension of construction can be extended beyond 4 weeks only if such a suspension is the only feasible means to reduce to a less-than-significant level of potential effects on a significant archeological resource, as defined in CEQA Guidelines, Sections 15064.5 (a) and (c).</p>	Permittee for horizontal improvements, such as infrastructure, in public right-of-ways, and public spaces (hereinafter "infrastructure developer") or vertical developer(s) for work on vertical development parcels and related improvements (hereinafter "vertical developer(s)"), <sup>1</sup> as applicable, to retain qualified professional archaeologist from the rotational pool of archaeological consultants maintained by the Planning	Prior to issuance of site permits.	Infrastructure developer or vertical developer, as applicable, to retain the qualified archeological consultant for the project who shall report to the ERO. Qualified archeological consultant will scope archeological testing program with ERO.	Considered complete when infrastructure developer or vertical developer(s), as applicable, retains a qualified professional archaeological consultant and archeological consultant has approved scope by the ERO and submits any required reports to ERO for the archeological testing program.

<sup>1</sup> Where applicable, "vertical developer" includes the Pier 48 developer.



**MITIGATION MONITORING AND REPORTING PROGRAM FOR  
 SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT**

**NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.**

<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
<p><i>Consultation with Descendant Communities:</i> On discovery of an archeological site<sup>2</sup> associated with descendant Native Americans, the overseas Chinese, or other potentially interested descendant group, an appropriate representative<sup>3</sup> of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and offer recommendations to the ERO regarding appropriate archeological treatment of the site, recovered data from the site, and, if applicable, interpretative treatment of the associated archeological site. A copy of the final archeological resources report shall be provided to the representative of the descendant group.</p>	<p>Department.                       Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant.</p>	<p>For the duration of soil-disturbing activities and data recovery of potentially significant archeological sites.</p>	<p>Infrastructure developer or vertical developer(s) (as applicable) and/or archaeological consultant shall contact the ERO and descendant group representative upon discovery of an archeological site associated with descendant Native Americans, Overseas Chinese, or interested descendant group. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations on the site and consult with the ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. Archaeological Consultant shall prepare a Final Archaeological Resources</p>	<p>Considered complete upon submittal of Final Archaeological Resources Report.</p>

<sup>2</sup> The term “archeological site” is intended here to include any archeological deposit, feature, burial, or evidence of burial.

<sup>3</sup> An “appropriate representative” of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American contact list for the City and County of San Francisco maintained by the NAHC or, in the case of overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the department archeologist.

<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
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<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
			Report in consultation with the ERO (per below). A copy of this report shall be provided to the ERO and the representative of the descendant group.	
<i>Archeological Testing Program.</i> The archeological consultant shall prepare and submit to the ERO for review and approval an archeological testing plan (ATP). The archeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archeological resource(s) that could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program will be to determine, to the extent possible, the presence or absence of archeological resources and identify and evaluate whether any archeological resource encountered on the site constitutes a historical resource under CEQA.	Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant in consultation with the ERO. Development of ATP for a defined geographic area and/or specified construction activities.	Prior to any excavation, site preparation or construction, and prior to testing, submit an ATP for a defined geographic area and/or specified construction activities to and obtain approval by the ERO. A single ATP or multiple ATPs may be produced to address project phasing.	Archaeological consultant to undertake ATP in consultation with ERO.	Prior to any soil disturbing activities. Considered complete upon approval of the ATP by the ERO and finding by the ERO that the ATP is implemented.
At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. If, based on the archeological testing program, the archeological consultant finds that significant archeological resources may be present, the ERO, in consultation with the archeological consultant, shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. No archeological data recovery shall be undertaken without the prior approval of the ERO or the Planning Department archeologist. If the ERO determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor:	Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant in consultation with the ERO.	Upon completion of the archeological testing program.	Archaeological consultant to submit results of testing, and, in consultation with ERO, determine whether additional measures are warranted. If significant archaeological resources are present and may be adversely affected., the infrastructure developer or vertical developer(s) (as applicable), at its discretion, may elect to redesign a project, or implement data	Considered complete after ERO review and approval of report(s) on ATP findings.

<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
<b>NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.</b>				
<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
			recovery program, unless ERO determines the archaeological resource is of greater interpretive than research significance and that interpretive use is feasible.	
<p>A. The proposed project shall be redesigned so as to avoid any adverse effect on the significant archeological resource, or</p> <p>B. A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.</p>	Written report on ATP findings: Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant in consultation with the ERO.	At the completion of each archaeological testing program.	Archeological consultant shall submit report of the findings of the ATP to the ERO.	After completion of archeological testing program.
<p><i>Archeological Monitoring Program.</i> If the ERO, in consultation with the archeological consultant, determines that an archeological monitoring program shall be implemented, the archeological monitoring program shall include the following provisions:</p> <ul style="list-style-type: none"> <li>The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the archeological monitoring program reasonably prior to any project-related soil-disturbing activities commencing. The ERO, in consultation with the archeological consultant, shall determine what project activities shall be archeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utility installation, foundation work, pile driving (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the risk these activities pose to potential archeological resources and their depositional context;</li> <li>The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), know how to identify evidence of the expected resource(s), and know the appropriate protocol in the event of apparent discovery of an archeological</li> </ul>	Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant in consultation with the ERO.	The archaeological consultant, infrastructure developer or vertical developer(s) (as applicable), and ERO shall meet prior to the commencement of soil-disturbing activities for a defined geographic area and/or specified construction activities. The ERO in consultation with the archaeological	If required, archaeological consultant to prepare the AMP in consultation with the ERO. Infrastructure developer or vertical developer(s) (as applicable), project archaeological consultant, and infrastructure developer's or vertical developer(s) contractors shall implement the AMP, if required by the ERO.	Considered complete on approval of AMP(s) by ERO; submittal of report regarding findings of AMP(s); and finding by ERO that AMP(s) is implemented.

<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
<b>NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.</b>				
<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
<p>resource;</p> <ul style="list-style-type: none"> <li>The archeological monitor(s) shall be present on the project site according to the schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with project archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;</li> <li>The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;</li> <li>If an intact archeological deposit is encountered, all soil-disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile-driving/construction activities and equipment until the deposit is evaluated. If, in the case of pile-driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile-driving activity may affect an archeological resource, the pile-driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit and present the findings of this assessment to the ERO.</li> <li>Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO.</li> </ul>		<p>consultant shall determine what archaeological monitoring is necessary. A single AMP or multiple AMPs may be produced to address project phasing.</p>		
<p><i>Archeological Data Recovery Program.</i> The archeological data recovery program shall be conducted in accordance with an archeological data recovery plan (ADRP). The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would</p>	<p>Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant in consultation with the ERO.</p>	<p>Upon determination by the ERO that an ADRP is required. A single ADRP or multiple ADRPs may be produced to address project phasing.</p>	<p>If required, archaeological consultant to prepare an ADRP(s) in consultation with the ERO.</p>	<p>Considered complete upon review and approval of the ADRP(s) by the ERO.</p>



<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
<b>NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.</b>				
<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
<p>address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to any portions of the archeological resources if nondestructive methods are practical.</p> <p>The scope of the ADRP shall include the following elements:</p> <ul style="list-style-type: none"> <li>• Field Methods and Procedures. Descriptions of proposed field strategies, procedures, and operations.</li> <li>• Cataloging and Laboratory Analysis. Description of selected cataloging system and artifact analysis procedures.</li> <li>• Discard and Deaccession Policy. Description of and rationale for field and post-field discard and deaccession policies.</li> <li>• Interpretive Program. Consideration of an onsite/offsite public interpretive program during the course of the archeological data recovery program.</li> <li>• Security Measures. Recommended security measures to protect the archeological resource from vandalism, looting, and nonintentionally damaging activities. Final Report. Description of proposed report format and distribution of results.</li> <li>• Curation. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.</li> </ul>				
<p><i>Final Archeological Resources Report.</i> The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. A separate, brief, non-confidential summary of findings that can be made available to the public shall be submitted with each FARR.</p>	<p>Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant in consultation with the ERO.</p>	<p>For infrastructure developer-prior to acceptance of work. Prior to issuance of Certificate of Temporary or Final Occupancy, whichever occurs first.</p>	<p>If applicable, archaeological consultant to submit a Draft FARR to ERO.</p>	<p>Considered complete on submittal of FARR and approval by ERO.</p>

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<p>Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archeological Site Survey Northwest Information Center (NWIC) shall receive one copy, the ERO shall receive a copy of the transmittal of the FARR to the NWIC, and the Environmental Planning division of the Planning Department shall receive one bound, one unbound, and one unlocked, searchable PDF copy on CD of the FARR, along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or high interpretive value of the resource, the ERO may require a final report content, format, and distribution different from that presented above.</p>	<p>Archaeological consultant at the direction of the ERO.</p>	<p>Upon approval of the FARR by the ERO.</p>	<p>Archaeological consultant to distribute FARR.</p>	<p>Considered complete when archaeological consultant provides written certification to the ERO that the required FARR distribution has been completed.</p>
<p><b>M-CP-3: Treatment of Human Remains, Associated or Unassociated Funerary Objects.</b>                      The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable state and federal laws. This shall include immediate notification of the coroner of the City and County of San Francisco and, in the event of the coroner’s determination that the human remains are Native American remains, notification of the Native American Heritage Commission (NAHC), which shall appoint a Most Likely Descendant (MLD) (PRC Section 5097.98). The ERO will also be immediately notified. The archeological consultant, project sponsor, ERO, and MLD shall have up to but not beyond 6 days after the discovery to make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines, Section 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing state regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects, as specified in the treatment agreement, if such an agreement has been made or, otherwise, as determined by the archeological consultant and the ERO.</p>	<p>Infrastructure developer or vertical developer(s) (as applicable) and archaeological consultant, in consultation with the San Francisco Coroner, NAHC, ERO, and MLD.</p>	<p>In the event human remains and/or funerary objects are encountered, during soils disturbing activity.</p>	<p>Archaeological consultant or archaeological monitor or infrastructure developer or vertical developer(s) or contractor to contact San Francisco County Coroner and ERO Implement regulatory requirements, if applicable, regarding discovery of Native American human remains and associated and/or unassociated funerary objects. Contact archaeological consultant and ERO.</p>	<p>Considered complete on notification of the San Francisco County Coroner, ERO, and NAHC, if necessary, and completion of treatment agreement and/or analysis.</p>

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<p><b>M-CP-4: Tribal Cultural Resources Interpretive Program.</b>                      If the ERO determines that a significant archeological resource is present, and if in consultation with the affiliated Native American tribal representatives, the ERO determines that the resource constitutes a tribal cultural resource (TCR) and that the resource could be adversely affected by the proposed project, the proposed project shall be redesigned so as to avoid any adverse effect on the significant tribal cultural resource, if feasible.                      If the Environmental Review Officer (ERO) determines that preservation-in-place of the tribal cultural resource (TCR) pursuant to Mitigation Measure M-CP-2, Archeological Testing, is both feasible and effective, then the archeological consultant shall prepare an archeological resource preservation plan (ARPP). Implementation of the approved ARPP by the archeological consultant shall be required when feasible.                      If the Environmental Review Officer (ERO), if in consultation with the affiliated Native American tribal representatives and the Project Sponsor, determines that preservation-in-place of the tribal cultural resources is not a sufficient or feasible option, the project sponsor shall implement an interpretive program of the TCR in consultation with affiliated tribal representatives. An interpretive plan produced in consultation with the ERO and affiliated tribal representatives, at a minimum, and approved by the ERO would be required to guide the interpretive program. The plan shall identify, as appropriate, proposed locations for installations or displays, the proposed content and materials of those displays or installation, the producers or artists of the displays or installation, and a long-term maintenance program. The interpretive program may include artist installations, preferably by local Native American artists, oral histories with local Native Americans, artifacts displays and interpretation, and educational panels or other informational displays.</p>	<p>Infrastructure developer or vertical developer(s) (as applicable), archaeological consultant, and ERO, in consultation with the affiliated Native American tribal representatives.</p>	<p>If significant archeological resources are present, during implementation of the project.</p>	<p>Infrastructure developer, vertical developer(s), or archaeological consultant shall implement the project redesign, completion of archeological resource preservation plan, or interpretive program of the TCR, if required.</p>	<p>Considered complete upon project redesign, completion of ARPP, or interpretive program of the TCR, if required.</p>
<b><i>Transportation and Circulation Mitigation Measures</i></b>				
<p><b>M-TR-3: Parking Garage and Intersection Queue Impacts.</b>                      The easternmost driveway on Long Bridge Street (i.e., closest to Bridgeview Street) shall be restricted to right-in, right-out access during all times. Restricted access could be accomplished by placing signage (i.e., on Long Bridge Street to direct westbound traffic to the westernmost garage driveway, and within the parking garage for exiting traffic to indicate outbound right</p>	<p>Infrastructure developer, garage operator, or vertical developer(s) of garage.</p>	<p>Prior to issuance of certificate of occupancy of Block D2 parking garage.                      Note: Mitigation</p>	<p>SFMTA, in consultation with the Planning Department and the Port, to review and sign off on detailed plans regarding driveways to ensure design will</p>	<p>Considered complete upon approval of the final driveway plans by SFMTA,</p>

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turn movement only allowed) as well as delineators of a sufficient length in the middle of Long Bridge Street to block left-turn access to the driveway.		Measure M-TR-3 is not applicable to Variant 3 (Reconfigured Parking).	sufficiently restrict movements at driveway to right-in, right-out.	Planning Department, and the Port.
<p><b>M-TR-4.1: Provide Fair-Share Contribution to Improve 10 Townsend Line Capacity.</b></p> <p>Upon completion and occupancy of Phase 1 of the proposed project and upon completion and occupancy of each subsequent phase as defined in the Development Agreement the project sponsor shall obtain from SFMTA the current ridership on the 10 Townsend and conduct an assessment of the capacity utilization at the screenline’s Maximum Load Point (MLP) for weekday AM and PM peak hour conditions.</p> <p>If the capacity utilization exceeds 85 percent, a fair share contribution payment shall be made to SFMTA by the project sponsor, calculated as further provided in a Transit Mitigation Agreement described below, and attached to or incorporated into the Development Agreement. Such payment shall be adjusted, as appropriate, to the extent, if any, that the proposed project reflects either the High Residential Assumption or High Commercial Assumption based upon all phases of the proposed project that have been completed up to such date. Accordingly, the fair share contributions by phase may differ by scenario because the number of transit riders varies due to different mixes of land use.</p> <p>If the capacity utilization based on SFMTA’s ridership data is less than 85 percent, then the project sponsor’s fair share payment for that phase shall be \$0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts.</p> <p>The project sponsor shall enter into a Transit Mitigation Agreement with the SFMTA pursuant to which the project sponsor will make a fair share contribution to the cost of providing additional bus service or otherwise improving service on the 10 Townsend. The fair share contribution as documented in the Transportation Impact Study for the proposed project shall not exceed the following amounts, in total across all phases:</p> <p>a. \$991,230 for High Commercial Assumption</p>	Infrastructure developer and/or vertical developer(s), Transportation Coordinator, and SFMTA.	Prior to issuance of certificate of occupancy of Phase 1 of the proposed project, enter into Transit Mitigation Agreement. Upon issuance of a certificate of occupancy for each phase of development as defined in the Development Agreement, SFMTA to provide ridership data and assess capacity utilization and, if capacity utilization exceeds 85 percent, the infrastructure developer/vertical developer(s) would pay fair share contribution fees as specified in this measure, which would be used by	Infrastructure developer and/or vertical developer(s) and Transportation Coordinator to obtain current ridership on the 10 Townsend from SFMTA and conduct an assessment of the capacity utilization associated with the project, as described in the measure. If the capacity utilization of the 10 Townsend line at its maximum load point exceeds 85 percent as measured at the completion of any individual project phase, and the SFMTA has committed to implement M-TR-4.1, the infrastructure developer shall provide a fair share contribution subject to the limits stated in M-TR-4.1 to capital costs for SFMTA to implement one of the designated capacity enhancement measures.	Considered complete upon execution of Transit Mitigation Agreement and payment of fair share contribution as described in this M-TR-4.1 for any phase of development for which such contribution is determined to be necessary.



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<p>b. \$782,706 for High Residential Assumption                      SFMTA will determine whether adding bus(es) or other measures are more desirable to increase capacity along the route and will use the funds provided by the project sponsor to implement the most desirable measure(s), which may include but is not limited to the following measures:</p> <ol style="list-style-type: none"> <li>1. Convert to using higher-capacity vehicles on the 10 Townsend route. In this case, the project sponsors fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.</li> <li>2. Instead of adding more buses to a congested route, increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor's fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements.</li> <li>3. Increase capacity along the corridor by adding a new Muni service route in this area. If this option is selected, the project sponsor's fair share contribution may fund the purchase of the new vehicles.</li> </ol>		SFMTA to increase capacity.		
<p><b>M-TR-4.2: Provide Fair-Share Contribution to Improve 30 Stockton Line Capacity Proposed Project.</b>                      Upon completion and occupancy of Phase 1 of the proposed project and upon completion and occupancy of each subsequent phase as defined in the Development Agreement, the project sponsor shall obtain from SFMTA the current ridership on the 30 Stockton and conduct an assessment of the capacity utilization at the Maximum Load Point (MLP) on the route between the proposed project and Market Street for weekday PM peak hour conditions.                      If the capacity utilization exceeds 85 percent, a fair share contribution payment shall be made by the project sponsor, calculated as further provided in Transit Mitigation Agreement described below, and attached to or incorporated into the Development Agreement. Such payment shall be</p>	Infrastructure developer and/or vertical developer(s), or Transportation Coordinator, and SFMTA.	Prior to issuance of certificate of occupancy of Phase 1 of the proposed project, enter into Transit Mitigation Agreement. Upon issuance of a certificate of occupancy for each phase of development as	Infrastructure developer or Transportation Coordinator to obtain current ridership on the 30 Stockton from SFMTA and conduct an assessment of the capacity utilization associated with the project, as described in the measure.  If the capacity utilization of the 30 Stockton line at its maximum load point exceeds 85 percent as measured at	Considered complete upon execution and implementation of Transit Mitigation Agreements and payment of fair share contribution as described in this M-TR-4.2 for any phase for which

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<p>adjusted, as appropriate, to the extent, if any, that the proposed project reflects either the High Commercial Assumption or the High Residential Assumption, the latter of which does not require any fair share contribution. The fair share contributions differ by scenario because the number of transit riders varies due to different mixes of land use.</p> <p>If the capacity utilization based on SFMTA’s ridership data is less than 85 percent, then the project sponsor’s fair share payment for that phase shall be \$0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts.</p> <p>The project applicant shall enter into a Transit Mitigation Agreement with the SFMTA pursuant to which the project applicant will make a fair share contribution to the cost of providing additional bus service or otherwise improving service on the 30 Stockton. The fair share contribution as documented in the Transportation Impact Study for the proposed project shall not exceed the following amounts, in total across all phases:</p> <ul style="list-style-type: none"> <li>a. \$417,691 for High Commercial Assumption</li> <li>b. \$0 for High Residential Assumption</li> </ul> <p>SFMTA will determine whether adding bus(es) or other measures are more desirable to increase capacity along the route and will use the funds provided by the project sponsor to implement the most desirable measure(s), which may include but is not limited to the following measures:</p> <ol style="list-style-type: none"> <li>1. Convert to using higher-capacity vehicles on the 30 Stockton route. In this case, the project sponsors fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.</li> <li>2. Instead of adding more buses to a congested route, increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor’s fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the</li> </ol>		<p>defined in the Development Agreement, SFMTA to provide ridership data and assess capacity utilization and, if capacity utilization exceeds 85 percent, the infrastructure developer/vertical developer(s) would pay fair share contribution fees as specified in this measure, which would be used by SFMTA to increase capacity.</p>	<p>the completion of any individual project phase, and the SFMTA has committed to implement M-TR-4.2, the infrastructure developer shall provide the fair share contribution subject to the limits stated in M-TR-4.2 to capital costs for SFMTA to implement one of the designated capacity enhancement measures.</p>	<p>such contribution is determined to be necessary.</p>

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<p>bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements.</p> <p>3. Increase capacity along the corridor by adding a new Muni service route in this area. If this option is selected, the project sponsor’s fair share contribution may fund the purchase of the new vehicles.</p>				
<p><b>M-TR-6: Parking Garage and Intersection Queue Impacts on Transit Delay</b></p> <p>A. The westernmost driveway on Mission Rock Street (i.e., closest to Third Street) shall be restricted to right-in, right-out access and closed during large AT&amp;T Park events. Restricted access could be accomplished by placing signage as well as delineators of a sufficient length on the center line on Mission Rock Street t, east of Third Street o block left-turn access to the driveway.</p>	<p>Infrastructure developer and/or garage operator SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff.</p>	<p>Prior to certificate of occupancy for Block D garage.</p>	<p>SFMTA, in consultation with the Planning Department and the Port, to review and sign off on detailed plans regarding driveways to ensure design will sufficiently restrict movements at driveway to right-in, right-out.</p>	<p>Infrastructure developer’s/ garage operator's obligations deemed complete once construction of listed improvements are complete.</p>
<p>B. A “keep clear” zone shall be provided in front of the easternmost driveway on Mission Rock Street (i.e., closest to Bridgeview Street) to prevent westbound queues at the Third Street/Mission Rock traffic signal from blocking inbound access to the driveway. The Keep Clear pavement markings shall be placed in the westbound lane immediately in front of the easternmost driveway for the Block D2 parking garage.</p>	<p>Infrastructure developer and/or garage operator SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff.</p>	<p>Prior to the opening of the Block D2 garage.</p>	<p>SFMTA, in consultation with the Planning Department and the Port, to review and sign off on detailed plan regarding the easternmost driveway keep clear zone.</p>	<p>Infrastructure developer’s/ garage operator's obligations deemed complete once construction of listed improvements are complete.</p>
<p>C. The southbound left-turn lane at the Third Street/Mission Rock Street intersection shall be restriped to extend the length of the left-turn lane to 350 feet. Advance traffic signal detection equipment shall be installed at the end of the newly striped left-turn pocket to detect when queues fill up the left-turn pocket and extend north to the end of the pocket near the Third Street/Channel Street intersection, allowing additional green time to be allocated to the southbound left-turn movement at the Third Street/Mission Rock Street traffic signal.</p>	<p>Infrastructure developer and/or garage operator SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage</p>	<p>Prior to certificate of occupancy for Block D garage; sequencing and selection of interventions outlined within Item C shall be at the direction of the</p>	<p>SFMTA, in consultation with the Planning Department and the Port, to review and sign off on detailed plans regarding extension of the left-turn pocket on Third Street/Mission Rock Street.</p>	<p>Infrastructure developer’s/garage operator's obligations deemed complete once construction of listed improvements are complete.</p>

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	management staff, event staff.	SFMTA. In the case that the SFMTA identifies any of these intervention as technically challenging, infeasible, or undesirable because of resultant operational issues, other interventions must be selected.		
D. Wayfinding signs including Static and Variable Message Signs will be installed to provide directions to the parking garages and to provide traffic alerts, messages, and alternate driving routes for drivers traveling to the Block D2 aboveground garage, to destinations in the vicinity, or through the area. Four High Visibility Static Signs will be installed, three on the approaches to the Third Street/Mission Rock Street intersections (for southbound, eastbound and northbound directions) and one for northbound drivers on Terry A. Francois Boulevard, south of Mission Rock Street. One permanent Variable Message Sign shall be installed for southbound drivers on Third Street, between King Street and Berry Street.	Infrastructure developer and/or garage operator SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff.	Prior to certificate of occupancy for Block D garage.	SFMTA, in consultation with the Planning Department and the Port, to review and sign off on detailed plans regarding wayfinding signs including Static and Variable Message Signs.	Infrastructure developer's/ garage operator's obligations deemed complete once construction of listed improvements is complete.
E. The project sponsor shall enter into an Event Mitigation Agreement with the SFMTA that provides for Parking Control Officers (PCOs) to manage traffic within the project site adjacent to the proposed project's parking garages and on Exposition Street (between Third Street and the Shared Public Way) during all AT&T Park events and on-site events with 15,000 or more attendees.	Infrastructure developer and/or garage operator, SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff,	Enter into Event Mitigation Agreement prior opening of the Block D2 parking garage. Prior to commencement of construction on the site, and on-going	Infrastructure developer and/or garage operator to enter in Event Management Agreement with SFMTA, who should provide for implementation of all of these items, as well as closure of the westernmost driveway during AT&T events per Item A.	Considered complete upon Infrastructure developer and SFMTA entering into Event Mitigation Agreement.



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	event staff.	through the life of project.		
<p>F. The site’s transportation coordinator shall be a member of the Mission Bay Ballpark Transportation Coordination Committee and provide notification prior to the start of any on-site event that would overlap with an event at AT&amp;T Park or the Warriors arena.</p>	<p>Infrastructure developer and/or garage operator SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff.</p>	<p>Enter into Event Mitigation Agreement prior opening of the Block D2 parking garage. With commencement of construction, and on-going through life of the project.</p>	<p>Infrastructure developer and/or garage operator to enter into Event Management Agreement with SFMTA, who should provide for implementation of all of these items, as well as closure of the westernmost driveway during AT&amp;T events per Item A.</p>	<p>Upon infrastructure developer and SFMTA entering into Event Mitigation Agreement and ongoing during project operations.</p>
<p>G. Traffic destined for the proposed project’s parking garages will be monitored by the owner/operator during all AT&amp;T Park events and on-site events with 15,000 or more attendees, and periodically during weekday a.m. and p.m. peak hours, to ensure that garage access queues do not affect operations of the T Third transit line. Action will be taken by the Mission Rock Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff, and/or PCOs assigned to event traffic management to implement real-time traffic management strategies (i.e., alternative traffic routing, temporal parking pricing, enhanced garage driveway controls, etc.) to reduce vehicle garage access queues so they do not affect operations of the T Third line.</p>	<p>Infrastructure developer and/or garage operator SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff.</p>	<p>Enter into Event Mitigation Agreement prior opening of the Block D2 parking garage. With commencement of construction, and on-going through life of the project; the weekday (non-event) AM and PM peak-hour monitoring shall be conducted quarterly on a Tuesday, Wednesday, or Thursday of a</p>	<p>Infrastructure developer and/or garage operator to enter into Event Management Agreement with SFMTA, who should provide for implementation of all of these items, as well as closure of the westernmost driveway during AT&amp;T events per Item A.</p>	<p>Upon Infrastructure developer and SFMTA entering into Event Mitigation Agreement and ongoing during project operations.</p>

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<p>H. If the SFMTA Director, or his or her designee, receives information that a recurring queue that could affect the operation of the T Third line is imminent or present, SFMTA shall notify the property owner in writing. Upon request, the owner/operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than 7 days. The consultant shall prepare a monitoring report to be submitted to SFMTA for review. If SFMTA determines that a recurring queue does exist, the facility owner/operator shall have 45 days from the date of the written determination to abate the excessive recurring queue. Approaches to queue abatement could include but are not limited to: changing parking access and revenue collection system (PARCS) technology to process vehicles more rapidly, adjusting the layout of the garage’s ground floor to accommodate more queuing vehicles within the garage, implementing peak-period surge pricing to encourage garage access and egress outside of times with recurrent excessive queues; installing additional variable message signage further upstream from the site to direct drivers to garage access routes away from affected intersections; and/or closing, limiting or controlling Mission Rock Street access from Third Street during times with excessive recurrent queuing and redirecting garage-bound traffic to Terry A. Francois Boulevard.</p>	<p>Infrastructure developer and/or garage operator vertical, SFMTA, Planning Department, Transportation Coordinator, onsite transportation staff, parking garage management staff, event staff.</p>	<p>non-holiday week.                       As may be requested during operations, per written notification by SFMTA                      With commencement of operation of the Block D2 garage and on-going through the life of the project. If analysis is requested, the analysis shall be conducted during a period that is representative of standard traffic patterns, e.g. on week that does not contain a holiday, is not during winter break, or off-season, etc. The analysis period chosen by the infrastructure developer/garage operator and consultants must be approved by the SFMTA.</p>	<p>SFMTA.</p>	<p>Ongoing during project operations after opening of Block D2 garage.</p>

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<p><b>M-TR-9: Install Traffic Signals and Related Intersection Improvements at Unsignalized Intersections on Fourth Street at Mission Rock Street and Long Bridge Street.</b>                      Prior to issuance of approval of the third building site permit, but in no event later than the site permit for the Block D2 parking garage, the project sponsor shall provide funding to SFMTA, for a maximum amount of \$1 million for SFMTA to design and construct (1) a traffic signal at the intersection of Fourth Street/Long Bridge Street and (2) a traffic signal at the intersection of Fourth Street/Mission Rock Street. These improvements should be constructed by SFMTA prior to opening of the Block D2 parking garage.</p>	<p>Infrastructure developer, SFMTA.</p>	<p>Payment to SFMTA: Prior to issuance of approval of the third building site permit, but in no event later than the site permit for the Block D2 parking garage.                      Installation of traffic signals: Prior to opening of the Block D2 parking garage.</p>	<p>SFMTA.</p>	<p>Infrastructure developer's obligations deemed complete once payment is made. SFMTA's obligations deemed complete once traffic signals are constructed.</p>
<p><b>M-TR-10: Bicycle-Truck Interface at Pier 48.</b>                      The project shall construct a highly visible crossing treatment across the driveway as well as bollards and detectable warning pavers that satisfy ADA requirements at the Pier 48 driveway's beginning and end locations along the Blue Greenway path to warn cyclists and pedestrians of the upcoming driveway crossing.</p>	<p>Pier 48 developer.</p>	<p>Prior to occupancy of Pier 48.</p>	<p>Planning Department will monitor.</p>	<p>Considered complete when crossing treatment is constructed.</p>
<p>The project shall provide a traffic control staff at the junction of the Blue Greenway and the driveway to the Pier 48 valley during deliveries to manage bicycle and truck traffic. A flagger shall be provided to manage bicycle and pedestrian travel along the Blue Greenway at the Pier 48 valley driveway whenever trucks back into Pier 48.</p>	<p>Pier 48 developer.</p>	<p>During deliveries.</p>	<p>Pier 48 developer to document arrangement for traffic control staff to manage traffic during deliveries. Planning Department to review documentation.</p>	<p>Ongoing during deliveries.</p>

**MITIGATION MONITORING AND REPORTING PROGRAM FOR  
 SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT**

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<p><b>M-TR-11.1: Commercial Loading Supply – Monitor Loading Activity and Implement Additional Loading Management Strategies as Needed.</b></p> <p>After completion of the first phase of the proposed project and prior to approval of each subsequent phase, the project sponsor shall conduct a study of utilization of commercial loading spaces. The methodology for the study shall be reviewed and approved by the Planning Department prior to completion. If the result of the study indicates that fewer than 15 percent of the commercial loading spaces are available during the peak loading period, the project sponsor shall implement additional loading management strategies and/or provide additional or expanded off-street loading supply sufficient to meet the loading demand in subsequent phases of the project in either the garages or in off-street parking in individual buildings, consistent with the proposed project's design intent. Additional loading strategies could include (but are not limited to): expanding efforts to coordinate with parcel delivery companies to schedule deliveries to the site during hours outside the peak hour of loading, installing parcel lock boxes that allow parcel delivery personnel unsupervised access to enable off-hour deliveries, coordinating delivery services across buildings to enable the delivery of several buildings' packages to a single location, and/or encouraging deliveries to the retail and restaurant components of the projects to happen during early morning or late evening hours. The project sponsor may also address a shortfall by reserving parking spaces for smaller delivery vehicles such as autos or vans, which comprise approximately two-thirds of the vehicle types for freight delivery service, on the ground floor of the Block D2 garage during peak or appropriate business hours for small-vehicle deliveries and, in connection therewith, providing hand trucks, bicycles, or electric wheeled carts for distribution of packages to buildings throughout the site.</p> <p>If plans for individual buildings include a driveway to off-street loading or parking (maximum 10 off-street spaces) along a frontage that has a designated on-street loading zone, an equivalent amount or level of off-street loading space shall be provided to effectively replace the lost on-street loading area.</p>	<p>Infrastructure developer, vertical developer(s) or garage operators (as applicable).</p>	<p>Study completion: after completion of the first phase of the proposed project and prior to approval of each subsequent phase.</p> <p>If additional loading management strategies ongoing in subsequent phases are needed: after completion of each phase for which additional strategies are applicable.</p>	<p>Planning Department, in consultation with the SFMTA, will review and approve methodology of utilization study.</p> <p>Infrastructure developer, vertical developer(s), and garage operators (as applicable) will provide report to Planning Department on implementation of additional loading management strategies, if required.</p>	<p>Considered complete for each phase after Planning Department staff reviews and approves the study, in consultation with the SFMTA, and, if deemed necessary, the infrastructure developer, vertical developer(s), and garage operators (as applicable) incorporate a report of how it incorporated any additional management strategies for loading into each applicable phase.</p>



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<p><b>M-TR-11.2: Coordinate Deliveries and Tenant Moving Activities.</b>                      The project’s transportation coordinator and in-building concierges shall coordinate with building tenants and delivery services to minimize deliveries and moving activities during peak periods, and endeavor to spread deliveries across the full day and moving activities to time periods after regular working hours, thereby reducing activity during the peak hour for loading.                      Although many deliveries cannot be limited to specific hours, the transportation coordinator and in-building concierges shall work with tenants to find opportunities to consolidate deliveries and reduce the need for peak-period deliveries, wherever possible.</p>	<p>Project Transportation Coordinator and vertical developer(s).</p>	<p>Ongoing.</p>	<p>Planning Department will monitor.</p>	<p>On-going during project operations.</p>
<p><b>M-C-TR-4: Provide Fair-Share Contribution to Improve 10 Townsend Line Capacity Proposed Project.</b>                      Upon completion and occupancy of Phase 1 and upon completion and occupancy of each subsequent phase of the proposed project as defined in the Disposition and Development Agreement, the project sponsor shall fund a transit capacity study to be reviewed and approved by the SFMTA. The project sponsor shall obtain from SFMTA the current ridership on the 10 Townsend and conduct an assessment of the capacity utilization at the screenline’s Maximum Load Point (MLP) for weekday AM and PM peak hour conditions.                      If the capacity utilization exceeds 85 percent, a fair share payment shall be made to SFMTA by the project sponsor, calculated as further provided in a Transit Mitigation Agreement. Such payment shall be calculated in light of the project’s progress towards one or the other of the development scenario (i.e. High Commercial or High Residential) as reflected by all phases of the project that have been completed up to such date. The fair share contributions by phase differ by scenario because the number of transit riders varies due to different mixes of land use.                      If the capacity utilization based on SFMTA’s ridership data is less than 85 percent, then the project sponsor’s fair share payment for that phase shall be \$0 and the process will repeat at the next subsequent phase. Each subsequent fair share calculation shall take account of amounts paid for prior phases, to ensure that payments are not duplicative for the same transit rider impacts.</p>	<p>Infrastructure developer and/or vertical developer(s), Transportation Coordinator, and SFMTA.</p>	<p>Prior to issuance of certificate of occupancy of Phase 1 of the proposed project, enter into Transit Mitigation Agreement. Upon issuance of a certificate of occupancy for each phase of development as defined in the Development Agreement, SFMTA to provide ridership data and assess capacity utilization and, if capacity utilization exceeds 85 percent, the infrastructure developer/vertical developer(s) would pay fair share contribution fees as</p>	<p>Infrastructure developer and/or vertical developer(s) and Transportation Coordinator to obtain current ridership on the 10 Townsend from SFMTA and conduct an assessment of the capacity utilization associated with the project as described in the measure.                      If the capacity utilization of the 10 Townsend line at its maximum load point exceeds 85 percent as measured at the completion of any individual project phase, and the SFMTA has committed to implement M-C-TR-4, the infrastructure developers shall provide the fair share contribution subject to the limits stated in M-C-TR-3 to capital costs for SFMTA to implement one of the designated capacity enhancement measures.</p>	<p>Considered complete upon execution of Transit Mitigation Agreement for each phase of development, for which this measure is determined to be necessary.</p>

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<p>The project sponsor shall enter into a Transit Mitigation Agreement with the SFMTA under which the agreement shall provide for the project sponsor to make a fair share contribution to the cost of providing additional bus service or improving service on the 10 Townsend by paying a fee. The fair share contribution as documented in the Transportation Impact Study from the proposed project shall not exceed the following amounts, in total across all phases:</p> <ul style="list-style-type: none"> <li>a. \$391,179 for High Commercial</li> <li>b. \$324,595 for High Residential</li> </ul> <p>SFMTA may determine that other measures to increase capacity along the route would be more desirable than adding buses and may use the funds provided by the project sponsor to implement these other measures, which include but are not limited to the following measures:</p> <ol style="list-style-type: none"> <li>1. Convert to using higher-capacity vehicles on the 10 Townsend route. In this case, the project sponsor’s fair share contribution may be utilized to convert the route to articulated buses. Some bus stops along the route may not currently be configured to accommodate the longer articulated buses. Some bus zones could be extended by removing one or more parking spaces at locations where appropriate space is available.</li> <li>2. Instead of adding more buses to a congested route, it would be more desirable to increase travel speeds along the route which would allow for buses to move faster thus increasing efficiency and reliability. In this case, the project sponsor’s fair share contribution may be used to fund a study to identify appropriate and feasible improvements and/or implement a portion of the improvements that would increase travel speeds enough to increase capacity along the bus route. Such improvements could include transit only lanes, transit signal priority, and transit boarding improvements.</li> <li>3. Another option to increase capacity along the corridor is to add a new Muni service route in this area. If this option is selected, the project sponsor’s fair share contribution may fund the purchase of the new vehicles.</li> </ol>		<p>specified in this measure, which would be used by SFMTA to increase capacity.</p>		

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<b><i>Noise and Vibration Mitigation Measures</i></b>				
<p><b>M-NOI-1: Prepare and Implement a Construction Noise Control Plan to Reduce Construction Noise at Noise-Sensitive Land Uses.</b></p> <p>The project sponsor shall develop a noise control plan that requires the following:</p> <ul style="list-style-type: none"> <li>• Construction contractors shall specify noise-reducing construction practices that will be employed to reduce construction noise from construction activities. The measures specified by the project sponsor shall be reviewed and approved by the City prior to the issuance of building permits. Measures that can be used to limit noise include, but are not limited to, those listed below.                             <ul style="list-style-type: none"> <li>○ Locate construction equipment as far as feasible from noise-sensitive uses.</li> <li>○ Require that all construction equipment powered by gasoline or diesel engines have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.</li> <li>○ Idling of inactive construction equipment for prolonged periods shall be prohibited (i.e., more than 5 minutes).</li> <li>○ Prohibit gasoline or diesel engines from having unmuffled exhaust systems.</li> <li>○ Use noise-reducing enclosures around noise-generating equipment that has the potential to disturb nearby land uses.</li> <li>○ Ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) wherever feasible.</li> <li>○ Monitor the effectiveness of noise attenuation measures by taking noise measurements. A plan for noise monitoring shall be provided to the City for review prior to the commencement of each construction phase.</li> </ul> </li> </ul>	Infrastructure developer and/or vertical developer(s) (as applicable).	Prior to the issuance of building permits; implementation ongoing during construction.	Infrastructure developer or vertical developer(s) (as applicable) to submit the Construction Noise Control Plan to the Port’s Building Permit Group. <sup>4</sup> A single Noise Control Plan or multiple Noise Control Plans may be produced to address project phasing.	Considered complete upon submittal of the Construction Noise Control Plan to the Port’s Building Permit Group.

<sup>4</sup> The Port may designate another agency, such as the Planning Department, to carry out monitoring and reporting, and any reference to Port responsibilities includes such designated agencies.

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<ul style="list-style-type: none"> <li>• Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be “quiet” gasoline-powered compressors or electrically powered compressors, and electric rather than gasoline- or diesel-powered engines shall be used to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used; which could achieve a reduction of 5 dBA. Quieter equipment shall be used when feasible, such as drills rather than impact equipment.</li> <li>• Construction contractors shall be required to use “quiet” gasoline-powered compressors or electrically powered compressors and electric rather than gasoline- or diesel-powered forklifts for small lifting.</li> <li>• Stationary noise sources, such as temporary generators, shall be located as far from nearby receptors as possible; they shall be muffled and enclosed within temporary enclosures and shielded by barriers, which could reduce construction noise by as much as 5 dB, or other measures, to the extent feasible.</li> </ul>				
<ul style="list-style-type: none"> <li>• Prior to the issuance of the building permit, along with the submission of construction documents, the project sponsor shall submit to the Planning Department and Department of Building Inspection a list of measures for responding to and tracking complaints pertaining to construction noise. These measures shall include:                             <ul style="list-style-type: none"> <li>○ Identification of measures that will be implemented to control construction noise.</li> <li>○ A procedure and phone numbers for notifying the Department of Building Inspection, the Department of Public Health, or the Police Department of complaints (during regular construction hours and off hours).</li> <li>○ A sign posted onsite describing noise complaint procedures and a complaint hotline number that shall be answered at all times during construction.</li> <li>○ Designation of an onsite construction complaint and enforcement manager for the project.</li> </ul> </li> </ul>	Infrastructure developer and/or vertical developer(s) (as applicable).	Prior to the issuance of each building permit for duration of the project.	Infrastructure developer and/or vertical developer(s) (as applicable) to submit a list of measures for handling noise complaints to the Planning Department and Department of Building Inspection.	Considered complete upon review and approval of the complaint tracking measures by the Planning Department and Department of Building Inspection.



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<ul style="list-style-type: none"> <li>○ A plan for notification of neighboring residents and nonresidential building managers within 300 feet of the project construction area at least 30 days in advance of extreme noise-generating activities (defined as activities that generate noise levels of 90 dBA or greater) about the estimated duration of the activity and the associated control measures that will be implemented to reduce noise levels.</li> </ul>				
<p><b>Mitigation Measure M-NOI-2.1: Noise Control Plan for Special Outdoor Amplified Sound.</b></p> <p>To reduce potential impacts related to noise generated by events in project outdoor use areas, the project sponsor shall develop and implement a Noise Control Plan for operations at the proposed entertainment venues to reduce the potential for noise impacts from public address and/or amplified music. This Noise Control Plan shall contain the following elements:</p> <ul style="list-style-type: none"> <li>• The project sponsor shall comply with noise controls and restrictions in applicable entertainment permit requirements for outdoor concerts, and shall comply with the Port of San Francisco's "Good Neighbor" standards, unless the Port Commission makes a specific finding that a particular condition is unnecessary or infeasible.</li> <li>• Speaker systems shall be directed away from the nearest sensitive receptors to the degree feasible.</li> <li>• In order to limit or prevent sleep disturbance, events with amplified sound shall, to the extent reasonable and appropriate given the nature and context of the event, end at 10:00 p.m.</li> </ul>	Infrastructure developer and/or park manager, the Port, parks management entity and/or parks programming entity.	Prior to the issuance of event permit.	Infrastructure developer and/or park manager, the Port, parks management entity and/or parks programming entity to submit the Noise Control Plan to the Port.	Considered complete upon submission and approval of the Noise Control Plan by the Port, although the Noise Control Plan may be adjusted as needed.
<p><b>Mitigation Measure M-NOI-2.2: Stationary Equipment Noise Controls.</b></p> <p>Noise attenuation measures shall be incorporated into all stationary equipment (including HVAC equipment and emergency generators) installed on all buildings that include such stationary equipment as necessary to meet noise limits specified in Section 2909 of the Police Code. Interior noise limits shall be met under both existing and future noise conditions, accounting for foreseeable changes in noise conditions in the future (i.e., changes in on-site building configurations). Noise attenuation measures could include provision of sound enclosures/barriers, addition of roof parapets to block noise, increasing setback distances from sensitive receptors, provision of louvered vent openings, location of vent openings away from adjacent residential uses, and restriction of generator testing to the daytime hours.</p>	Vertical developer(s).	Prior to the issuance of certificate of occupancy for each building located on the site.	The Port's Building Permit Group to review construction plans regarding noise attenuation measures for stationary equipment.	Considered complete after submittal and approval of plans including noise attenuation measures by the Port's Building Permit Group.

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<p><b>Mitigation Measure M-NOI-2.3: Design of Future Noise-Sensitive Uses.</b>                      Prior to issuance of a building permit for a residential building on Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street, a noise study shall be conducted by a qualified acoustician to determine the need to incorporate noise attenuation measures into the building design in order to meet Title 24's interior noise limit for residential uses as well as the City's (Article 29, Section 2909(d)) 45-dBA (Ldn) interior noise limit for residential uses. This evaluation shall account for the projected increase in traffic noise as a result of project traffic along Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street and any new shielding benefits provided by surrounding buildings that exist at the time of development, future cumulative traffic noise increases on adjacent roadways, existing and planned stationary sources (i.e., emergency generators, HVAC, etc.), and future noise increases from all known cumulative projects located with direct line-of-sight to the project building.</p>	Vertical developer(s) and qualified acoustician.	Prior to the issuance of the building permit for vertical construction of any residential building on each parcel on Mission Rock Boulevard between Terry A. Francois Boulevard and Third Street.	Port staff to review the noise study. A single noise study or multiple noise studies may be produced to address project phasing.	Considered complete after submittal and approval of the noise study by the Port.
<p><b>Mitigation Measure M-NOI-2.4: Design of Future Noise-Generating Uses near Residential Uses.</b>                      Future land uses shall be designed to minimize the potential for sleep disturbance (defined as exceeding 45 dBA at residential interiors during the hours of 10 p.m. to 7 a.m.) at any future adjacent residential uses. Design approaches including, but not limited to, the following shall be incorporated into future development plans to minimize the potential for noise conflicts of future uses on the project site:</p> <ul style="list-style-type: none"> <li>• Design of Future Noise-Generating Uses. To reduce potential conflicts between sensitive receptors and new noise-generating land uses located adjacent to these receptors, exterior facilities such as loading areas/docks, trash enclosures, and surface parking lots shall be located on the sides of buildings facing away from existing or planned sensitive receptors (e.g., residences). If this is not feasible, these types of facilities shall be enclosed or equipped with appropriate noise shielding.</li> <li>• Design of Future Above-Ground Parking Structure on Block D2. For parking garage on Block D2, the sides of the parking structures facing adjacent or nearby existing or planned residential uses shall be designed to shield residential receptors from noise associated with parking cars.</li> </ul>	Garage developer (for Block D2 garage) and vertical developer(s) (for commercial/office buildings),	Prior to the issuance of a building permit for each commercial/office building, and prior to issuance of building permit for Block D2 parking garage.	The Port's Building Permit Group to review construction plans to confirm that future noise-generating land uses meet the requirements of this Measure M-NOI-2.4.	Considered complete after submittal and approval of construction plans by the Port's Building Permit Group.

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<p><b>M-NOI-3.1: Pile-Driving Control Measures – Annoyance.</b>                      To reduce impacts associated with pile driving, a set of site-specific vibration attenuation measures shall be implemented under the supervision of a qualified acoustical consultant during the project construction period. These attenuation measures shall include as feasible, in consideration of technical and structural requirements and conditions, the following control strategy, as well as any other effective strategies to the extent necessary to achieve a PPV vibration level at neighboring properties of less than the strongly perceptible level of 0.10 in/sec.                      The project sponsor shall require the construction contractor to limit pile-driving activity so that the PPV vibration level at neighboring uses is less than 0.10 in/sec to the extent it is practical and necessary, and, to the extent it is practical, implement “quiet” pile-driving technology, such as predrilling piles, using sonic pile drivers, or using more than one pile driver to shorten the total duration of pile driving.</p>	Infrastructure developer and/or vertical developer(s) (as applicable), qualified acoustical consultant.	Prior to issuance of building permit for each proposed building.	Infrastructure developer or vertical developer(s) (as applicable) to submit the Construction Noise Control Plan (detailed in M-NOI-1) to the Port’s Building Permit Group documenting site-specific vibration attenuation measures. A single Noise Control Plan or multiple Noise Control Plans may be produced to address project phasing.	Considered complete upon submittal and approval of the Construction Noise Control Plan (including vibration attenuation measures) to the Port’s Building Permit Group.
<p><b>M-NOI-3.2: Pile-Driving Vibration Control Measures – Damage.</b>                      To reduce the potential for damage to Pier 48, the following measures shall be implemented:</p> <ul style="list-style-type: none"> <li>• The Port of San Francisco shall be notified in writing prior to construction activity that construction may occur within 100 feet of the Pier 48 buildings.</li> <li>• The project sponsor shall retain a structural engineer, an architectural historian, and a licensed historical architect (hereafter referred to as the building evaluation team) to evaluate potentially affected buildings and determine their susceptibility to damage. The structural engineer shall evaluate the building structure. The architectural historian and licensed historical architect shall evaluate architectural elements. This building evaluation team shall then establish building-specific vibration thresholds that will (a) identify the level of vibration affected historic buildings will tolerate so as to preclude structural damage to the building of a nature that would result in material damage to any historic features of the buildings, and (b) identify the level of vibration at which cosmetic damage may begin to occur to buildings.</li> <li>• The building evaluation team shall inventory and document existing cracks in paint, plaster, concrete, and other building elements.</li> </ul>	Infrastructure developer and/or vertical developer(s) (as applicable), building evaluation team.	Prior to construction activities adjacent to Pier 48.	Infrastructure developer or vertical developer(s) (as applicable) to submit proposed building-specific vibration thresholds with input from structural engineer, architectural historian, and historic architect; an inventory of the condition of Pier 48; a vibration monitoring plan; and results of the inspection following construction activities to the Port’s Building Permit Group for review and approval.	Considered complete upon submittal and approval of documentation incorporating identified measures by the Port’s Building Permit Group.

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<ul style="list-style-type: none"> <li>• The building evaluation team shall develop a ground-borne vibration monitoring plan that will include monitoring vibration at the buildings of concern to determine if the established thresholds are exceeded.</li> <li>• The project sponsor shall retain a qualified acoustical consultant or engineering firm to implement the vibration monitoring plan at Pier 48. As part of the monitoring plan, the consultant shall conduct regular periodic inspections for cosmetic damage to each building within 160 feet of planned ground-disturbing activity on the project site.</li> <li>• Should vibration levels be observed in excess of the cosmetic damage threshold or cosmetic damage be observed below that level, the driving of piles within 100 feet of the Pier 48 structure (or within the impact distance determined by the study of building-specific vibration thresholds, per second bullet above, whichever distance is shorter) shall be halted until measures are implemented to prevent cosmetic damage to the extent feasible. These measures include use of alternative construction techniques, including, but not limited to, use of pre-drilled piles if soil conditions allow, use of smaller, lighter equipment, using vibratory hammers in place of impact hammers, and using pile cushioning or equipping the impact hammer with wooden cushion blocks to increase the period of time over which the energy from the driver is imparted to the pile. Should cosmetic damage to a building occur as a result of ground-disturbing activity on the site notwithstanding the use of alternative construction techniques, the building(s) shall be remediated to its pre-construction condition at the conclusion of ground-disturbing activity on the site.</li> <li>• Should vibration levels be observed that reach the threshold designed to protect historic buildings from material damage to historic features, pile-driving within impact distances of the Pier 48 building, as determined by the building evaluation team, shall be halted and a structural bracing program or other appropriate protective measures for the potentially affected buildings shall be designed by the building evaluation team and implemented by the project sponsor. The structural bracing program or other protective measures shall be designed to prevent damage to the potentially affected buildings that could materially impair their historic resource status consistent with CEQA Guidelines Section 15064.5(b)(2).</li> </ul>				



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<p>In addition, the structural bracing program shall be consistent with the proposed rehabilitation of the Pier 48 buildings and meet the Secretary of the Interior’s Standards for Rehabilitation.</p> <p>Following completion of construction, the project sponsor shall conduct a second inspection to inventory changes in existing cracks and new cracks or damage, if any, that occurred as a result of pile driving. If new damage is found, then the project sponsor shall promptly arrange to have the damage repaired in accordance with recommendations made by the building evaluation team.</p>				
<b><i>Air Quality Mitigation Measures</i></b>				
<p><b>Mitigation Measure M-AQ-1.1: Off-Road Construction Equipment Emissions Minimization.</b></p> <p>The project sponsor shall require all construction contractors to implement the following measures to reduce construction emissions.</p> <p>A. Engine Requirements</p> <ol style="list-style-type: none"> <li>1. All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall have engines that meet or exceed either USEPA or ARB Tier 4 Interim off-road emissions standards. Tier 4 final equipment, which may be largely available in the Bay Area, may be used to comply with this requirement (since Tier 4 final engines must comply with a stricter standard than Tier 4 interim engines, Tier 4 final engines meet Tier 4 interim standards and thus comply with this requirement).</li> <li>2. Where access to alternative sources of power are available, portable diesel engines shall be prohibited.</li> <li>3. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than 2 minutes at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.</li> </ol>	<p>Infrastructure developer and/or vertical developer(s) (as applicable).</p>	<p>Prepare and Implement Construction Emissions Minimization Plan: Prior to issuance of grading, excavation, or demolition permits and ongoing during demolition and construction activities.</p> <p>Quarterly Monitoring Reports: Quarterly after start of construction activities.</p> <p>Final Construction Report: After completion of construction activities but prior to receiving a final certificate of occupancy.</p>	<p>Infrastructure developer and/or vertical developer(s) (as applicable) or contractor to submit a Construction Emissions Minimization Plan to Port staff for review and approval.</p> <p>Quarterly reports to be submitted to Port staff documenting compliance with the plan for review and approval.</p> <p>Final Construction Report to be submitted to Port staff for review and approval.</p>	<p>Considered complete upon Port review and approval of Construction Emissions Minimization Plan, ongoing review and approval of quarterly reports, and review and approval of final construction report.</p>

**MITIGATION MONITORING AND REPORTING PROGRAM FOR  
 SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT**

**NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.**

<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>									
<p>4. The contractor shall instruct construction workers and equipment operators regarding the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturers' specifications.</p> <p>B. Waivers</p> <p>1. The Planning Department's Environmental Review Officer (ERO) or designee may waive the requirement for an alternative source of power from Subsection (A)(2) if an alternative source of power is limited or infeasible at the project site. If the ERO grants the waiver, the contractor must submit documentation that the equipment used for onsite power generation meets the requirements of Subsection (A)(1).</p> <p>2. The ERO may waive the equipment requirements of Subsection (A)(1) if use of a particular piece of off-road equipment with a Tier 4 interim-compliant engine is not feasible or reasonable, the equipment would not produce the desired emissions reductions because of the expected operating modes, installation of the equipment would create a safety hazard or impair visibility for the operator, or there is a compelling emergency that requires use of off-road equipment that is not Tier 4 interim-compliant. If seeking an exception, the project sponsor shall demonstrate to the ERO's satisfaction that the resulting construction emissions would not exceed the health risk thresholds of significance for cancer risk and PM2.5 concentrations with respect to sensitive receptors, as identified within the EIR under Impact AQ-4. If the ERO grants the waiver, the contractor must use the next-cleanest piece of available off-road equipment, according to the table below.</p> <p>3. Off-road Equipment Compliance Step-down Schedule</p> <table border="1" data-bbox="260 1182 930 1370"> <thead> <tr> <th>Compliance Alternative</th> <th>Engine Emissions Standard</th> <th>Emissions Control</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tier 3</td> <td>ARB Level 2 VDECS</td> </tr> <tr> <td>2</td> <td>Tier 2</td> <td>Alternative Fuel*</td> </tr> </tbody> </table> <p>VDECS = Verified Diesel Emissions Control Strategies                      * Alternative fuels are not a VDECS.</p>	Compliance Alternative	Engine Emissions Standard	Emissions Control	1	Tier 3	ARB Level 2 VDECS	2	Tier 2	Alternative Fuel*				
Compliance Alternative	Engine Emissions Standard	Emissions Control											
1	Tier 3	ARB Level 2 VDECS											
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<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR                      SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
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<p>4. How to use the table: If the ERO determines that the equipment requirements cannot be met, then the project sponsor must attempt to meet Compliance Alternative 1. If the ERO determines that the contractor cannot supply off-road equipment that meets Compliance Alternative 1, then the contractor must meet Compliance Alternative 2.</p> <p>C. Construction Emissions Minimization Plan                      Before starting onsite construction activities, the contractor shall submit a Construction Emissions Minimization Plan to the ERO for review and approval. The plan shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.</p> <p>1. The plan shall include estimates of the construction timeline by phase, with a description of each piece of off-road equipment required for every construction phase. The description may include, as such information is available, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed, the description may include technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered an alternative fuel if it can be demonstrated to the Planning Department or the City’s air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from the transport of fuel to the project site will not offset its NOx reduction potential.</p> <p>2. The project sponsor shall ensure that all applicable requirements of the plan have been incorporated into the contract specifications. The plan shall include a certification statement, stating that the contractor agrees to comply fully with the plan.</p> <p>3. The contractor shall make the plan available to the public for review onsite during working hours. The contractor shall post at the construction site a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the project at any time during working hours and explain how to request</p>				

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<p>to inspect the plan. The contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right of way.</p> <p>D. Monitoring                      After start of construction activities, the contractor shall submit quarterly reports to the ERO, documenting compliance with the plan. After completion of construction activities but prior to receiving a final certificate of occupancy, the project sponsor shall submit to the ERO a final report, summarizing construction activities, including the start and end dates, the duration of each construction phase, and the specific information required in the plan.</p>				
<p><b>Mitigation Measure M-AQ-1.2: On-Road Material Delivery and Haul Trucks Construction Emissions Minimization.</b></p> <p>The project sponsor shall require all construction contractors to implement the following measures to reduce construction haul truck emissions.</p> <p>A. Engine Requirements</p> <ol style="list-style-type: none"> <li>The project sponsor shall also ensure that all on-road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks, and concrete trucks) be model year 2010 or newer.</li> </ol> <p>B. Construction Emissions Minimization Plan</p> <p>As part of the <i>Construction Emissions Minimization Plan</i> identified above for Mitigation Measure M-AQ-1.1 Section C, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.</p> <ol style="list-style-type: none"> <li>The plan shall include estimates of the construction timeline by phase, with a description of how the on-road haul truck fleet required for every construction phase will comply with the engine requirements stated above. The plan shall also include expected fuel usage (or miles traveled) and hours of operation for the on-road haul truck fleet. For on-road trucks using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered as an alternative fuel if it can be demonstrated to the Planning Department or the City's air quality specialists that it is compatible with on-road truck engines and that emissions of ROG and NOx from transport of fuel to the project site will not offset its NOx reduction potential.</li> </ol>	<p>Infrastructure developer and/or vertical developer(s) (as applicable).</p>	<p>Prepare and Implement Construction Emissions Minimization Plan including engine requirements: Prior to issuance of a grading, excavation, or demolition permits and ongoing during demolition and construction activities.</p> <p>Quarterly Monitoring Reports: Quarterly after start of construction activities.</p> <p>Final Construction Report: After completion of construction</p>	<p>Infrastructure developer and/or vertical developer(s) (as applicable) or contractor to submit a Construction Emissions Minimization Plan including engine requirements to Port staff for review and approval.</p> <p>Quarterly reports to be submitted to Port staff documenting compliance with the plan for review and approval.</p> <p>Final Construction Report to be submitted to Port staff for review and approval.</p>	<p>Considered complete upon Port review and approval of Construction Emissions Minimization Plan, ongoing review and approval of quarterly reports, and review and approval of final construction report.</p>



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a. See Mitigation Measure M-AQ-1.1 Section C, Part 2. b. See Mitigation Measure M-AQ-1.1 Section C, Part 3. C. Monitoring See Mitigation Measure M-AQ-1.1 Section D.		activities but prior to receiving a final certificate of occupancy.		
<b>Mitigation Measure M-AQ-1.3: Low-VOC Architectural Coatings.</b> The project sponsor shall use low-VOC (i.e., ROG) coatings, beyond local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings), for at least 90 percent of all residential and nonresidential interior and exterior paints. This includes all architectural coatings applied during both construction and reapplications throughout the project’s operational lifetime. At least 90 percent of coatings applied must meet the “super-compliant” VOC standard of less than 10 grams of VOC per liter of paint. After start of construction activities, the contractor shall submit quarterly reports to the ERO documenting compliance with this measure by providing an inventory listing the VOC content of all coatings purchased and applied during construction activities. For the reapplication of coatings during the project’s operational lifetime, the Declaration of Covenants, Conditions, and Restrictions shall also contain a stipulation that low-VOC coatings must be used and a list of potential coatings shall be provided. A list of “super-compliant” coatings can be found on the South Coast Air Quality Management District’s website: <a href="http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings">http://www.aqmd.gov/home/regulations/compliance/architectural-coatings/super-compliant-coatings</a> .	Vertical developer(s).	At the start of construction activities and quarterly during construction and the project’s operational lifetime.	Vertical developer(s) to submit initial report and quarterly reports to the Port’s Building Permit Group documenting compliance for review and approval.	Ongoing throughout construction and operation.
<b>Mitigation Measure M-AQ-1.4: Best Available Control Technology for In-Water Construction Equipment.</b> The project sponsor shall require all construction contractors to implement the following measures to reduce emissions from in-water equipment. A. Engine Requirements <ol style="list-style-type: none"> <li>1. The project sponsor shall ensure that the construction barge shall have engines that meet or exceed USEPA marine engine Tier 3 emissions standards.</li> <li>2. The project sponsor shall also ensure that the construction work boat engine shall be model year 2005 or newer or meet NOx and PM emissions standards for that model year.</li> </ol>	Pier 48 developer.	Prepare and Implement Construction Emissions Minimization Plan including barge and work boat engine requirements: Prior to issuance of a grading, excavation, or demolition permits	Pier 48 developer or contractor to submit a Construction Emissions Minimization Plan including barge and work boat engine requirements to Port staff for review and approval. Quarterly reports to be submitted to Port staff documenting compliance with the plan for review and approval.	Considered complete upon Port review and approval of Construction Emissions Minimization Plan, ongoing review and approval of quarterly reports, and review and

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<p><b>B. Construction Emissions Minimization Plan</b>                      As part of the <i>Construction Emissions Minimization Plan</i> identified above for Mitigation Measure M-AQ-1.1 Section C, the contractor shall state, in reasonable detail, how the contractor shall meet the requirements of Section A.</p> <p>1. The plan shall include estimates of the construction timeline by phase, with a description of how each in-water equipment piece (e.g. barge engines, work boats) required for every construction phase will comply with the engine requirements stated above. The plan shall also include expected fuel usage and hours of operation for in-water equipment. For in-water equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. Renewable diesel shall be considered as an alternative fuel if it can be demonstrated to the Planning Department or the City’s air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from transport of fuel to the project site will not offset its NOx reduction potential.</p> <p>a. See Mitigation Measure M-AQ-1.1 Section C, Part 2.                      b. See Mitigation Measure M-AQ-1.1 Section C, Part 3.</p> <p><b>C. Monitoring</b>                      See Mitigation Measure M-AQ-1.1 Section D.</p>		<p>and ongoing during demolition and construction activities.</p> <p>Quarterly Monitoring Reports: Quarterly after start of construction activities.</p> <p>Final Construction Report: After completion of construction activities but prior to receiving a final certificate of occupancy.</p>	<p>Final Construction Report to be submitted to Port staff for review and approval.</p>	<p>approval of final construction report.</p>
<p><b>Mitigation Measure M-AQ-1.5: Emissions Offsets for Construction and Operational Ozone Precursor Emissions.</b>                      Prior to the estimated first year of exceedance, the project sponsor, with oversight of the Planning Department, shall elect to either:</p> <p>1. Directly implement a specific offset project or program to achieve emission reductions of up to 9.6 tons of ozone precursors to offset the combined emissions from construction and operations remaining above significance levels after implementation of identified mitigation measures. To qualify under this mitigation measure, the specific emissions reduction project must result in emissions reductions within the SFBAAB that are real, surplus, quantifiable, and enforceable and would not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement. Prior to implementation of the offset project, the project sponsor must obtain the</p>	<p>Infrastructure developer.</p>	<p>Implement a specific offset project or program: Prior to the estimated first year of exceedance and notify the Port within 6 months of completion of the offset project.</p> <p>Mitigation Fee: Installment for each development block to be paid</p>	<p>Implementation of specific offset project or program: Port approval of proposed offset program. Port verification of successful completion of offset program.</p> <p>Mitigation Fee: Infrastructure developer, BAAQMD, and Port to determine fee. BAAQMD and infrastructure developer to develop and implement MOU.</p>	<p>Implementation of specific offset project or program: Complete upon Port’s verification of successful completion of offset program.</p> <p>Mitigation Fee: Complete for each block upon payment of fee</p>

**MITIGATION MONITORING AND REPORTING PROGRAM FOR  
 SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT**

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<p>Planning Department’s approval of the proposed offset project by providing documentation of the estimated amount of emissions of ROG and NOx to be reduced (tons per year) within the SFBAAB from the emissions reduction project(s). The project sponsor shall notify the Planning Department within 6 months of completion of the offset project for Planning Department verification.</p> <p>2. Pay a mitigation offset fee to the BAAQMD Bay Area Clean Air Foundation (Foundation) in installments, as further described below, with each installment amount to be determined prior to the estimated first year of exceedance. This fee is intended to fund emissions reduction projects to achieve reductions totaling up to 10.5 tons of ozone precursors per year, the estimated maximum tonnage of operational and construction-related emissions offsets required to reduce emissions below significance levels after implementation of other identified mitigation measures. This total emissions offset amount was calculated by summing the maximum daily construction and operational emissions of ROG and NO<sub>x</sub> (pounds/day), multiplying by 260 work days per year for construction and 365 days per year for operation, and converting to tons. The amount represents the total estimated operational and construction-related ROG and NO<sub>x</sub> emissions offsets required.</p> <p>The fee shall be paid in up to 12 installments, each installment payable at the time of application for a site permit for each development block, representing the portion of the 10.5 tons of ozone precursors per year attributable to each building, as follows: (a) Blocks A, G, and K: 6.6% or 0.70 tons per each development block; (b) Pier 48: 18.6% or 1.95 tons; (c) Blocks B, C, and D: 9% or 0.95 tons per each development block; (d) Blocks E and F: 10.3% or 1.08 tons per each development block; and (e) Blocks H, I, and J: 4.6% or 0.49 tons per each development block. The mitigation offset fee, currently estimated at approximately \$18,262 per weighted ton, shall not exceed \$35,000 per weighted ton of ozone precursors plus an administrative fee of no more than 5 percent of the total offset to fund one or more emissions reduction projects within the SFBAAB. The not to exceed amount of \$35,000 will be adjusted to reflect annual California Consumer Price Index adjustments between 2017 and the estimated first year of exceedance. Documentation of payment shall be provided to the Planning Department.</p>		<p>with site permit application for each block, if no specific project or program is identified. Enter into MOU with BAAQMD Foundation and pay offset fee in installments for each development block.</p>		<p>installment outlined in the MOU.</p>

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<p>Unless directly implementing a specific offset project (or program) as described above, the project sponsor would enter into a Memorandum of Understanding (MOU) with the BAAQMD Foundation in connection with each installment payment described above. The MOU will include details regarding the funds to be paid, the administrative fee, and the timing of the emissions reductions project. Acceptance of this fee by the BAAQMD shall serve as acknowledgment and a commitment to (1) implement an emissions reduction project(s) within a time frame to be determined, based on the type of project(s) selected, after receipt of the mitigation fee to achieve the emissions reduction objectives specified above and (2) provide documentation to the Planning Department and the project sponsor describing the project(s) funded by the mitigation fee, including the amount of emissions of ROG and NOx reduced (tons per year) within the SFBAAB from the emissions reduction project(s). To qualify under this mitigation measure, the specific emissions reduction project must result in emission reductions within the SFBAAB that are real, surplus, quantifiable, and enforceable and would not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement.</p>				
<p><b>Mitigation Measure M-AQ-2.1: Best Available Control Technology for Operational Diesel Generators.</b></p> <p>The project sponsor shall ensure that the operational backup diesel generators comply with the following: (1) ARB Airborne Toxic Control Measure (ATCM) emissions standards for model year 2008 or newer engines; and (2) meet or exceed one of the following emission standards for particulate matter: (A) Tier 4 interim certified engine or (B) Tier 2 or Tier 3 certified engine that is equipped with an ARB Level 3 VDECS. A nonverified diesel emissions control strategy may be used if the filter has the same particulate matter reduction as the identical ARB-verified model and BAAQMD approves of its use. The project sponsor shall submit documentation of compliance with the BAAQMD NSR permitting process (Regulation 2, Rule 2, and Regulation 2, Rule 5) and the emissions standard requirement of this measure to the Planning Department for review and approval prior to issuance of a permit for a backup diesel generator from any City agency.</p>	Vertical developer(s).	Prior to issuance of permit for each backup diesel generator from BAAQMD.	Vertical developer(s) shall submit documentation of compliance to the Port for review and approval.	Considered complete upon review and approval of documentation by Port staff.



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<p><b>Mitigation Measure M-AQ-2.2: Reactive Organic Gases Emissions Reduction Measures.</b></p> <p>To reduce ROG emissions associated with the project, the project sponsor shall provide education for residential and commercial tenants to help reduce area source (e.g., architectural coatings, consumer products, and landscaping) emissions associated with residential and building operations. Prior to receipt of any building permit and every 5 years thereafter, the project sponsor shall work with the San Francisco Department of Environment to develop electronic correspondence, which will be distributed by email annually to tenants of the project that encourages the purchase of consumer products that are better for the environment and generate fewer VOC emissions. The correspondence shall encourage environmentally preferable purchasing and include contact information and links to SF APPROVED. While microbreweries do not typically implement emission control devices, to further reduce ROG (primarily ethanol) emissions associated with Pier 48 industrial operations, the project sponsor shall implement technologies to reduce ethanol emissions if available and practicable. Such measures could include wet scrubbers, ethanol recovery and capture (e.g., carbon absorption) or incineration. At the time when specific designs for the Pier 48 use are submitted to the City for approval, the project sponsor shall provide an analysis that quantifies the emissions, based on the specific design proposal, and evaluates ROG emission control technologies.</p>	Vertical developer(s).	Prior to issuance of any building permit and every 5 years thereafter.	Vertical developer(s) to work with the San Francisco Department of Environment to develop materials. San Francisco Department of the Environment to review and approve materials.	Considered complete after documentation provided to the Department of Environment of distribution of educational materials to residential and commercial tenants.
<p><b>Mitigation Measure M-AQ-2.3: Transportation Demand Management.</b></p> <p>The project sponsors shall prepare and implement a Transportation Demand Management (TDM) Plan. The TDM Plan shall have a goal of reducing estimated aggregate daily one-way vehicle trips by 20 percent compared to the aggregate daily one-way vehicle trips identified in the project’s travel demand memo, prepared by Advant Consulting, dated June 30, 2015 (“Travel Demand Memo”), and attached as Appendix 4-4 to the Draft EIR. The project sponsors shall be responsible for monitoring implementation of the TDM Plan and proposing adjustments to the TDM Plan if its goal is not being achieved, in accordance with the following provisions. The TDM Plan may include, but is not limited to, the types of measures summarized below by way of example. TDM Plan measures shall generally be consistent with the City’s adopted TDM Program Standards and the draft</p>	Transportation Coordinator and/or infrastructure developer to prepare the TDM Plan, which will be implemented by the Transportation Coordinator and will be binding on all development parcels.	Transportation Coordinator and/or Infrastructure developer to prepare TDM Plan and submit to Planning Department staff prior to approval of the project.	Transportation Coordinator to submit the TDM Plan to Planning Department staff for review and approval. Transportation Coordinator to submit monitoring report annually to Planning Department staff and implement TDM Plan Adjustments (if required).	The TDM Plan is considered complete upon approval by the Planning Department staff, in consultation with the SFMTA. Annual monitoring reports would be on-going during project buildout,

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<p>proposed TDM Plan prepared by Nelson Nygaard, dated September 2016, and attached as Appendix 4-5 to the Draft EIR. The TDM Plan describes the scope and applicability of candidate measures in detail, and may include, for example:</p> <ul style="list-style-type: none"> <li>• Active Transportation: Provision of streetscape improvements to encourage walking, secure bicycle parking, shower and locker facilities for cyclists, subsidized bike share memberships for project occupants, bicycle repair and maintenance services, and other bicycle-related services;</li> <li>• Car-Share: Provision of car-share parking spaces and subsidized memberships for project occupants;</li> <li>• Delivery: Provision of amenities and services to support delivery of goods to project occupants;</li> <li>• Family-Oriented Measures: Provision of on-site childcare and other amenities to support the use of sustainable transportation modes by families;</li> <li>• High-Occupancy Vehicles: Provision of carpooling/vanpooling incentives and shuttle bus service;</li> <li>• Information and Communications: Provision of multimodal wayfinding signage, transportation information displays, and tailored transportation marketing services;</li> <li>• Land Use: Provision of on-site affordable housing and healthy food retail services in underserved areas;</li> <li>• Parking: Provision of unbundled parking, short-term daily parking provision, parking cash out offers, and reduced off-street parking supply.</li> </ul> <p>The TDM Plan shall describe each measure, including the degree of implementation (e.g., how long will it be in place, how many tenants or visitors it will benefit, on which locations within the site it will be placed, etc.) and the population that each measure is intended to serve (e.g., residential tenants, retail visitors, employees of tenants, visitors). The TDM Plan shall commit to monitoring vehicle trips to and from the project site to determine the TDM Plan’s effectiveness, as required by TDM Plan Monitoring and Reporting outlined below.</p> <p>The TDM Plan shall have been approved by the Planning Department prior to site permit application for the first building and the TDM Plan shall be implemented as to each new building upon the issuance of the certificate of occupancy for that building.</p>				<p>or until five consecutive reporting periods show that the fully-built project has met its reduction goals, at which point reports would be submitted every three years.</p>

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<p>The TDM Plan shall remain a component of the proposed project to be implemented for the duration of the project.</p> <p><i>TDM Plan Monitoring and Reporting:</i> the Transportation Coordinator shall collect data, prepare monitoring reports and submit them to the Planning Department. To ensure the goal of reducing by 20 percent the aggregate daily one-way vehicle trips is reasonably achievable, the project sponsor shall monitor daily one-way vehicles trips for all buildings that have received a Certificate of Occupancy, and compare these vehicle trips to the aggregate daily one-way vehicle trips anticipated for the those buildings based on the trip generation rates contained within the proposed project Travel Demand Memo.</p> <ul style="list-style-type: none"> <li>• <b>Timing:</b> The Transportation Coordinator shall collect monitoring data and shall begin submitting monitoring reports to the Planning Department beginning 18 months after the completion and commencement of operation of the proposed garage on Block D. Thereafter, annual monitoring reports shall be submitted (referred to as “reporting periods”) until five consecutive reporting periods show that the project has met the reduction goal, at which point monitoring data shall be submitted to the Planning Department once every 3 years. The project sponsor shall complete each trip count and survey (see below for description) within 30 days following the end of the applicable reporting period. Each monitoring report shall be completed within 90 days following the applicable reporting period. The project sponsor shall modify the timing of monitoring reports such that a new monitoring report is submitted 12 months after adjustments are made to the TDM Plan in order to meet the reduction goal, as may be required under the “TDM Plan Adjustments” heading, below. In addition, the Planning Department may modify the timing of monitoring reports as needed to consolidate this requirement with other monitoring and/or reporting requirements for the project, such as annual reporting under the proposed project Development Agreement.</li> <li>• <b>Term:</b> The Project Sponsor shall monitor, submit monitoring reports, and make plan adjustments as provided below until the earlier of: (i) the expiration of the Development Agreement, or (ii) the reduction goal has been met for up to eight consecutive reporting periods as determined by the Planning Department. Notwithstanding the foregoing or any other provision of this mitigation measure, all obligations for monitoring,</li> </ul>				

**MITIGATION MONITORING AND REPORTING PROGRAM FOR  
 SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT**

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<p>reporting and for making adjustments to the TDM Plan shall terminate if the project sponsor has paid and/or made a commitment to pay the offset fee for any shortfall in the TDM Plan's meeting the reduction goal as provided below.</p> <ul style="list-style-type: none"> <li>• <b>Components:</b> The monitoring and reporting, including trip counts, surveys and travel demand information, shall include the following components or comparable alternative methodology and components, as approved, accepted or provided by Planning Department staff:                             <ul style="list-style-type: none"> <li>○ Trip Count and Intercept Survey: Provide a site-wide trip count and intercept survey of persons and vehicles arriving and leaving the project site, other than on AT&amp;T Park ballgame or other major event (e.g., concert or other event substantially occupying the capacity of AT&amp;T Park) days or hours, for no less than two days during the reporting period between 6:00 a.m. and 8:00 p.m. One day shall be a Tuesday, Wednesday, or Thursday during one week without federally recognized holidays, and another day shall be a Tuesday, Wednesday, or Thursday during another week without federally recognized holidays. The trip count and intercept survey shall be prepared by a qualified transportation or survey consultant, and the Planning Department shall approve the methodology prior to the Project Sponsors conducting the components of the trip count and intercept survey. The Planning Department anticipates it will have a standard trip count and intercept survey methodology developed and available to project sponsors at the time of data collection.</li> <li>○ Travel Demand Information: The above trip count and survey information shall be able to provide the travel demand analysis characteristics (work and non-work trip counts, origins and destinations of trips to/from the project site, and modal split information), as outlined in the Planning Department's <i>Transportation Impact Analysis Guidelines for Environmental Review</i>, October 2002, or subsequent updates in effect at the time of the survey.</li> <li>○ Documentation of Plan Implementation: The transportation coordinator shall work in conjunction with the Planning Department to develop a survey (online or paper) that can be reasonably completed by the transportation coordinator and/or Transportation</li> </ul> </li> </ul>				



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<p>Management Association (TMA) staff members to document implementation of TDM program elements and other basic information during the reporting period. The project sponsors shall include this survey in the monitoring report submitted to the Planning Department.</p> <ul style="list-style-type: none"> <li>○ Assistance and Confidentiality: The Planning Department will assist the transportation coordinator with questions regarding the components of the monitoring report and will assist the transportation coordinator in determining ways to protect the identity of individual survey responders.</li> </ul> <p><i>TDM Plan Adjustments.</i> The project sponsors shall adjust the TDM Plan according to the monitoring results if three consecutive reporting periods demonstrate that measures within the TDM Plan are not achieving the reduction goal. The TDM Plan adjustments shall be made in consultation with the Planning Department and may require refinements to existing measures (e.g., changes to subsidies, increased bicycle parking), inclusion of new measures (e.g., a new technology or project operational changes not inconsistent with any agreements with the Port), or removal of existing measures (e.g., measures that are ineffective or induce vehicle trips).<sup>5</sup> If three consecutive reporting periods' monitoring results demonstrate that measures within the TDM Plan are not achieving the reduction goal, the project sponsors shall propose TDM Plan adjustments to be incorporated in the TDM Plan within 270 days following the last reporting period. The project sponsors shall implement the TDM Plan adjustments until the results of three consecutive reporting periods demonstrate that the reduction goal is being achieved.</p> <p>If after implementing TDM Plan adjustments as described above, and the project sponsors have not met the reduction goal for up to eight consecutive reporting periods as determined by the Planning Department, the project sponsors may, at any time thereafter, elect to address the shortfall in meeting the TDM Plan reduction target by, in addition to paying the emission offset fees set forth in Mitigation Measure M-AQ-1.5, also paying an additional</p>				

<sup>5</sup> No parking-related restrictive measures on the project site shall by design or effect, restrict parking on the project site for patrons of AT&T ballpark games or events.

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offset fee in accordance with Mitigation Measure M-AQ-1.5, in the amount required to address, both the shortfall in reduction during the previously monitored years and the anticipated shortfall in the remaining expected years of project operations, the latter of which shall be based on the shortfall that occurred in the most recently monitored year. Calculations of emissions to be offset shall be based on the total amount of emissions anticipated to be reduced by achieving the 20 percent TDM goal adjusted for the actual percentage of aggregate daily one-way vehicle trip reduction achieved in the most recently monitored year.				
<b><i>Wind and Shadow Mitigation Measures</i></b>				
<p><b>M-WS-1: Assessment and Mitigation of Wind Hazards on a Building-by-Building Basis.</b></p> <p>1. Prior to or as part of the submittal package for the schematic design of a new building (Proposed Building), the Proposed Building developer shall submit to the Planning Department, for its review and approval, a scope of work and, following approval of the scope, a report from a Qualified Wind Consultant (QWC) that reviews the Proposed Building schematic design, absent landscaping.<sup>6</sup> "QWC" means a wind consultant retained by the Proposed Building(s) developer and approved by the Planning Department for preparation of the report. The EIR wind consultant for the proposed project and any other wind consultant on the City's then approved list or otherwise approved by the City will be considered a QWC.</p> <p>2. The QWC report shall evaluate whether the Proposed Building(s) would create a Significant Wind Impact. "Significant Wind Impact" means a substantial increase on a site-wide basis in the number of hours per year that the 26 mph wind hazard criterion is exceeded or, if baseline wind conditions are greater than 26 mph, a substantial increase in the area subjected to winds greater than 26 mph. This analysis shall focus on the entire project area that was studied in wind tunnel tests conducted for the EIR and not just the area immediately surrounding the Proposed Building(s).</p>	<p>Vertical developer(s) and qualified wind consultant.</p> <p>Vertical developer(s) to implement architectural or landscaping features, or a combination of such features, that have been demonstrated in wind tunnel to reduce the Proposed Building's wind hazards to a level no greater than those of either</p>	<p>Prior to or as part of the submittal package for the schematic design of a new building.</p>	<p>Vertical developer(s) to submit to the Planning Department and the Port, for their review and approval, a scope of work and, following the approval of the scope of work by Planning Department and Port staff, a report from a qualified wind consultant that determines building-specific wind conditions.</p>	<p>Considered complete upon approval of wind report by the Planning Department and Port.</p>

<sup>6</sup> The scope of work for this report shall use the same methodology and wind test point locations as the Wind Study prepared for this EIR.

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<p>3. The QWC shall consider the Proposed Building(s) in the context of the "Current Project," which, at any given time during construction of the Project, shall be defined as the building masses used in the Original Model (Wind Study Configuration B),<sup>7</sup> except as updated to reflect schematic design submittals for any previously approved building that has not yet commenced construction, and construction permit designs for on-site buildings that are under construction or have completed construction. This model shall be referred to as the "Current Project" and shall be updated over time as architectural design for each proposed project block/building is completed.</p> <p>4. The Proposed Building shall be tested in the wind tunnel as proposed, including any architectural features that can be shown on plans to mitigate wind effects.<sup>8</sup> Testing may not include any existing or proposed onsite landscaping. A separate test shall be conducted with existing and proposed onsite landscaping included, if required per Section 5, below. The accompanying report shall compare the wind tunnel results analyzing the Proposed Building in the context of the Current Project to the following two baselines: (1) the EIR baseline conditions for the project site (Wind Study Configuration A), and (2) Existing Plus Project (i.e., with Mission Rock proposed project) conditions used in the EIR (Wind Study Configuration B).</p> <p>5. No further analysis shall be required if the QWC concludes, and the Planning Department concurs, that the Proposed Building's schematic design, absent proposed onsite landscaping, would not create a Significant Wind Impact. If the QWC concludes that the Proposed Building's schematic design, absent proposed onsite and existing offsite landscaping, would create a Significant Wind Impact, as defined above, then a second wind tunnel test shall be conducted, taking into account proposed onsite landscaping and existing offsite landscaping. The intent of landscaping is</p>	<p>Wind Study Configuration A or Wind Study Configuration B.</p>			

<sup>7</sup> All references to the Wind Study refer to the Mission Rock EIR Pedestrian Wind Study Wind Tunnel Tests Report prepared by RWDI, final report, January 25, 2017, which can be found in Appendix 7-1 to this EIR.

<sup>8</sup> These could include features such as setbacks, wind baffles, randomized balconies, overhands, canopies, awnings and the like, provided they are consistent with the project's Design Controls and shown on schematic architectural plans for the Proposed Building.

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<p>to emulate the function and effect of a manmade wind screen. The following parameters have been determined to be the minimum requirements for landscaping features to be effective in controlling wind:<sup>9</sup></p> <ul style="list-style-type: none"> <li>• It is the combined effect of a cluster or group of landscaping features that is most effective, rather than the maturity of one tree.</li> <li>• Since a general rule is that vertical wind control features should be taller than the average height of a person, foliage from the ground up is most effective at a height of approximately 6 to 8 feet.</li> <li>• Since winds can easily flow under tree crowns, underplantings (e.g., shrub plantings at the base of a tree) should be included where trunks are bare for the first 5 to 6 feet of a tree measured from the ground.</li> <li>• Tree crowns with at least 60 percent cover (density of leafage) and even spread of branches are most effective.</li> </ul>				
<b><i>Biological Resources Mitigation Measures</i></b>				
<p><b>M-BI-3.1: Conduct Impact Hammer Pile Driving during Periods that Avoid Special-Status Fish Species’ Spawning and Migration Seasons.</b>                      In-water pile installation using impact hammers shall occur within the work window of June 1 to November 30, which has been established for dredging in San Francisco Bay to reduce potential effects on special-status fish species.</p>	Pier 48 developer.	During the construction work window of June 1 to November 30.	Pier 48 developer to submit detailed construction schedule to Port staff for review and approval.	Considered complete upon approval of construction schedule by Port staff.
<p><b>M-BI-3.2: Pile-Driving Noise Reduction for the Protection of Fish.</b>                      Prior to the start of pile driving in the Bay, the project sponsor shall develop an underwater noise monitoring and attenuation plan and obtain approval from NMFS. The NMFS-approved plan or any modifications shall be provided to the City Planning Department for determination of consistency with the requirements in this measure.                      The plan shall provide details regarding the estimated underwater sound levels expected, sound attenuation methods, methods used to monitor and verify sound levels during pile-driving activities, and management practices</p>	Pier 48 developer.	Prior to the start of pile driving in the Bay.	Pier 48 developer to prepare an underwater noise monitoring and attenuation plan and obtain approval from NMFS. The NMFS-approved plan or any modifications to be provided to the Port staff for determination of consistency with the requirements in this	Considered complete upon review and approval of the sound attenuation and monitoring plan by NMFS and consistency determination by

<sup>9</sup> RWDI, Landscaping, December 8, 2016.

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<p>to be taken to reduce pile-driving sound in the marine environment to below NMFS thresholds for injury to fish. The plan shall incorporate, but not be limited to, the following BMPs:</p> <ul style="list-style-type: none"> <li>• All steel pilings shall be installed with a vibratory pile driver to the deepest depth practicable. An impact pile driver may be used only where necessary, as determined by the contractor and/or project engineer, to complete installation of the steel pilings, in accordance with seismic safety or other engineering criteria.</li> <li>• The smallest pile driver and minimum force shall be used to complete the work necessary to meet NMFS requirements, as determined by the contractor and/or project engineer.</li> <li>• The hammer shall be cushioned using a 12-inch-thick wood block during all impact hammer pile-driving operations.</li> <li>• To reduce impacts to levels below injury thresholds, based on hydroacoustic monitoring and the amount of impact pile driving occurring on a particular day, a bubble curtain, wood block cushion, air barrier, or similar technology shall be employed during impact pile-driving activities.</li> <li>• A “soft start”<sup>10</sup> technique shall be employed upon initial pile-driving activities every day to allow fish an opportunity to vacate the area.</li> <li>• During impact pile driving, the contractor shall limit the number of strikes per day to the minimum necessary to complete the work, as determined by the contractor and/or project engineer.</li> <li>• No pile driving shall occur at night.</li> <li>• During impact pile driving, a qualified fish biologist shall monitor the project site for fish that exhibit signs of distress. If fish are observed exhibiting signs of injury or distress, work shall be halted by the biologist, and the cumulative SEL up to that point shall be examined. If the cumulative SEL is close to the threshold or exceeds the threshold, then pile-driving activities will cease until the next day.</li> </ul>			measure.	Port staff.

<sup>10</sup> Soft starts require an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period between subsequent three-strike sets. Soft starts for vibratory hammers will initiate noise at 15 seconds at reduced energy, followed by a 1-minute waiting period between subsequent starts. This process should continue for a period of no less than 20 minutes.



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<ul style="list-style-type: none"> <li>All pile-driving and pile-removal activity shall be monitored by a NMFS-approved biological monitor before and during all pile driving. The biological monitor shall maintain a monitoring log of daily pile-driving activities, any field sound measurements, fish sightings, and implementation of soft-start and shut-down requirements. A monitoring report shall be prepared for submission to NMFS and the City (submitted monthly and at the completion of all pile-driving/pile-removal activities).</li> </ul>				
<p><b>M-BI-3.3: Pile-Driving Noise Reduction for Protection of Marine Mammals.</b>                      Prior to the start of pile driving in the Bay, as part of the underwater noise monitoring and attenuation plan required by Mitigation Measure M-BI-3.2, the project sponsor shall provide details regarding the estimated underwater sound levels expected, not just from impact hammer pile driving that may affect fish but also from vibratory pile driving and removal because these sound levels may affect marine mammals. The plan shall also address sound attenuation methods, methods used to monitor and verify sound levels during pile-driving activities, and management practices to be taken to reduce pile-driving sound in the marine environment to below NMFS thresholds for injury to marine mammals. As part of implementation of the sound attenuation monitoring plan, the project sponsor shall take actions to reduce the effect of underwater noise transmission on marine mammals. These actions shall include, at a minimum:</p> <ul style="list-style-type: none"> <li>The establishment of initial safety zones, based on the estimated NMFS injury threshold contours for the different marine mammals (as shown in Table 4.L-8 and Table 4.L-9). The initial size of the safety zones may be modified, based on subsequent analysis of the anticipated noise levels and the actually proposed piles, equipment, and activity prior to construction but only with the approval of NMFS.</li> <li>Hydroacoustic monitoring, according to the NMFS-approved sound attenuation and monitoring plan, shall be completed during initial pile driving to verify projected isopleths for pile driving and removal. The plan shall require real-time hydroacoustic monitoring for a sufficient number of piles to determine and verify modeled noise isopleths. The safety zones established prior to construction may be modified, based on field measurements of noise levels from different pile-driving activities, if the field measurements indicate that different noise threshold contours than those estimated prior to construction are appropriate but only with approval of NMFS.</li> </ul>	Pier 48 developer.	Prior to the start of pile driving in the Bay.	Pier 48 developer to prepare an underwater noise monitoring and attenuation plan (including estimated underwater sound levels expected) and obtain approval from NMFS. The NMFS-approved plan or any modifications to be provided to Port staff for determination of consistency with the requirements in this measure.	Considered complete upon review and approval of the sound attenuation and monitoring plan by NMFS and consistency determination by Port staff.

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<ul style="list-style-type: none"> <li>Halting of work activities when a marine mammal enters a safety zone (specific to that species) and resumed only after the animal has not been observed within the safety zone for a minimum of 15 minutes.</li> <li>Use of a “soft start”<sup>11</sup> technique each day upon commencement of pile-driving activity, any time after ceasing pile-driving activity for more than 1 hour, and any time after shutdown due to marine mammal entry into a safety zone.</li> <li>Monitoring by an NMFS-approved biological monitor of all pile-driving and pile-removal activity before and during all pile driving/removal to inspect the work zone and adjacent Bay waters for marine mammals and implement the safety zone requirements described above. The biological monitor shall maintain a monitoring log of daily pile-driving/removal activities, any field sound measurements, marine mammal sightings, and implementation of soft-start, shut-down, and safety-zone requirements. A monitoring report shall be prepared for submission to the City and NMFS (submitted monthly and at the completion of all pile-driving/pile-removal activities).</li> </ul>				
<p><b>M-BI-5: Conduct Pre-Construction Surveys for Nesting Migratory Birds.</b>                      To facilitate compliance with state and federal laws (California Fish and Game Code and the MBTA) and prevent impacts on nesting migratory birds, the project sponsor shall avoid vegetation/structure removal, ground-disturbing activities, and elevated noise levels near suitable nesting habitat during the nesting season (February 1 through August 31) or conduct pre-construction surveys, as described below. Alternatively, the project sponsor may remove vegetation or structures that may support nesting birds outside of the breeding season such that no breeding habitat would be present should construction start in the normal breeding season.</p>	Infrastructure or vertical developer(s) (as applicable), qualified wildlife biologist (if necessary).	Infrastructure or vertical developer(s) (as applicable) to avoid vegetation and/or structure removal, ground-disturbing activities, and elevated noise levels near suitable nesting habitat	Avoid Removal during Nesting Season: contractor to provide detailed construction schedule to Port to confirm affected activities fall outside nesting season or removal of trees and/or structures occurs outside breeding season. Nesting Surveys: If necessary, wildlife biologist to complete a memorandum	Avoid Removal during Nesting Season: complete upon review and approval of construction schedule by Port staff. Nesting Surveys: Considered complete upon review and

<sup>11</sup> Soft starts require an initial set of three strikes from the impact hammer at 40 percent energy, followed by a 1-minute waiting period between subsequent three-strike sets. Soft starts for vibratory hammers will initiate noise at 15 seconds at reduced energy, followed by a 1-minute waiting period between subsequent starts. This process should continue for a period of no less than 15 minutes.

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<p>If it is not feasible to avoid the nesting season and suitable nesting areas remain on the project site, the project sponsor shall hire a qualified wildlife biologist with demonstrated nest-searching experience to conduct surveys for nesting birds, including raptors. The following list details the nesting bird survey requirements for this project.</p> <ul style="list-style-type: none"> <li>• One nesting bird assessment is required at the beginning of each year, at the start of the nesting bird season (February), to determine if suitable nesting habitat remains or has been reinstated (e.g., the project site is revegetated).</li> <li>• If suitable nesting habitat is present, one nesting survey shall be conducted between February and April, and one nesting survey shall be conducted between April and June.</li> <li>• Additional nesting surveys are required when construction work stops at a portion of the site where suitable nesting habitat remains for more than 15 days or if construction is phased in such a way that no disturbance has occurred in a portion of the project site.</li> <li>• If active nests are observed during construction when the wildlife biologist is not present, all work within 250 feet of the nest shall stop, and wildlife biologist shall be contacted immediately. All personnel shall move at least 250 feet away from the nest. To the extent feasible, after consulting with the wildlife biologist, construction equipment shall be shut down or moved 250 feet away from the nest.</li> </ul> <p>Nesting bird surveys shall be performed no earlier than 7 days prior to the commencement of ground-disturbing activities and vegetation removal (including clearing, grubbing, and staging). The area surveyed shall include all construction areas as well as areas within 250 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist.</p> <p>If the wildlife biologist finds any active nests (e.g., a nest with eggs, chicks, or young) during the survey, the biologist shall establish no-disturbance species-specific buffer zones for each nest, marked with high-visibility fencing, flagging, or pin flags. No construction activities shall be allowed within the buffer zones. The size of the buffer shall be based on the species' sensitivity to disturbance and planned work activities in the vicinity; typical buffer sizes are 250 feet for raptors and 50 feet for other birds. The buffer shall remain in effect until the chicks have fledged from the nest or the nest is no longer active, which will be verified by the biologist.</p>		<p>during the nesting season (February 1 through August 31), conduct pre-construction surveys (February through June), or remove vegetation and/or structures outside breeding season.</p>	<p>detailing the survey effort and results and submit the memorandum to the infrastructure developer or vertical developer (s) (as applicable) and Port staff within 7 days of survey completion. Port staff to review and approve report.</p>	<p>approval of nesting surveys by Port staff.</p>

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<p>If inactive nests are identified, the project sponsor or its contractor shall remove those nests from the structure/vegetation and install nest exclusion measures on structures (i.e., fine mesh netting, panels, or metal projectors) outside of the nesting season, if deemed necessary and suitable by the qualified wildlife biologist. All exclusionary devices shall be monitored and maintained throughout the breeding season to ensure that they are successful in preventing the birds from accessing the cavities or nest sites.</p> <p>After each survey and/or after nest-deterrence activities are completed, the wildlife biologist shall complete a memorandum detailing the survey effort and results and submit the memorandum to the project sponsor within 7 days of survey completion.</p>				
<b><i>Geology and Soils Mitigation Measures</i></b>				
<p><b>M-GE-5: Accidental discovery of paleontological resource.</b></p> <p>Given the potential for paleontological resources to be present at the project site at excavation depths within the Colma Formation, the following measures shall be undertaken to avoid any significant adverse effect from the proposed project on paleontological resources. Before the start of any drilling or pile-driving activities, the project sponsor shall retain a qualified paleontologist, as defined by the SVP, who is experienced in teaching nonspecialists. The qualified paleontologist shall train all construction personnel who are involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils that are likely to be seen during construction, and proper notification procedures should fossils be encountered. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who shall evaluate the significance.</p> <p>If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work near the find and notify the project sponsor and the San Francisco Planning Department. Construction work in the affected areas shall remain stopped or be diverted to allow recovery of fossil remains in a timely manner. The project sponsor shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with SVP guidelines. The recovery plan may include a field survey, construction monitoring, sampling and data recovery</p>	<p>Infrastructure developer and/or vertical developer(s) (as applicable), and qualified paleontologist.</p>	<p>Before the start of any drilling or pile-driving activities.</p>	<p>Infrastructure developer or vertical developer(s) (as applicable) to retain qualified paleontologist and notify Port staff. Port staff to approve selection of paleontologist. If necessary, paleontologist to prepare and submit a recovery plan for Port review and approval.</p>	<p>Considered complete once training is complete, once construction is complete, or once the Planning Department approves the recovery plan and the infrastructure developer or vertical developer(s) and qualified paleontologist implements the plan.</p>

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procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the San Francisco Planning Department to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered. The San Francisco Planning Department shall be responsible for ensuring that the monitor's recommendations regarding treatment and reporting are implemented.				
<b>IMPROVEMENT MEASURES FOR THE SEAWALL LOT 337 AND PIER 48 MIXED-USED PROJECT</b>				
<p><b>I-TR-1: Construction Management Plan.</b>  <u>Traffic Control Plan for Construction</u> – To reduce potential conflicts between construction activities and pedestrians, bicyclists, transit and autos during construction activities, the project sponsor should require construction contractor(s) to prepare a traffic control plan for major phases of construction (e.g. demolition and grading, construction, or renovation of individual buildings). The project sponsor and their construction contractor(s) should meet with relevant City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during major phases of construction. This includes coordinating project construction activities with nearby City construction projects, such as the Third Street Rehabilitation Project. For any work within the public right-of-way, the contractor would be required to comply with the San Francisco's Regulations for Working in San Francisco Streets, which establishes rules and permit requirements so that construction activities can be conducted safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. Additionally, restrict truck movements and deliveries to the maximum feasible extent during peak hours (generally 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., or other times, as determined by SFMTA and the TASC).</p> <p>In the event that the construction timeframes of the major phases and other development projects adjacent to the project site overlap, the project sponsor should coordinate with City agencies through the TASC and the adjacent developers to minimize the severity of any disruption to adjacent land uses and transportation facilities from overlapping construction transportation</p>	Infrastructure developer and/or developer(s) (as applicable) (s).	Construction Management Plan for Construction: Prior to the issuance of a grading, excavation, or building permit. Project Construction Updates: ongoing throughout construction activities.	Infrastructure developer and/or vertical developer(s) (as applicable) and construction contractor(s) to submit Traffic Control Plan for Construction to the Port and SFMTA for review and approval. Project construction update materials would be provided in the annual mitigation and monitoring plan.	Ongoing during project construction.



**MITIGATION MONITORING AND REPORTING PROGRAM FOR  
 SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT**

**NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.**

<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation Responsibility</b>	<b>Mitigation Schedule</b>	<b>Monitoring/Reporting Responsibility (Public Agency)</b>	<b>Monitoring Schedule</b>
<p>impacts. The project sponsor, in conjunction with the adjacent developer(s), should propose a construction traffic control plan that includes measures to reduce potential construction traffic conflicts, such as coordinated material drop-offs, collective worker parking and transit to job site and other measures.</p> <p><u>Reduce Single-Occupant Vehicle Mode Share for Construction Workers</u> – To minimize parking demand and vehicle trips associated with construction workers, the project sponsor should require the construction contractor to include in the Traffic Control Plan for Construction methods to encourage walking, bicycling, carpooling, and transit access to the project construction sites by construction workers in the coordinated plan.</p> <p><u>Project Construction Updates for Adjacent Residents and Businesses</u> – To minimize construction impacts on access for nearby residences, institutions, and businesses, the project sponsor should provide nearby residences and adjacent businesses with regularly updated information regarding construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures via a newsletter and/or website.</p>				
<p><b>I-TR-7: Garage Access – Pedestrian Design Features.</b>                      During the final design process for the parking facilities and the pedestrian realm of adjacent streets, improvements should be designed for the safe interface of vehicles and pedestrians at parking facility driveways. This design shall include adequate sight distance, signing, striping, warning devices, and lighting.</p>	Garage developer.	During the final design process for the parking facilities and the pedestrian realm of adjacent streets.	Garage developer to design parking facilities and pedestrian realm for the safe interface of vehicles and pedestrians. SFMTA, in consultation with the Planning Department to review and approve plans.	Considered complete once SFMTA and Planning Department signs off on final plans.
<p><b>I-TR-10: Garage Access – Bicycle-Vehicle Design Features.</b>                      During the final design process for Long Bridge Street, adequate sight distance should be provided through a combination of signing, striping, and lighting improvements, which should be designed for the safe interface of vehicles and cyclists at the two Block D2 parking facility driveways.</p>	Garage developer.	During final design process for Long Bridge Street.	Garage developer to design Long Bridge Street with adequate sight distance. SFMTA to review and approve plans.	Considered complete once SFMTA signs off on final plans.

<b>MITIGATION MONITORING AND REPORTING PROGRAM FOR                      SEAWALL LOT 337 AND PIER 48 MIXED-USE PROJECT</b>				
<b>NOTE: Each mitigation measure in this document applies to the proposed project and all variants, unless noted otherwise.</b>				
<b>MEASURES ADOPTED AS CONDITIONS OF APPROVAL</b>	<b>Implementation                      Responsibility</b>	<b>Mitigation                      Schedule</b>	<b>Monitoring/Reporting                      Responsibility (Public                      Agency)</b>	<b>Monitoring                      Schedule</b>
<b>I-TR-12: Strategies to Enhance Transportation Conditions During Large Events.</b> The project's Transportation Coordinator should participate as a member of the Mission Bay Ballpark Transportation Coordination Committee and provide at least 1-month notification prior to the start of any large event that would overlap with an event at AT&T Park.	Project Transportation Coordinator.	Ongoing.	Transportation Coordinator to provide at least 1-month notification to Port, Planning Department, and SFMTA prior to the start of any large event that would overlap with an event at AT&T Park.	On-going during project operations.