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Sherie George
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

**Subject: Alcatraz Embarkation Facility – Pier 31-1/2 Circulation Study
(2017-000188ENV) – Final**

This letter report presents a study of transportation-related effects and impacts of the proposed Alcatraz Embarkation Facility and Visitors Center Expansion ("Proposed Project") located at Pier 31-½ on the Embarcadero in San Francisco.

Multiple factors led to a decision to enhance and expand the Alcatraz embarkation facilities. According to the Park Service, the public areas are entirely outdoors and the site has a temporary visual character that is inappropriate for a National Park. Additionally, visitor demand is expected to grow in line with a general growth in tourism in San Francisco, and while the current facility could accommodate this growth, the Proposed Project would provide a more comfortable experience for visitors.

This letter presents a description and assessment of existing transportation conditions at the project site including the travel patterns of site visitors and National Park Service (NPS) employees. This is followed by an assessment of travel demand due to the Proposed Project expansion. Then, proposed pick-up/drop-off loading facilities and other transportation-related elements of the Proposed Project are assessed for potential impacts. The report culminates in a set of recommended improvements.

PROJECT DESCRIPTION

PIER 31 ½

Alcatraz Island, a National Historic Landmark, is part of and managed by the Golden Gate National Recreation Area (GGNRA), a National Park Service (NPS or Park Service) unit that includes numerous park facilities within the San Francisco Bay Area, including Fort Mason, Fort Baker, Crissy Field,



Ocean Beach, and the Presidio, among other sites (**Figure 1**). As shown in **Figure 2**, Pier 31 ½ is located along the northern end of the Embarcadero, within Port of San Francisco (Port) jurisdiction. Ferry service from Pier 31 ½ and on-site concessions are currently operated by Alcatraz Cruises, LLC, through a contract with the Park Service. The site features a portable ticket booth, several exhibits, and parking small parking area of approximately 15 spaces for NPS operations located on the southeastern portion of the marginal wharf. The majority of the functions at the embarkation site are located on the wharf, except for a restroom facility and limited operational space located in the Pier 33 shed northwest of the main entrance. The Pier 33 bulkhead building is occupied by the privately operated Alcatraz Café and Grill. The Pier 31 bulkhead building located southeast of the main entrance is vacant. There is currently one float to accommodate two berths at the existing site.

Visitors enter Pier 31 ½ from the Embarcadero between the bulkhead buildings. Visitors use the ticket booth, circulate through several small interpretive exhibits, and enter the covered queuing area, which has space for visitors to stand. A pre-boarding area adjacent to the gangway offers seating for those with disabilities. Visitors are guided down the gangway and onto the ferry. The Alcatraz ticket booth is open 8:00 AM -7:00 PM daily (on weekdays and weekends) and ferries run approximately every 30 minutes from 8:45 AM to 9:30 PM in the summer months.

Under the Proposed Project, the Park Service seeks to enter into a long-term agreement with the Port for the development and operation of an improved ferry embarkation site at Pier 31½ to support Alcatraz Island and GGNRA visitors. The Port agreement would require that the Park Service, through its concessioner, renovate the wharf, bulkhead buildings at Pier 31 and Pier 33, and portions of the shed buildings at Pier 31 and Pier 33. Renovations would provide a combination of indoor and outdoor spaces that serve to welcome, orient, and provide basic services for visitors.

The Proposed Project also includes constructing other administrative and operational spaces in the Plaza, the wharf front, and Pier 31 and Pier 33 Buildings, including new boarding ramps and floats to support the berthing of up to three ferries at a time. These improvements would establish an identifiable and well-functioning facility that would provide a quality welcome and support program for visitors. The Park Service also seeks to establish limited ferry service between Pier 31½ and the existing Fort Baker pier, as well as provide interpretive cruises around the Bay. Trips to Fort Baker would be limited to two per day and occur on weekends only.

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LEGEND	 Golden Gate National Recreation Area and Muir Woods	 Other Public Lands	 Unincorporated Lands
	 San Francisco Maritime National Historic Park	 City Limits	

Figure 1
Golden Gate Recreational Area Vicinity Map





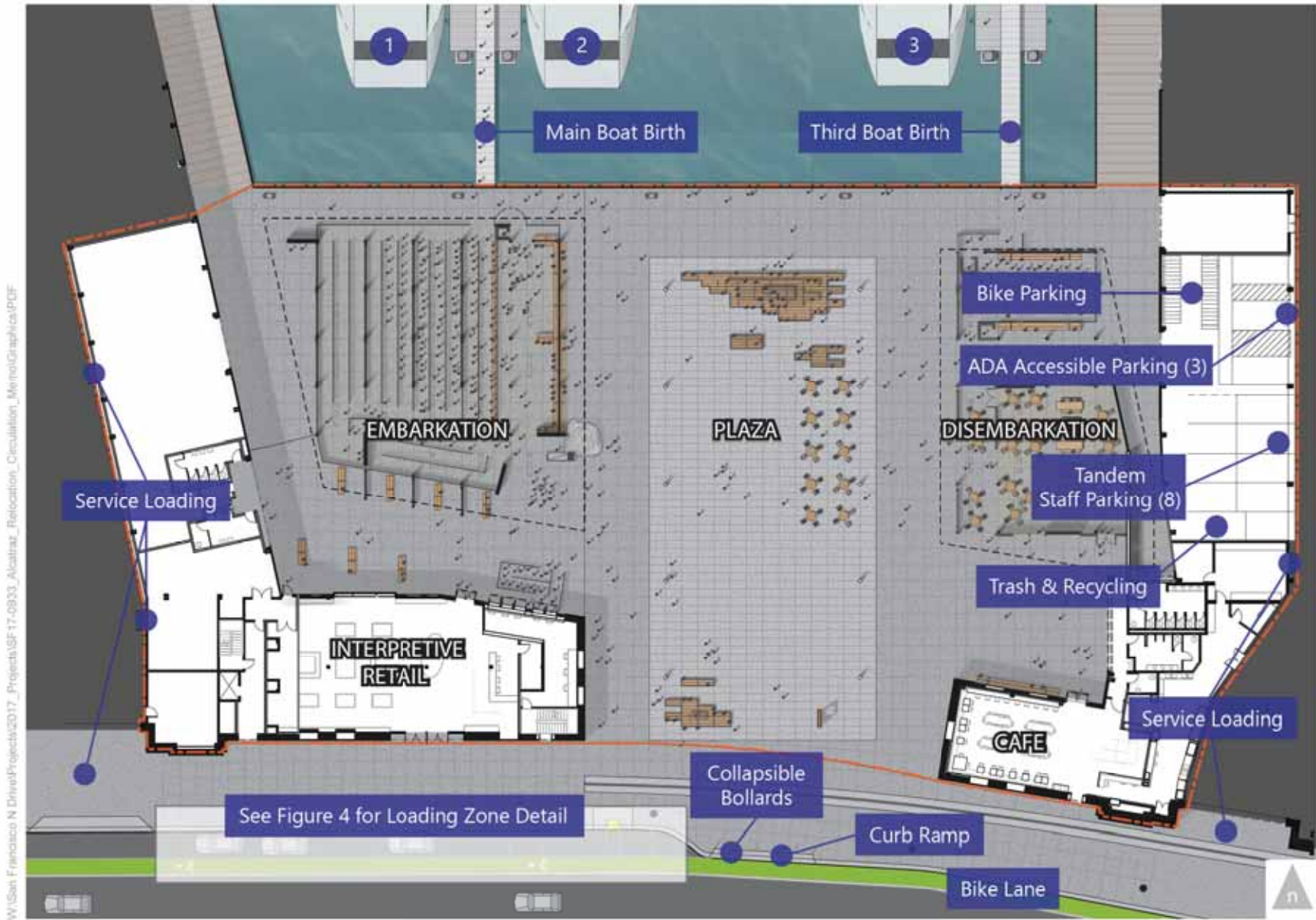
Figure 2
Project Study Area





Figure 3 shows the site plan and program plan for the new Pier 31 ½ Embarkation Site. The Proposed Project would reuse the historic Pier 31 and Pier 33 bulkhead buildings on the Embarcadero, portions of the sheds at Pier 31 and Pier 33, and all the outdoor space between Piers 31 and 33 for embarkation services. The Park Service would remove the existing canopy and construct two new concrete canopies on the wharf adjacent to the pier sheds to protect and organize visitor queuing and boat operations. The existing single dock and gangway would be relocated and replaced with two parallel floating docks (to accommodate three berths) and gangways accessed from the existing wharf. New ticket windows will be added to the north façade of the Pier 33 bulkhead building and the interior of the building will be renovated to include educational retail relating to Alcatraz and the GGNRA, storage, restrooms, office space, and a ticketing area. The Pier 31 bulkhead building will be renovated to include a café, space for food preparation, storage, and restrooms.

Site transportation access and arrival options would be largely consistent with those of existing conditions, with a few key modifications. There are two existing bicycle racks, each accommodating approximately 20 bicycles. These racks and a small staff parking area currently located on the south side of the marginal wharf would be relocated inside the Pier 31 shed building. The current staff parking area accommodates approximately 15 parked cars although no parking stall lines are provided. The Project proposes to provide eight tandem parking stalls as well as three ADA-designated parking stalls in the interior of the Pier 31 shed building. The ADA parking stalls would be compliant with Federal Accessibility Standards (FAS).



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Figure 3
Pier 31 1/2 Site Plan



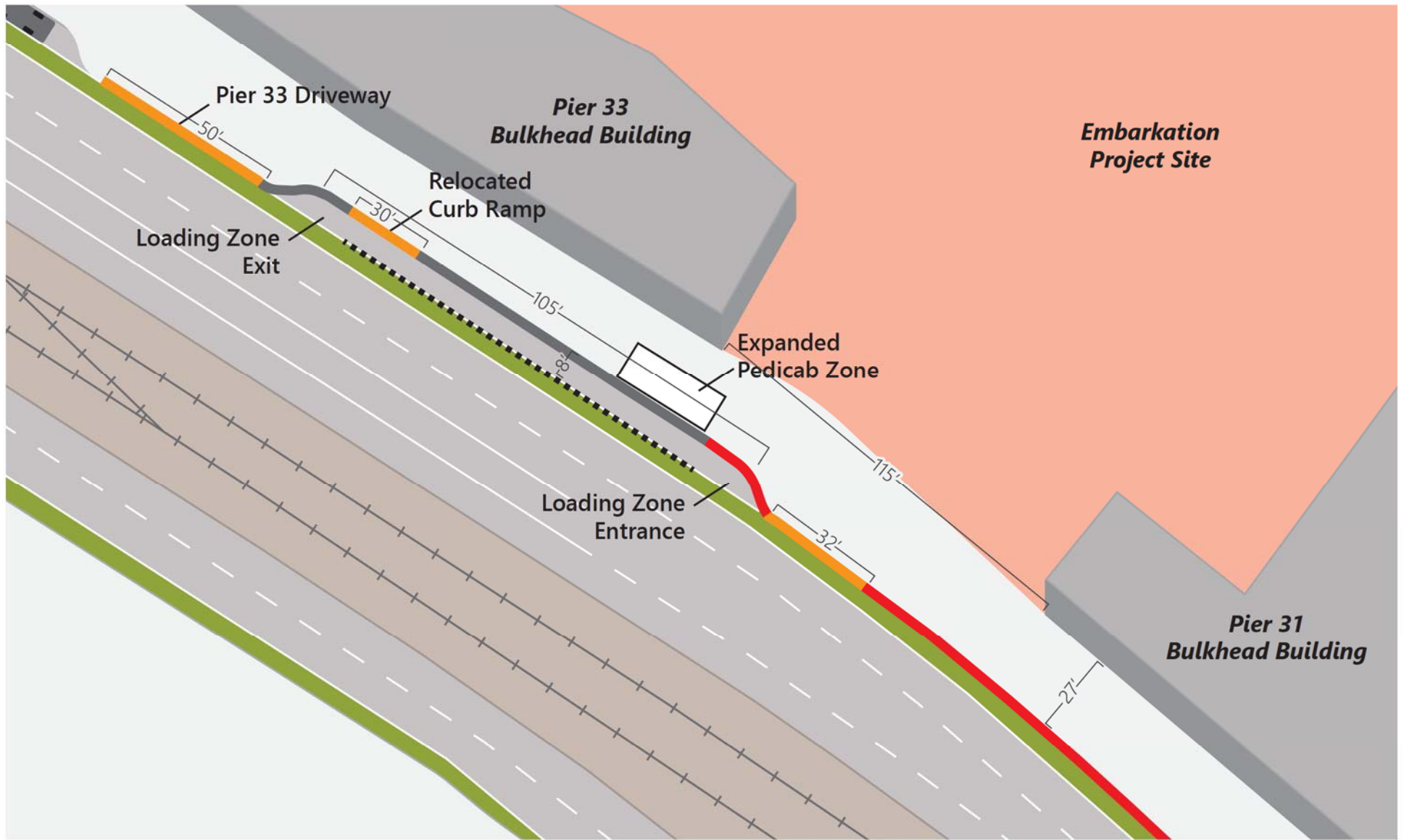
A new FAS-compliant 155-foot vehicle loading zone would be developed along the Embarcadero between the site entrance and the Pier 33 driveway. The loading zone will be separated from the roadway and bike lane by flexible bollards and would provide 110 feet of usable curb space, accommodating a queue of five to six vehicles. As shown in Photo 1 **below**, a similar design is used on the Embarcadero in front of the Exploratorium. There is only one entrance and exit to the loading zone. **Figure 4** provides a conceptual diagram of the proposed loading zone, which would remove five standard and one ADA parking space from the curbside. The three new ADA spaces provided in the Pier 31 Bulkhead Building would serve ADA visitor needs at the Embarkation site and this curbside ADA space would be relocated to the north between the Pier 33 driveway and the Bay Street intersection.¹

The existing FAS-compliant drop-off zone for tour buses and persons with disabilities, measuring approximately 45 feet in length, would remain north on the Embarcadero, adjacent to the Pier 35 bulkhead building. Commercial loading would continue to occur inside the Pier 33 and Pier 31 bulkhead buildings with no changes proposed to the existing bulkhead driveways or curb cuts.



Photo 1: Reference loading zone at the Exploratorium.

¹ Per 2010 ADA Standards, this meets the required number of minimum spaces (1 ADA space per 1-25 total spaces) as well as location requirements, which state that ADA spaces be located with the shortest possible parking distance to the building or site. In this case the new ADA spaces are even closer than the old single ADA space since the three new spaces are located on the project site itself.



- Project Site
- Proposed Passenger Loading Zone
- Curb Ramp
- No Parking
- Bike Lane
- Flexible Bollards

NOT TO SCALE



Figure 4
Loading Zone Concept Plan



Visitors on foot would still enter this site from the Embarcadero, between the two bulkhead buildings. However, because the staff parking would be removed from the marginal wharf under the Proposed Project, the entry, measuring approximately 115 feet, would encompass the full space between the buildings. Additional pedestrian access would be provided through the interior of the Pier 33 bulkhead buildings. The current project driveway, measuring approximately 32 feet, will be closed to vehicles, with the exception of emergency vehicles and after-hours fuel trucks; these exceptions would be permitted through the installation of collapsible bollards along the current driveway.

Construction is expected to occur in phases, beginning in 2019 and concluding in 2021. The full project description and accompanying figures are included in **Appendix A**.



FORT BAKER

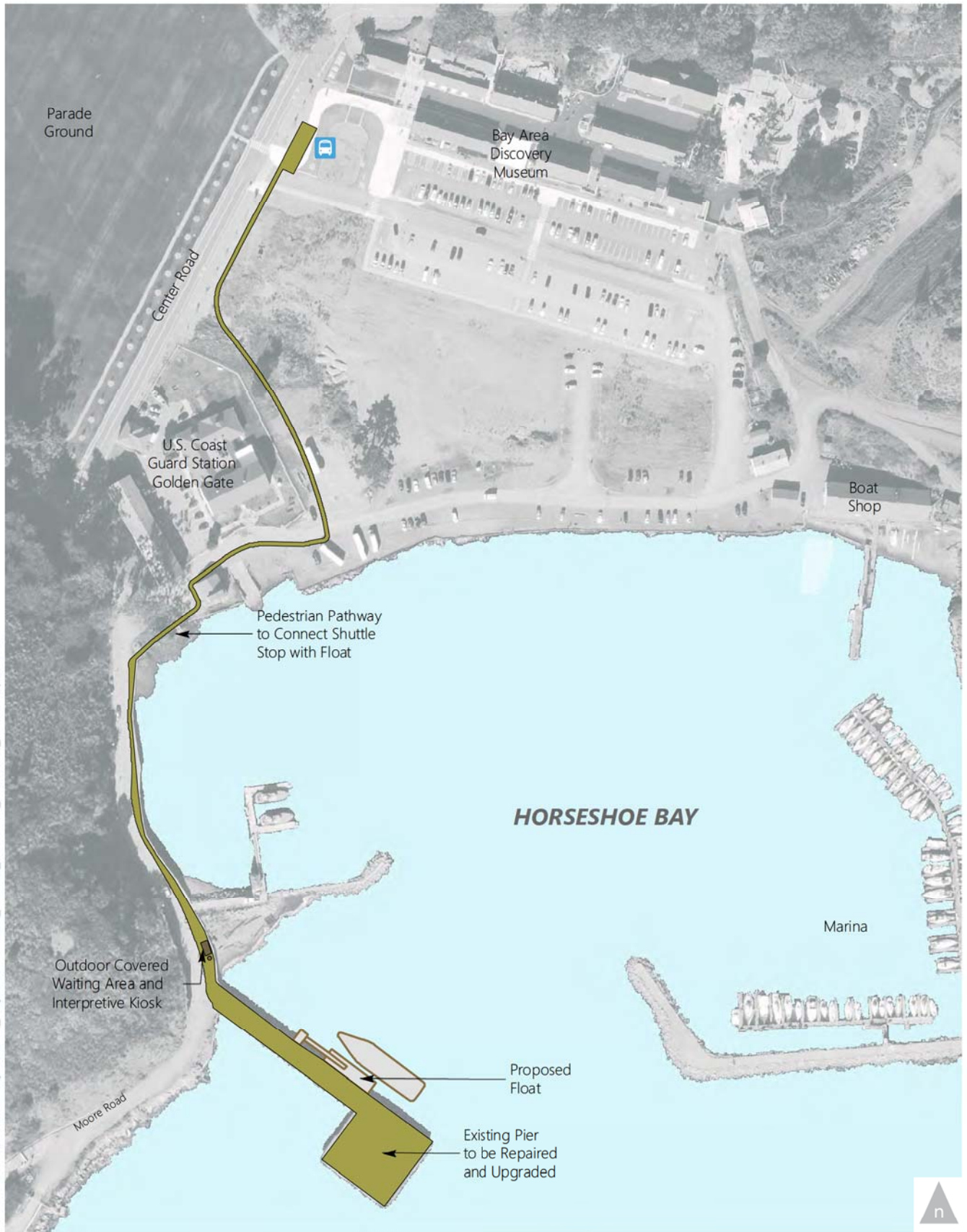
Figure 5 shows the concept plan for the proposed improvements at Fort Baker. The construction necessary to establish ferry service at Fort Baker would primarily involve upgrades to the existing concrete pier, which was constructed for military purposes in the late 1930s. The pier, an extension of Moore Road, is located at the mouth of Horseshoe Bay at the southern tip of the Fort Baker site. In addition to structural upgrades, water and lighting utilities would be extended and rerouted to the pier. Finally, a new pedestrian pathway would be constructed to connect Cavallo Point Lodge and the Bay Area Discovery Museum with the pier. The proposed path would require updating existing pedestrian infrastructure on the pier and the path between Cavallo Point Lodge and the Discovery Museum, as well as constructing an entirely new path, measuring approximately one-quarter mile, between the Discovery Museum and pier. These upgrades would include adding ADA-compliant ramps to the Murray Circle sidewalk where it intersects the access road between Murray Circle and McReynolds Road just north of East Road.

It is anticipated that roughly 40,000 visitors per year would travel to Fort Baker from Pier 31½ under the Proposed Project. This estimate is based on ferry service that would be limited to two trips per day and occur only on weekends; a variety of operational and physical constraints, including limited existing parking at Fort Baker; existing congestion in and around Sausalito; and the fact that Fort Baker, as a destination by itself, is unlikely to draw enough visitors to justify regular service. No new parking would be provided at the site to accommodate ferry passengers. There would also be no ticket sales at Fort Baker, and no shuttle service would be provided to serve ferry passengers.

Cars would still be able to access Moore Road, which connects Center Road with the pier, and the existing parking near the pier would not be removed. There would be no alterations to parking anywhere at Fort Baker. Ferry operations would utilize a small portion of the pier on weekends, the majority of which would remain open for recreational uses including fishing and sightseeing.

Construction is anticipated to begin at Fort Baker in 2023. See full description in **Appendix A**.

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LEGEND

- Outdoor Program Area
- Outdoor Covered Program Area
- b Shuttle Stop [Existing]

Figure 5
Fort Baker Concept Plan





RELATIONSHIP TO PRIOR STUDIES

The Park Service conducted extensive environmental analysis for this project as part of the National Environmental Policy Act. Specifically, the results of this analysis were documented in the Alcatraz Ferry Embarkation Final Environmental Impact Statement ("EIS"), available on-line at <https://parkplanning.nps.gov/projectHome.cfm?projectId=41352>. A Record of Decision was issued in early 2017. As part of that analysis, a detailed examination was performed of the existing conditions surrounding the project site as well as the potential near- and long-term environmental effects of the Proposed Project. The assessment of potential transportation impacts was conducted in a manner similar to the procedures specified by the City of San Francisco for environmental review. However, the assessment was performed several years ago. Therefore, the discussion in this letter report generally summarizes the analysis provided in the EIS, but also includes the results of some more recent "spot checks" to confirm that the existing conditions data summarized in the EIS is still relevant in 2017. The Transportation Impact Study conducted for the EIS is included as an appendix to this letter report (see **Appendix D**).

EXISTING CONDITIONS

Existing conditions were assessed through a combination of information presented in the Alcatraz Ferry Embarkation EIS, more recent site visits and data collection, information available online, and knowledge of the study area. Conditions were assessed at both Pier 31 ½ and Fort Baker.

PIER 31 ½

This section describes existing transportation conditions at Pier 31 ½ and for approximately one-quarter mile surrounding Pier 31 ½.

Existing Roadway Network

As shown in **Figure 2**, the project site sits on the eastern side of The Embarcadero, bounded by Pier 31 to the south, Pier 33 to the north, and the San Francisco Bay shoreline to the east. The Embarcadero adjacent to the project site consists of three northbound and two southbound travel lanes, one historic Muni streetcar line in each direction, both northbound and southbound class II bikes lanes, a standard sidewalk on the southbound side, and a multi-use promenade on the



northbound side. Muni operates in the center median in separated muni-only lanes. South of the project site, starting at Lombard Street and continuing south until King Street, the Embarcadero is part of the Vision Zero High Injury Network.

The project site opens onto the multi-use promenade, which runs the length of The Embarcadero from Fisherman's Wharf to the AT&T Ballpark. Pedestrians may cross to the Promenade either north of the site at the Bay Street and Embarcadero intersection or south of the site at the Sansome Street/Chestnut Street and Embarcadero intersection. In addition to providing pedestrian crossings, these are the two closest vehicle intersections to the project site. On-street parking is typically not allowed along either side of the Embarcadero, but there are a few stretches where wider road width allows for parking spaces. On Embarcadero northbound, on-street parking is permitted on the curb fronting Pier 33 and Pier 35, and on Embarcadero southbound, parking is permitted from mid-block, opposite Pier 31, south to the Sansome Street/Chestnut Street intersection.

Bay Street is a two-way, east-west arterial that connects the site to the North Beach, Russian Hill, and Marina Districts. Extending west from Embarcadero to Van Ness Avenue, Bay Street is part of the Vision Zero High Injury Network. There are no bicycle facilities or Muni stops, but sidewalks are provided on both sides of the street. On-street parking is permitted along most of Bay Street.

Chestnut Street and Sansome Street form a "K" intersection with The Embarcadero. Chestnut is a one-way, two-lane street, which directs traffic east, away from The Embarcadero to a dead-end, two blocks away. Sansome is also a one-way, two-lane street, which directs traffic north towards the Embarcadero from the Financial District. Neither Chestnut Street nor Sansome Street has bicycle facilities and neither street is part of the High Injury Network. Sansome Street supports bus stops for the 82X – Levi Express and multiple Golden Gate Transit routes. Chestnut Street has no transit facilities. Although closer to the Bay Street intersection, the project site is within reasonable walking distance from either intersection.

Roadway connectivity to San Francisco's interior is limited along this stretch of The Embarcadero given the topographical barrier created by Telegraph Hill a few blocks southwest of the site. This barrier means that most visitors will travel to the site from either the north or the south, with Bay Street serving as the prominent east-west access option.

Employees and select shuttle companies are permitted to either park or pick-up/drop-off in the on-site staff parking area, but all other visitors arriving by car must park at an off-site location and walk to the site.



Traffic Circulation and Site Access

The 2013 EIS included a thorough discussion of traffic circulation around the project site. To assess the applicability of the EIS results to conditions today, vehicle turning movement counts and field observations of traffic conditions at the intersections of Embarcadero/Bay Street and Embarcadero/Sansome Street/Chestnut Street around the project site were conducted in June and July of 2017. Turning movement counts, conducted during the AM and PM peak periods on Thursday, June 22, 2017, are presented in **Appendix B**. Although traffic counts are not typically collected in the summer months, the study area contains a number tourist-oriented uses and, given that tourism tends to be higher in the summer, this could offset the decrease in vehicle volumes typically experienced during summer months. The turning movement counts showed that vehicle volumes have not substantially changed in the area since they were collected for the 2013 EIS, and that the results of the EIS are still applicable today.

The findings from the EIS showed that, in general, intersection operations performed well with relatively little congestion in the area of the project site, with the exception of two nearby intersections. The intersection of Embarcadero/Kearny Street/North Point Street performed at LOS F during the PM and weekend peak hours, and the intersection of Sansome Street/Broadway performed at LOS E during the AM peak hour.²

Site access observations were conducted on Tuesday, June 27, 2017, during the mid-day (11:00 AM–1:00 PM) and PM (4:00 PM–6:00 PM) periods. Vehicular site access is provided by the curb cut directly fronting the project site. Vehicle access/egress volume is low with approximately two vehicles per hour accessing the site during the mid-day observation period and approximately three vehicles per hour accessing the site during the PM peak period. Vehicular access to the project site is controlled by a hanging chain barrier, which is removed by a staff member to allow vehicle access. Vehicles turning into and out of the project site are required to wait for a break in pedestrian activity before traversing the sidewalk. No conflicts between vehicles and pedestrians were observed.

Existing queues were also observed and are detailed below.

² LOS results are provided for informational purposes only. VMT information is provided elsewhere per revised CEQA Guidelines pursuant to Senate Bill 743, which uses the Vehicle Miles Traveled (VMT) metric instead of automobile delay to evaluate the transportation impacts of projects.



AM Roadway Observations

AM peak period field observations reflect a general trend of peak-direction volumes headed toward downtown San Francisco, specifically on eastbound Bay Street to southbound Embarcadero. Queues are most substantial on southbound Embarcadero at Sansome Street/Chestnut Street, though queues generally clear at every green cycle.

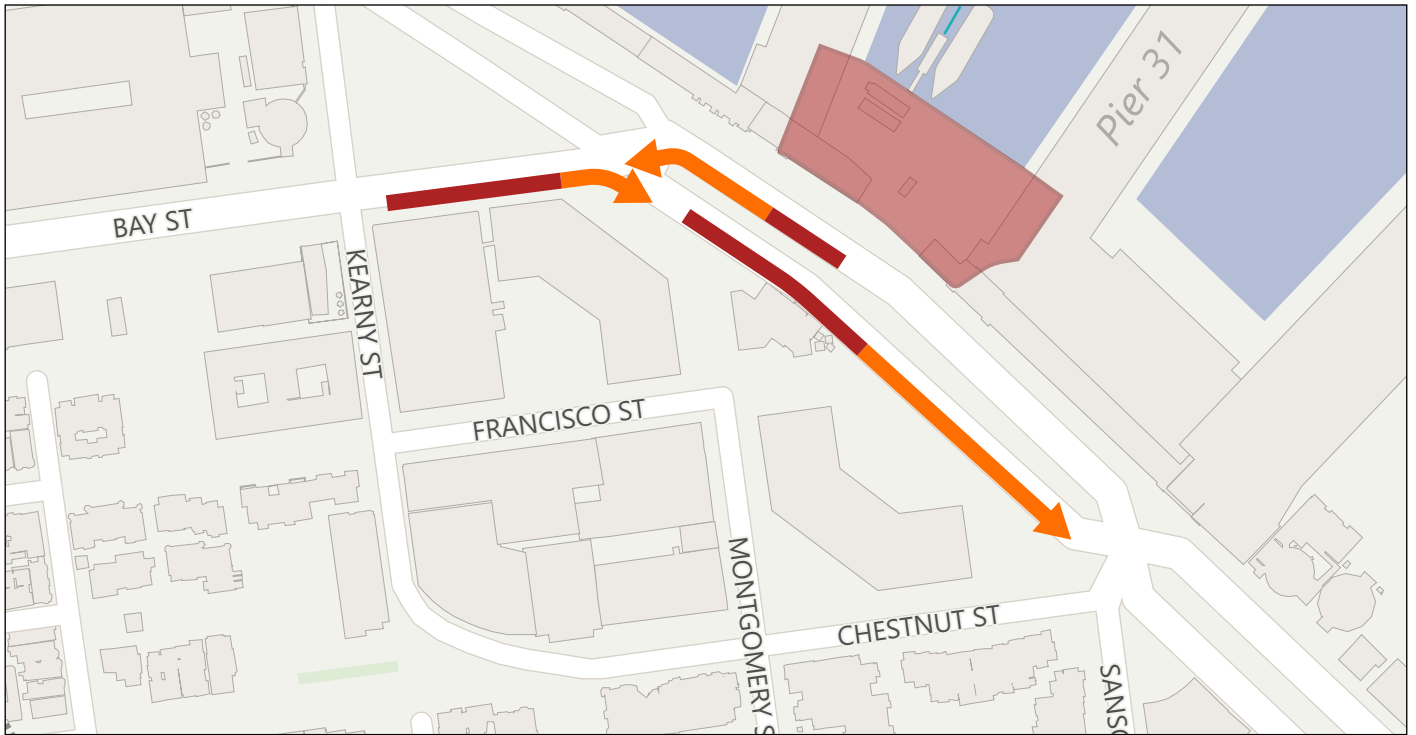
Vehicle traffic generally flows heavier in the southbound than northbound direction on The Embarcadero. Bay Street is an important access point to The Embarcadero for vehicles coming from the North Beach, Russian Hill, Marina, and Presidio districts, as well as for visitors traveling across the Golden Gate Bridge from Marin County. Intersection counts from June 22, 2017, presented in **Appendix B**, show approximately 930 Peak Hour turns from Bay Street onto Embarcadero southbound and approximately 610 Peak Hour turns from Embarcadero northbound onto Bay Street westbound. Right turns from Bay Street onto Embarcadero are provided two turning lanes and are the highest volume turning movement at this intersection in the AM peak hour. These observations are consistent with commute patterns for drivers from the North Beach, Russian Hill, and Marina neighborhoods and Marin County to access jobs in the Financial District. Bay Street to Embarcadero right turns combine with through traffic on Embarcadero southbound to produce a Peak Hour volume of approximately 1,270 on Embarcadero southbound at the Chestnut/Sansome intersection. Just over 95 percent of vehicles move onto Chestnut via either a left turn from Embarcadero northbound or a left-turn from Sansome northbound; less than five percent make a right from Embarcadero southbound. Finally, 22 vehicles were recorded making a u-turn from Embarcadero southbound to Embarcadero Northbound during the AM Period, which suggests a destination somewhere between Pier 31 and 35, and a potential visitor to the project site. No queues were observed and this u-turn movement did not create potentially hazardous traffic conditions.

A visual representation of observed AM queues is provided in **Figure 6**. Aside from Embarcadero southbound, queues did not form at the Sansome/Chestnut intersection. The Embarcadero southbound queue, which averaged 450 feet and maxed out at 750 feet, cleared almost every cycle. Two queues regularly formed at the Bay Street intersection for the northbound Embarcadero left-turn and for the right turn from Bay onto Embarcadero southbound. The average queue for the Embarcadero northbound left-turn (onto Bay) measured 150 feet and maxed out at 250 feet. The average right-turn queue on Bay measured just 50 feet, but maxed out at almost 280 feet. The queues turning right off of Bay typically formed when a pedestrian was present or a driver was

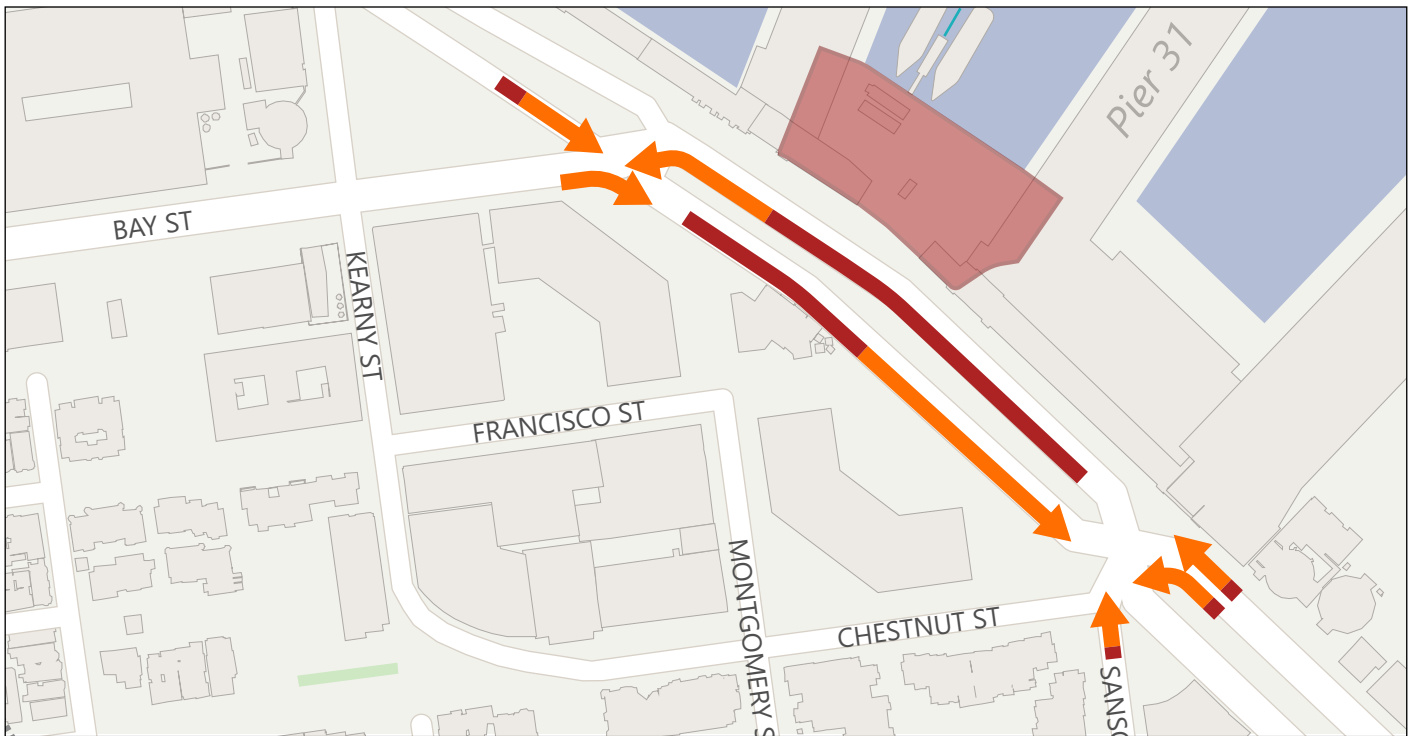


reluctant to turn right on red. Right-turn queues did not create potentially hazardous conditions for pedestrians, cyclists, or other vehicles and all queues at the Bay Street intersection cleared every green cycle.

AM Peak Period Queues



PM Peak Period Queues






-  Visitor Indoor/Outdoor Program Area
-  Average Queue
-  Maximum Queue



Figure 6
AM and PM Vehicle Queues



PM Roadway Observations

PM peak period field observations reflect a general trend of peak-direction volumes headed northbound, away from downtown San Francisco, specifically on northbound Embarcadero to westbound Bay Street. Queues are most substantial at the northbound left movement on Embarcadero at Bay Street, and routinely did not clear at every green cycle. The queue was observed to spill back to the upstream intersection in one instance, but it seemed to be an isolated incident as it did not occur again during observations. Although queues were long and persistent, they did not create potentially hazardous conditions to other vehicles or modes of transportation.

Compared with the AM peak hour, traffic flows are reversed on Bay Street, with more traffic flowing west (mostly left turns off Embarcadero northbound) than east. Volumes are higher northbound on Sansome, but lower on Chestnut than in the AM. Again, 22 u-turns were recorded from Embarcadero southbound to Embarcadero northbound during the PM Peak Hour. There is a dedicated u-turn lane and signal to accommodate these volumes and these volumes did not create potentially hazardous conditions.

Although still minimal, queues were more common for all turning movements in the PM period. Observed PM queues are illustrated in **Figure 6**. Average queues of about 50 feet formed for the Embarcadero northbound through and left-turn lanes, as well as the Sansome northbound through/left-turn lane. Embarcadero southbound at the Sansome/Chestnut intersection formed an average queue of about 450 feet with a max queue length of 750 feet. This queue and all the queues at the Sansome/Chestnut intersection cleared almost every cycle. At the Bay Street intersection, small queues formed for Bay Street right-turns and Embarcadero southbound though traffic. The northbound left movement at Embarcadero/Bay Street is comprised of two left-turn lanes. This movement presented a queuing challenge, routinely queuing 1-3 vehicles past the available inner left-turn pocket. This left-turn spillback did not conflict with through vehicles since the outer left-turn pocket effectively spans the entire block back to Sansome/Chestnut, with ample capacity for queue storage. This queue did not present potentially hazardous conditions to pedestrians, bicycles, or other vehicles; the queue never extended into a crosswalk and because the streetcars runs in the median, there are no potential transit conflicts. The average queue was only 250 feet, but, as mentioned, extended back in one instance to the Sansome/Chestnut intersection.



Transit Network

Transit services near the project site are shown in **Figure 7**. Primary public transit access to the project site is provided by San Francisco Municipal Railway (“Muni”) bus and streetcar services. The Historic F Market/Wharf and E Embarcadero streetcars operate in their own right-of-way in the median on The Embarcadero, following signals that are timed with north- and southbound traffic. Muni bus lines with service near the site include 82X Levi Express, 8/8X Bayshore Express, 39 Coit Tower and 47 Van Ness. Various ferry service providers operate out of Pier 41 about one-quarter mile north on The Embarcadero. Ferries from Pier 41 run to the SF Ferry Building, Alameda, and Oakland during the mid-day on weekdays and all day on the weekends. Additionally, the San Francisco Ferry Building, the primary ferry terminal in the city, is located one mile south, on The Embarcadero. **Table 1** lists the destinations, nearest stops and frequencies of these routes.



Figure 7
Existing Transit Network





TABLE 1 TRANSIT ROUTES, STOPS, & FREQUENCIES NEAR PIER 31 ½

Route	Destination(s)	Nearest Stop Location	Service Frequency (min)			
			AM	Midday	PM	Sat
Muni Transit Service						
F Market & Wharves	The Embarcadero, Market Street, Upper Market	Embarcadero/Bay (inbound/outbound)	8	7	7	8
E Embarcadero	4 th Street/King Street, Ferry Building, Fisherman's Wharf	Embarcadero/Bay (inbound/outbound)	--	20	16	16
8/8BX Bayshore Express	Balboa Park, Financial District, North Beach	Kearny/North Point (inbound/outbound)	6/6	7/--	7/7	8/--
39 Coit Tower	Coit Tower, Fisherman's Wharf, North Beach	Stockton/North Point (inbound/outbound)	--	20	20	20
47 Van Ness	Fisherman's Wharf, Soma	Powell/Beach (inbound/outbound)	8	9	8	10
82X Levi Express	Levi Plaza, Caltrain	Battery/Filbert (outbound)	12	--	15	--
Water Emergency Transport Authority (WETA)/SF Bay Ferry & Blue and Gold Fleet						
Various Ferry Lines	Alameda, Oakland, SF Ferry Building	Pier 41	--	45+	--	45+
Golden Gate Transit						
Various GG Bus Lines ¹	Financial District, Van Ness, Embarcadero	Embarcadero/Bay (inbound/outbound)	30	45	30	--

¹ Although Golden Gate Transit buses travel near Pier 31 ½, Golden Gate Transit vehicles are prohibited from picking passengers up in San Francisco in the inbound direction and from dropping passengers off in San Francisco in the outbound direction. Because of this, Golden Gate Transit is not expected to be a key transit connection to the Proposed Project. Headways shown are the average of 13 Golden Gate Transit routes that stop at Bay Street and Embarcadero.

Source: Fehr & Peers, 2017



A transit screenline analysis was included in the 2013 EIS. Transit conditions have not substantially changed since the EIS, therefore the analysis would still be applicable today. The only major service change is the introduction of the E Embarcadero line, which if anything adds transit capacity in the project vicinity. According to the EIS, all transit lines serving the study area operated within the 85 percent capacity utilization threshold during the AM peak hour. For the PM peak hour, the F-Market & Wharves line operated above the threshold (at 103% percent) in the outbound direction.

Field observations in the mid-day (11:00 AM – 1:00 PM) and PM (4:00 PM-6:00 PM) periods on Tuesday, June 27, 2017 confirmed the EIS results, as general utilization was noted for the Historic Streetcar routes, which have stops closest to the project site. During the mid-day period, approximately five passengers load and unload from each car at the Bay Street and Chestnut/Sansome stops. In the PM period, the streetcars are frequently nearing capacity when they reach the Bay and Chestnut/Sansome stops, though passengers are still able to board the busy trains. Given their operation in the median, the streetcar lines were observed to experience little to no conflict with vehicles, bicycle or pedestrians. Additionally, the in-median waiting areas provided sufficient space for boarding and off-boarding passengers and no overcrowding was observed.

Pedestrian Facilities

Existing pedestrian facilities within the vicinity of the project include sidewalks, crosswalks, curb ramps, pedestrian signals, and streetscape and landscape features (i.e. trees, planters, street lighting). The project site is adjacent to two roadways included in the Vision Zero High Injury Network—Bay Street and the Embarcadero. The multi-use promenade along the east side of The Embarcadero is generally 18 to 25 feet wide. Sidewalks on the west side of The Embarcadero are generally 10 feet wide. Pedestrians can cross The Embarcadero at either Bay Street, which is approximately 350 feet north of the project site, or Chestnut Street/Sansome Street, which is 700 feet to the south. Each intersection only provides one crosswalk across the Embarcadero, since the east side promenade provides an uninterrupted walking path. These crosswalks are well-outlined but do not have any striping or other interior pattern to indicate high-visibility. This crosswalk design was not observed to cause unsafe conditions for pedestrians.

Although the Embarcadero presents a long pedestrian crossing, approximately 120 feet, the pedestrian signal gives 30+ seconds for crossing and two pedestrian refuges coincide with the northbound and southbound streetcar platforms to break up the distance. All crossings have curb ramps on both corners although most ramps are missing a detectable warning surface to aid visually impaired pedestrians. When crossing Chestnut Street, the curbs ramps are diagonal, as



opposed to directional, and do not clearly direct pedestrians into the path of the crosswalk. No pedestrian conflicts were observed in relation to the misaligned ramp, and this crossing aside, ramps, curbs, sidewalks, and pedestrian infrastructure appear to be ADA-compliant and in good condition. There is one curb cut in front of the project site that serves the parallel ADA parking space. The cut is approximately 30 feet wide and is a common access point for pedicabs to enter the promenade. Very few pedestrians were observed using the curb cut although occasionally a group of loading passengers would use the curb to access a vehicle waiting in the bike lane or travel lane. No conflicts were observed between pedicabs, pedestrians, or any other modes at this curb cut.

Most active uses on The Embarcadero are located on the waterfront (east side) where the majority of pedestrian activity occurs. The east side of the Embarcadero has few interruptions from cross streets and driveways, and therefore is an attractive facility for recreational purposes.

Existing pedestrian volumes and conditions were evaluated during field visits to the project site in the AM (7:00 AM-9:00 AM) and PM (4:00 PM-6:00 PM) periods on Thursday, June 22, 2017 and the mid-day (11:00 AM – 1:00 PM) and PM (4:00 PM-6:00 PM) periods on Tuesday, June 27, 2017. Pedestrian activity was observed to be generally light along Embarcadero's west side in comparison to activity on the east side promenade. Even still, nearly 150 people, and over 250 people crossed Bay Street during the AM and PM peak hours, respectively. Similar volumes crossed Chestnut Street during the AM and PM peak hours and nearly 340 crossed Sansome Street in the PM Peak Hour. These volumes indicate that the west side sidewalk is well-used. The Embarcadero crossing at Bay Street had about 80 more pedestrian crossings in the AM peak hour than the Embarcadero crossing at Sansome, but PM peak hour crossing volumes were about the same (approximately 200) for the two intersections.

Pedestrian crossing volumes were found to be higher than the pedestrian volumes analyzed in the 2013 EIS. However, the EIS concluded that pedestrian crowding under existing conditions was not an issue. Both the Embarcadero/Bay Street and Embarcadero/Sansome Street/Chestnut Street intersections were assessed with a multimodal level of service (LOS) threshold of A, indicating that greater than 60 square feet per pedestrian was available when using the crosswalk. Field observation during the peak periods confirmed that pedestrian conditions at crosswalks were not congested; pedestrians could move at free-flow and were rarely interrupted by street furniture or other pedestrians.



Bicycle Facilities

Existing bicycle facilities are part of the City of San Francisco bicycle network. Bikeways are typically classified into three categories:

- **Class I:** Pathways that provide exclusive right-of-way for use by bicyclists and pedestrians.
- **Class II:** Bicycle lanes striped within the roadway for use by bicyclists, typically between the vehicle travel lane and parking lane or curb.
- **Class III:** Bicycle routes that are signed and sometimes marked with shared lane markings (“sharrows”) where bicycles and vehicles share the same travel lane.

Pier 31 ½ is adjacent to two roadways included in the Vision Zero High Injury Network—Bay Street and the Embarcadero and is served by a few primary bicycle facilities (**Figure 8**). Class II bicycle lanes run in both the northbound and southbound directions along The Embarcadero between North Point Street and AT&T Park in the South of Market Area (Soma). The eastern promenade of The Embarcadero is designated as Herb Caen Way, a Class I shared bicycle/pedestrian path. Finally, a Class II bicycle lanes run in both the eastbound and westbound directions along North Point Street between The Embarcadero and Van Ness Avenue through Fisherman’s Wharf.

There is bicycle parking internal to the site in two locations: two large public racks placed in the crook of the Pier 33 building (**see Photo 2 below**) and two large employee-racks in the crook of the Pier 31 building (inside the enclosed employee parking area). These parking racks were about 90% full, each accommodating anywhere from 10-15 bikes at a time. There are seven public u-racks



Photo 2: Existing bicycle racks at Pier 31 ½.

along the Pier 35 and Pier 33 Embarcadero facades. None on these racks were in use during either observation period (mid-day and PM) on Tuesday, June 27. There are also three pedicab stops located at Pier 31 ½.

To access the existing Alcatraz Ferry embarkation site at Pier 31½, northbound bicyclists can either use the northbound Class II bicycle lane on the Embarcadero or Herb Caen Way to access the embarkation site. Southbound bicyclists either use Herb

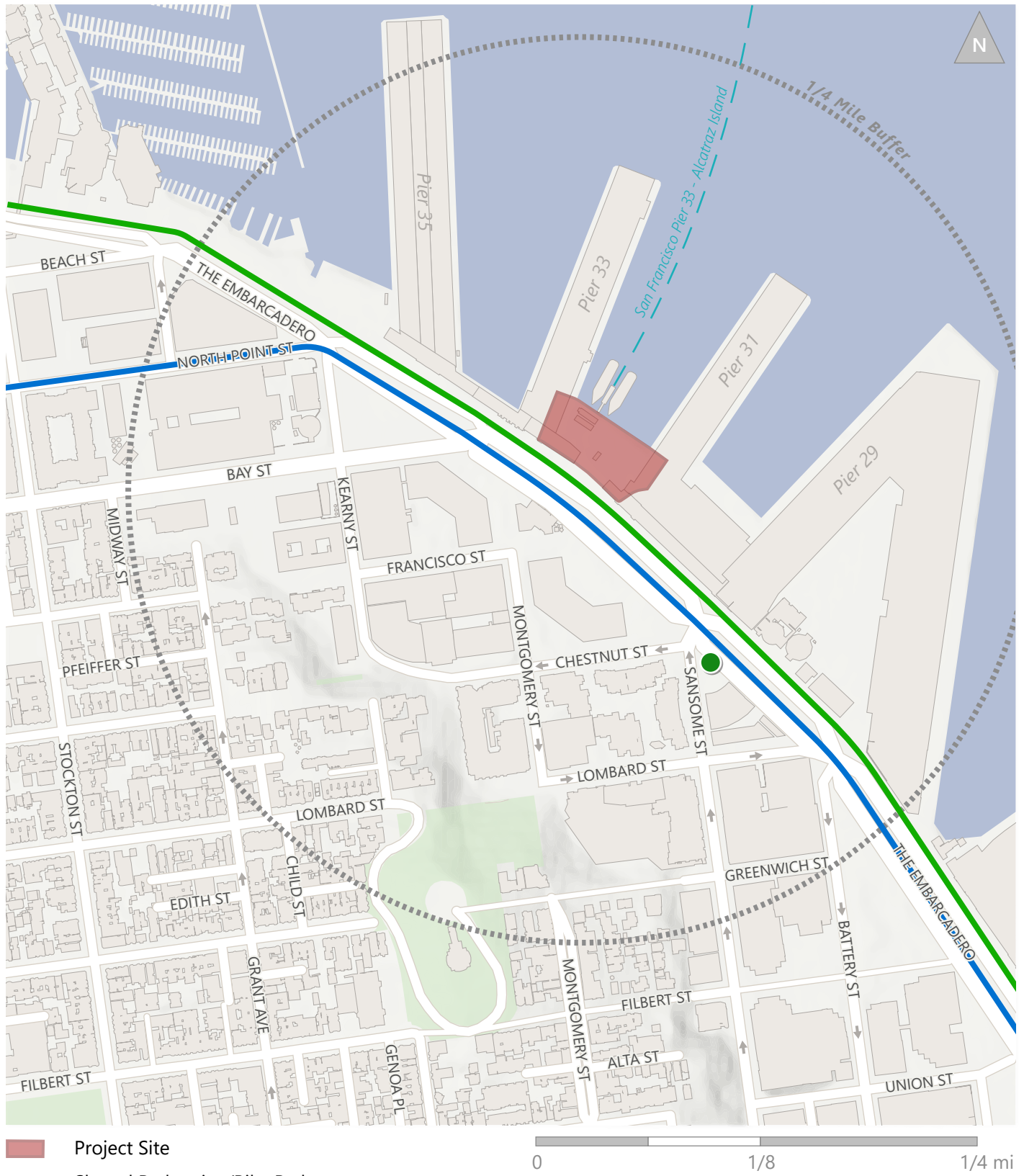
Caen Way or use the southbound Class II bicycle lane on The Embarcadero and then cross the



Embarcadero north of Pier 31½ at Bay Street or south of Pier 31 ½ at Chestnut Street/Sansome Street and backtrack to the embarkation site.

Cyclists could cross these intersections on their bicycle or could choose to dismount and walk their bike in a crosswalk. Since Pier 31½ is located between two intersections and The Embarcadero has multiple lanes, a median, and transit, southbound cyclists using the Class II facility may find access to the east side of the street challenging. Maneuvering to perform a u-turn at Sansome/Chestnut would require merging across two lanes of fast moving traffic, and there is no legal left turn for southbound cyclists at the Embarcadero/Bay Street intersection.

In 2013, as part of the Project's EIS, bicycle activity was observed on The Embarcadero between Bay Street and Chestnut Street, adjacent to Pier 31½. In general, about 75 percent of northbound bicyclists use Herb Caen Way rather than the adjacent northbound Class II bicycle lane on The Embarcadero. During busy days (e.g., weekends, good weather days, and special events) this path is crowded with pedestrians and as a result, some cyclists shift to using the northbound on-street bicycle lane. Approximately one-third of southbound cyclists were observed using Herb Caen Way; instead, the majority of southbound bicyclists used the southbound bicycle lane.



- Project Site
- Shared Pedestrian/Bike Path
- Bike Lane
- Bikeshare Station



Figure 8
Existing Bicycle Facilities



Updated bicycle counts taken in the AM (7:00 AM-9:00 AM) and PM (4:00 PM-6:00 PM) periods on Thursday, June 22, 2017 showed an approximately 25 percent increase in bicycle volumes compared to the volumes presented in the EIS, reflecting the City's efforts to promote bicycling. While the overall magnitude of bicycle trips have increased, the characteristics as presented above from the EIS are still applicable based on field observations.

Additional observations based on the 2017 field visit were noted. About 210 cyclists were counted traveling northbound (directly in front of the project site) on Embarcadero in the PM Peak Hour, while about 100 were counted traveling in the southbound direction. The higher volume of northbound cyclists led to more conflicts between cyclists and pedestrian loading activities along the project and adjacent frontages. Most of the northbound cyclists in the PM period were observed to be commuter rather than tourist cyclists, which were more common during the mid-day period. Commuting cyclists typically moved at a quicker speed than tourist cyclists and opted to merge into a travel lane to avoid idling curb activity rather than come to a stop in the bike lane.

The summer 2017 expansion of Ford GoBike's regional bikeshare program included a station just south of the site at the Embarcadero/Sansome Street/Chestnut Street intersection. The station, which has 14 bike docks, is the northernmost station planned at the time of this report with the next closest station located at The Exploratorium at Pier 15. Activity at the Embarcadero/Sansome Street/Chestnut Street bike share station was observed to be low during the AM Peak Hour, with one transaction occurring over a 15-minute period. During the PM Peak Hour, activity was observed to be moderate, with approximately four to five transactions occurring over a 15-minute period.



Parking Conditions

On-Site Parking

Off-street parking is currently provided on the project site for the NPS employees and site staff. Off-street parking is not provided for visitors. There is space for about 15 cars in the on-site parking area on the southeast portion of the site, 12 of which were observed to be occupied at mid-day on a weekday. The informal gate entrance off Embarcadero northbound is opened and closed by the security guard/information officer for the site, who is present for all business hours. When exiting the site, cars must turn right onto Embarcadero northbound. Conflicts were not observed between pedestrians or bicycles and vehicles entering and exiting the parking lot on the day of the site visit; in a few instances, the guard directed pedestrian traffic in order to let a car enter or exit. There are no parking and transit conflicts given the exclusive streetcar right-of-way in the center of the median.

Off-Site Parking

Fehr & Peers conducted on-street and off-street parking spot checks in the immediate vicinity of the project site. The spot check was conducted during a typical weekday mid-day period (11:00 AM- 1:00 PM) and found parking occupancy to be consistent (within the range of acceptable daily fluctuations) with parking conditions in the 2013 EIS.

Based on data collected for the 2013 EIS, there are approximately 1,125 off-street parking spaces in garages and lots within one-quarter mile of the site. Nine off-street parking facilities were surveyed for the 2013 EIS, all within approximately one-quarter to one-half mile of the project site. The parking garages in the area are privately-owned, but available to the public. Surface parking in the area is generally managed by the Port of San Francisco, and only represents a small portion of the total off-street parking count. Within one-quarter mile of Pier 31½, there are approximately 690 on-street parking spaces. This count includes spaces to the northeast of Telegraph Hill but does not include spaces within one-quarter mile that would require a circuitous route to the project site due to topography or discontinuous streets. For example, spaces on Chestnut Street east of Kearny Street were included in the count, but spaces on Chestnut Street west of Telegraph Hill were not due to the large hill and the break in Chestnut Street.

The 2013 EIS inventory found that during the week, parking is most utilized between 12:00 PM and 3:00 PM, when on average, 80 percent of available spaces are occupied. Off-street parking garages are between 50 and 70 percent occupied during business hours (generally 9:00 AM to 6:00 PM),



and after 6:00 PM parking utilization drops to 26 percent. On-street parking in the area is also effectively full between 9:00 AM and 6:00 PM, when utilization is between 80 and 100 percent. Weekend parking utilization is around 50 percent reflecting the ability to find available parking easily.

Passenger Loading

Fehr & Peers conducted field observations at the site on a typical weekday during mid-day and PM peak periods while Alcatraz ferry trips were running. Observations included drop-off and pick-up activities, classification of vehicle type, approximate passenger loads, and general traffic circulation and queuing conditions near the site. Observations were conducted on the northbound Embarcadero curbside between Pier 31 and 35. This curbside and sidewalk are entirely within the Port's jurisdictions and would remain under their jurisdiction with the Proposed Project. See **Figure 9** for a diagram of the existing curb configuration.

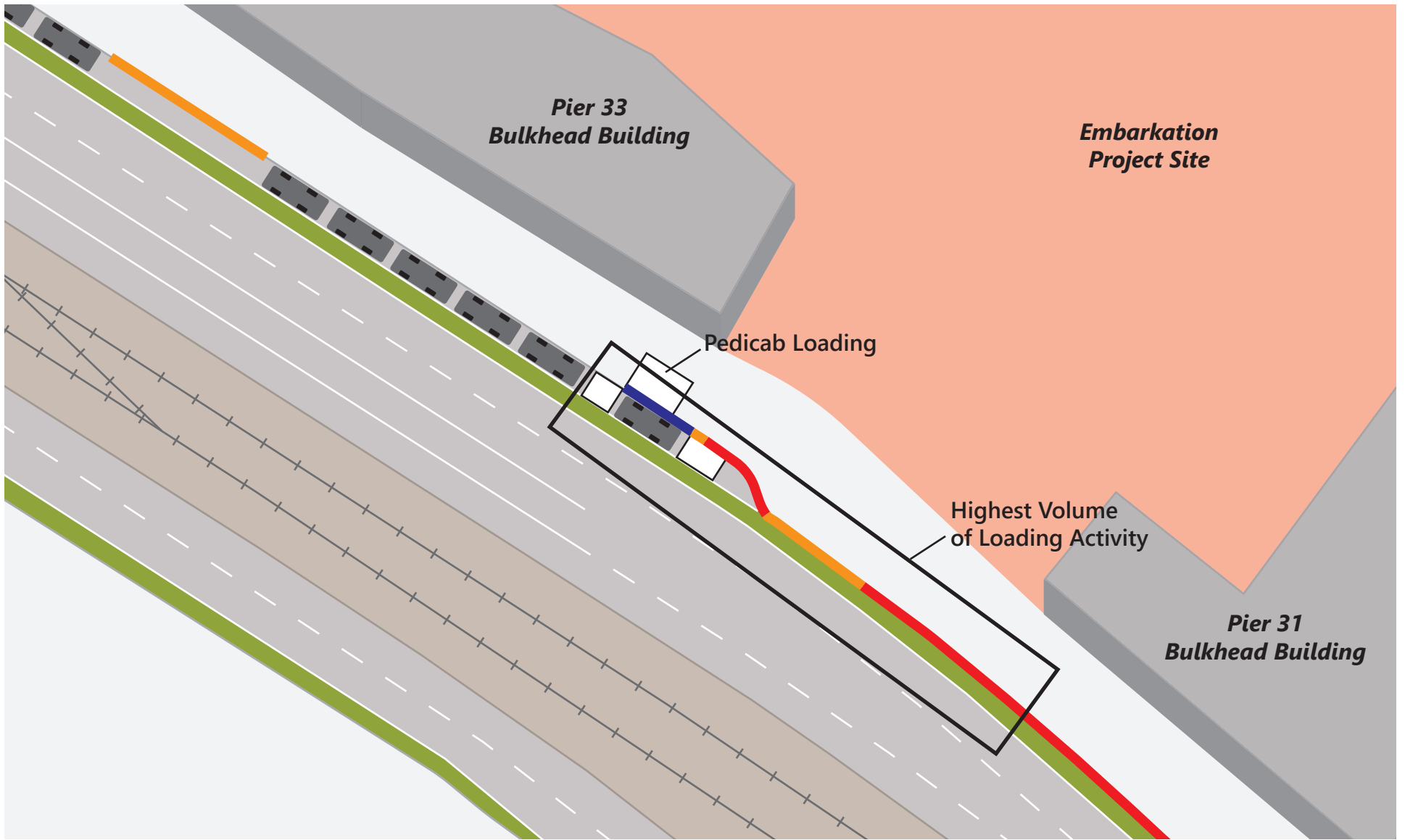
Most passenger loading activity occurred immediately in front of the site, but activity related to the site extended as far north as the Pier 35 curbside and as far south as the Pier 31 curbside. The only existing passenger loading zone near the site is immediately north of the Bay Street intersection approximately 400 feet north of the site entrance. The loading zone (approximately 45 feet long) can accommodate one bus or two cars comfortably. All other curb space between Pier 31 and 35 is dedicated to driveways or metered on-street parking, which includes one ADA accessible space immediately in front of the site entrance. In addition to vehicle parking spaces, there are two curb spaces designated for pedicabs. These pedicab spaces flank the ADA space immediately in front of the site entrance. There is an additional pedicab zone on the promenade sidewalk in front of the site. South of the site driveway is a stretch of red curb extending to the Pier 31 driveway, which is signed as "No stopping anytime."

The majority of pick-ups and drop-offs were performed by either a TNC vehicle (e.g., Uber or Lyft) or taxi (59% of all stops). The highest passenger loads came from tour buses (20% of stops). Private vehicles also accounted for 18% of stops. Shuttles and freight (remaining 3%) appeared a few times during observations, but played a minor role when compared to other vehicle categories.³

³ More shuttles visited the site to load or unload passengers than were recorded in the curb activity log. This is due to the fact that certain shuttle companies were permitted to enter the on-site parking lot via the site driveway.



Despite the curb restrictions, most curb activity occurred immediately in front of the project site, likely due to the door-to-door nature of TNCs and taxis. This led to numerous conflicts with bicycles and automobiles while cars were illegally double parked or idling in the bicycle and/or travel lanes. Only on rare occasions did vehicles pull fully into an empty curb parking space. Tour buses typically drove past the project site and used the designated loading zone on The Embarcadero north of Bay Street. In the event that two buses arrived at the loading zone simultaneously, however, the second bus was forced to stack in the bicycle lane and approaching bicyclists were forced to either stop and wait or merge into the travel lanes to pass. As shown in **Figure 9**, vehicles dropping off and picking up visitors most commonly utilized the area directly fronting the project site. This area included the ADA parking space (when unoccupied), the tapered red curb area, and pedicab zone north of the site driveway, the site driveway, and the red curb zone south of the project site.



- Project Site
- ADA Parking
- Curb Ramp
- No Parking
- Bike Lane



Embarcadero Northbound Curb Configuration and Common Drop-off Zones

Figure 9



Mid-day period: Many more drop-offs (73) than pick-ups (22) occurred during the two-hour mid-day period. These drop-offs seemed to be spread evenly throughout the period, but pick-ups were generally clustered around the disembarkation of a returning ferry. During the peak hour (11:00 AM – 12:00 PM), 48 loading activities occurred. Vehicles typically contained between two and four passengers. Taxis typically waited a few minutes after a drop-off in an attempt to secure a pick-up, but TNC vehicles were observed to linger only a minute or less before departing. Tour buses (including the Big Bus “hop-on-hop-off” services) almost always picked-up and dropped-off with each stop.

During the mid-day period, 18% of loading activities resulted in bicycle conflicts and 21% resulted in auto conflicts where a traveling car or bicycle had to switch lanes or stop to avoid hitting an idling vehicle. The majority of these incidents were caused by TNCs, taxis, or private autos. Mid-day bicycle traffic on the Embarcadero northbound was less frequent than in the PM period, but typically consisted of larger groups, which appeared to be tourists and families with children. These cyclists were typically moving at slower speeds than commuting cyclists, but also had more difficulty navigating loading activity conflicts. In most cases, these groups would come to a stop in the bike lane and wait for the idling vehicle to move again.

PM Period: The PM period had more pick-ups (43) than drop-offs (10), corresponding with more visitors leaving the site than arriving at the site. The vehicle type split was similar to the morning period even though there was less loading activity overall. This corresponded with lower activity levels at the embarkation site generally. As was true in the mid-day period, visitors seemed to arrive in a steady flow, but pick-ups were clustered around the ferry return times. During the peak hour (4:00 PM – 5:00 PM), 30 loading activities occurred.



Photo 3: Loading conflicts adjacent to Pier 31 ½ on the Embarcadero between loading vehicles and bicyclists.

In total, 45% of loading activities resulted in a bicycle conflict and 8% resulted in an automobile conflict. This reflects the higher bicycle volumes during this period. Many more cyclists traveled



northbound in the PM period due to commute travel away from the Financial District. These cyclists were typically moving at a quicker speed than the mid-day cyclists and opted to merge into a travel lane to avoid idling curb activity rather than come to a stop in the bike lane. Although travel on the mixed-use promenade is an option for cyclists, few cyclists were observed using this path during either the mid-day or PM observation periods. As was true in the Mid-day period, the overwhelming majority of conflicts were caused by TNCs, taxis, or private autos.

Pedicab Activity

Pedicabs—typically in the form of a bicycle pulling a 2-3 passenger bench on wheels—are a unique mode of transport along the Embarcadero. They typically travel in the bicycle lane, but pull up onto the promenade to load and unload passengers. Three staging zones are designated for the pedicabs adjacent to the project site; two on the street and one large box marked on the promenade itself. Pedicab drivers were diligent to stay in these boxes while trying to attract passengers. The Alcatraz Embarkation site was noted to be a popular staging area for the pedicab drivers who would often return to the site after dropping passengers off elsewhere along the Embarcadero. The pedicab drivers were observed to be particularly successful at attracting disembarking ferry passengers in the early PM period (4:00 PM – 5:00 PM) and would typically carry 2-3 passengers. Although pedicab counts were not recorded, pick-up and drop-off volumes appeared higher than private vehicle activity but lower than TNC and taxi activity, and were noted to be an important factor in the passenger loading activity for the site. Pedicab activities were not observed to conflict with passenger loading.

Commercial/Freight Loading

At the time of observations, two commercial loading instances occurred. Two different courier trucks were observed making a delivery to Pier 33 at 11:15 AM and 12:15 PM. In the first instance, the truck parked in the bike lane and remained there for approximately 15 minutes. Cyclists were forced to merge into the adjacent travel lane to avoid this vehicle in the same way that they have to adjust for passenger loading in the bike lane. The second truck found an open parking spot along the curb and pulled fully out of the bike lane; he remained in the spot for 20 minutes. It was unclear whether either of these deliveries were received by the project site or some other neighboring business. According to information provided by the NPS, commercial loading occurs in the on-site parking area. Vehicles routinely cross the sidewalk to access this parking area and the pier sheds without conflict with pedestrians or bicyclists, and it is expected that commercial loading would be similar. Fuel loading for the ferries occurs in the pedestrian plaza once a week between the hours



of 7:00 PM and 10:00 PM when pedestrian activity is low on the plaza and sidewalk. Waste and recycling collection for NPS occurs in the Pier 33 shed building in the early morning.

Emergency Services & Access

Emergency vehicles typically use Embarcadero northbound to access this site. In the current state, emergency vehicles could even drive onto part of the site if necessary or use the site driveway as a staging area. As an arterial roadway, Embarcadero allows emergency vehicles to travel at higher speeds and permits other traffic to maneuver out of the path of the emergency vehicle. Non-emergency vehicles have to yield to emergency vehicles headed to the project site, as required by the California Vehicle Code⁴. Further, in cases of heavy congestion, emergency vehicles could use the center transit-only lanes used by the F-Market and Wharves and the E-Embarcadero streetcars. The San Francisco Fire Department stations closest to the project site are Station 28 (1814 Stockton Street at Greenwich Street, 0.6 miles away from the project site) and Station 13 (530 Sansome Street at Washington Street, 0.8 miles away from the project site). Trucks from these stations can reach the Embarcadero from Bay Street and Sansome Street, respectively.

⁴ Per the California Vehicle Code, Section 21806, all vehicles must yield right of way to emergency vehicles, and should remain stopped until the emergency vehicle has passed



FORT BAKER

Existing Roadway Network and Traffic Circulation

The primary roadways at Fort Baker include Moore Road, Center Road, East Road, Bunker Road, and Murray Circle. Bunker Road and East Road lead into the site from the west and east, respectively. These are the primary access roads for vehicles, but would rarely be used by pedestrians arriving by ferry. Moore Road connects the Fort Baker pier and the central lawn of Fort Baker. There is little vehicle traffic on Moore Road since public access ends just beyond the pier. Together Center Road and Murray Circle form a complete loop around the Fort Baker center lawn. Center Road provides vehicle access to the Bay Area Discovery Museum parking lot and Murray Circle provides access to Cavallo Point Lodge. Center Road is the only local road with clearly defined bike lanes although East Road has wide shoulders that create a popular route for cyclists passing through from Sausalito or the Marin Headlands. Designated on-street parking is permitted on Murray Circle near the lodge as well as on portions of East Road and Moore Road. No parking is permitted on Center Road or Bunker Road.

The Proposed weekend ferry service to Fort Baker would not add any vehicle trips to the roadway network and as such, vehicle counts were not taken at any Fort Baker locations. Informal observations on July 12, 2017 between 9:00 AM and 11:00 AM revealed a steady, but low volume flow of vehicles into and out of the Discovery Museum parking lot. This was likely due to summer camp loading and unloading. There was very little vehicle activity outside of the Museum parking lot.

Transit Network

Although there are no public transit stops within Fort Baker, the privately-owned San Francisco Big Bus (Hop-on Hop-off) runs a daily route through Fort Baker. This is primarily a tourist travel mode and comes every 20-30 minutes between 10:20 AM and 4:35 PM.

The closest public transit stops are at Bunker Road/Alexander Avenue, East Road/Alexander Avenue, and Conzelman Road/Alexander Avenue. The first two stops serve routes, including the 2, 4, 30 and 92, operated by Golden Gate Transit, and the Conzelman Road stop serves Muni Route 76X which winds throughout the Marin Headlands. All of these stops are at least a mile walk from the Ft. Baker Pier and are therefore unlikely mode choices for ferry visitors.



Pedestrian Facilities

Existing pedestrian infrastructure and pathways at Fort Baker were assessed on July 12, 2017 between 9:00 AM and 11:00 AM. Conditions were observed on Center Road, Moore Road, the pier, Sommerville Road, Murray Circle, East Road, and around the Bay Area Discovery Museum and parking lot. During observations, there was very little pedestrian activity outside of the Museum parking lot. Pedestrian activity outside of the Museum parking lot was estimated at 15-20 visitors over the course of two hours.

High-visibility pedestrian amenities exist surrounding the Discovery Museum parking lot, loading zone, and entrance. All sidewalks around the parking lot have multiple ramp access points with warning pads and brightly striped crosswalks form clear pedestrian pathways through the parking lanes to the museum entrance. These elements are continued into the gravel parking area at the southern end of the lot. Although present, some of the ADA warning pads do not appropriately direct travel into the crosswalks. Instances of misaligned pads occur on both crosswalks at the Center Road and parking lot intersection as well as on the southern ramp at the second crosswalk as pedestrians enter the parking lot. None of these ramps presented potentially hazardous conditions for pedestrians or any other modes.

The northern side of Murray Circle has a paved sidewalk from Bunker Road to East Road, which provides pedestrian access to the Lodge at Cavallo Point as well as the associated conference center and restaurant. This sidewalk is generally in good condition, but does not have ramps and does not provide a marked crosswalk at the access road between Murray Circle and McReynolds Road (just north of East Road). The Project will construct ADA-compliant curb ramps at this intersection, thereby completing a fully ADA-accessible pathway from the pier to Cavallo Point Lodge.

A paved, separated pathway travels the length of the Parade Grounds along Center Road and provides a logical travel route to the pier and waterfront from either the Cavallo Point facilities or the Museum. This paved pathway is an important north-south pedestrian route on the site, but is somewhat disconnected from the Lodge and the waterfront. An informal path appears in the grass between the Lodge and the Center Road paved path indicating a desire to travel directly between those points rather than around Murray Circle. The paved pathway continues around the southern edge of the Parade Grounds, but does not direct pedestrians across either Center Road or Murray Circle at the Moore Road intersection. Instead, this pathway allows pedestrians to travel the full distance around the Parade Grounds and eventually back to Cavallo Point Lodge.



The pier itself is a pedestrian destination, but no formal pedestrian facilities exist along Moore Road or Sommerville Road (**as seen in Photo 4 below**). An informal dirt path exists along the east side of Moore Road between Center Road and Sommerville Road.



Photo 4: Moore Road and Sommerville Road intersection.

Bicycle Facilities

Center Road is the only local road with clearly defined bike lanes although East Road has wide shoulders that create a popular route for cyclists passing through from Sausalito or the Marin Headlands. Only a few cyclists were observed using the Center Road lanes during the observations on July 12, 2017. There are no easily accessible bicycle parking options at either the discovery Museum or Cavallo Point Lodge. Parking Conditions Designated on-street parking is permitted on Murray Circle near Cavallo Lodge as well as on portions of East Road. No parking is permitted on Center Road or Bunker Road. The largest parking area is provided for the Bay Area Discovery Museum. The museum lot can accommodate approximately 185 vehicles including designated



parking for up to eight ADA visitors. A small parking area with approximately ten spaces (including one ADA space) is provided on Moore Road next to the pier. These spaces will be retained with the Project. Marina and shoreline parking is provided in dirt lots off of Sommerville Road and at the terminus of Marina Road. Parking was approximately 50 percent utilized during July 12, 2017 observations from 9:00 AM to 11:00 AM. No parking demand is anticipated with the Proposed Project since all visitors will arrive by ferry and ferry ticket purchase will only be available on the San Francisco side.

Passenger Loading

A sizable passenger loading zone is provided adjacent to the Discovery Museum parking lot. This loading zone serves at the pick-up and drop-off site for the San Francisco Big Bus as well as loading needs for the Museum or other site visitors. It was well utilized during July 12 observations. The loading zone is well-connected to sidewalks and crosswalks serving the museum and other points of interest around Fort Baker. There is an ADA-compliant curb ramp provided at the center of the loading zone with truncated domes and ample space for any type of wheelchair or stroller. Cavallo Point Lodge provides a white loading curb for valet parking. The curb is long enough for multiple cars to wait at once and lets visitors off directly in front of the Lodge entrance.

Commercial Loading

No commercial loading activity was observed during the site visit. Commercial loading will remain unchanged under the Proposed Project, and it is expected the ferry visitors will not interact with any commercial loading activity.

Emergency Access

The U.S. Coast Guard occupies a building and two boat berths between the pier and the Discovery Museum. This unit is capable of responding to local emergency needs. The next closest emergency service units are police and fire units in Sausalito or the Golden Gate National Recreation Fire Station at Fort Chronkhite. These units can access the site via Bunker Road or East Road. No aspect of this service or access will change under the Proposed Project. With upgrades to the pier, it is likely that emergency water access to the site will improve.



TRAVEL DEMAND ANALYSIS

TRIP GENERATION

Park Service modeling forecasts that, with the Proposed Project, visitorship to the primary ferry embarkation site could grow from 6,160 visitors per day to 6,550 visitors per day. These numbers include both ticketed passengers and visitors to the site without tickets, as well as passengers taking part in interpretative Bay cruises and limited ferry service to Fort Baker.

Travel demand analysis for the Proposed Project is based on results of the transportation impact analysis conducted for Pier 31 ½ alternative as part of the EIS. The currently Proposed Project is the same project evaluated for Pier 31 ½ alternative in the EIS, and there have been no significant alterations to the transportation network or land uses in the vicinity of the project site since the EIS study was completed. As previously noted, a detailed examination was performed of the existing conditions surrounding the project, to confirm the data summarized in the EIS is still relevant in 2017.

Daily and peak hour person trip generation forecasts for the embarkation sites were developed based on the existing and expected visitors to the island and embarkation site. The Alcatraz ferry embarkation site currently has about 5,460 touring visitors (i.e., ticketed passengers taking the ferry to the island) and 700 non-touring visitors on a peak day of the year (i.e., visitors that travel to the embarkation site but do not board a ferry to Alcatraz Island [URS 2011, see **Appendix C**]). Typically, the non-touring visitors consist of visitors that do not have pre-purchased tickets and cannot be accommodated because ferries are sold out. There are 19 daily ferry departures in the spring and summer (peak) months with no more than three and an average of two ferries an hour.

In general, visitation peak is controlled by the instantaneous capacity of Alcatraz Island, which in turn determines the schedule and number of ferries that arrive and depart from the embarkation site. The current daily capacity of the island is approximately 5,460 visitors. After planned long-term enhancements are made on-island to more efficiently manage visitor flow, the Park Service expects that approximately 20 percent more visitors can be accommodated on a peak day (i.e., about 6,600 daily Alcatraz Island visitors). Similarly, the number of non-touring visitors is expected to increase in the long term, from approximately 700 to 800 per day (URS 2011). Enhancements to landside facilities (i.e., ferry service requirements, visitor amenities, educational facilities, transportation access, and operation space) at the embarkation site as part of the Proposed Project are expected



to more comfortably accommodate the increased number of visitors, but they are not essential to the growth, which would occur with or without the enhancements to the embarkation facility.

Under the Proposed Project, the embarkation facility would contain an additional boat berth that would operate additional ferry service to Fort Baker as well as offer interpretive cruises around the Bay. As described in the Project Description section, the Fort Baker ferry service will be limited to two ferries per day and occur on weekends only. For the purposes of this study, the Fort Baker ferry service is included in the weekday travel demand estimates in order to present a conservative “peak day” analysis. The peak daily person trip generation, for both ticketed passengers and visitors to the site without tickets, under near-term and long-term conditions are summarized in **Table 2**.

TABLE 2 EXISTING AND FUTURE DAILY PERSON TRIPS TO THE ALCATRAZ EMBARKATION SITE

	Existing	Plus Proposed Project	Net New Person Trips
Near-Term			
Alcatraz Tour Visitors	5,460	5,460	0
Non-Alcatraz Tour Visitors	700	1,090	390
Total	6,160	6,550	390
Long-Term (2035)			
Alcatraz Tour Visitors	6,600	6,600	0
Non-Alcatraz Tour Visitors	800	1,190	390
Total	7,400	7,790	390

Source: Fehr & Peers, 2017; *Draft Alcatraz Ferry Embarkation and Education Site Feasibility Study*, URS, 2011

Person trip generation for the peak hours is driven largely by ferry departures and arrivals that occur during the peak hours as well as the visitor arrival patterns discussed in the *Draft Embarkation Facility Space Planning Model-Results* study (see **Appendix C**). The study provided information on the typical visitor arrival time before a ferry leaves the dock, length of stay after disembarking from a ferry, and the number of non-island tour visitors expected to be at the site during a typical hour throughout the day. The pattern of the existing ferry schedule was compared to the ferry schedule



used in the 2013 EIS, and while there is more service today on a daily basis, there are the same number of ferries that affect the peak hours during summer months schedule. During the summer-months schedule, three ferries depart in the AM peak hour, 8:00 AM – 9:00 AM, and two ferries depart during the PM peak hour, 5:00 PM – 6:00 PM. The existing and future peak hour person trips to the Alcatraz Ferry Embarkation Site are presented in **Table 3**.

TABLE 3 EXISTING AND FUTURE PEAK HOUR PERSON TRIPS TO THE ALCATRAZ EMBARKATION SITE

	Inbound Person Trips		Outbound Person Trips	
	Near-Term	Long-Term (2035)	Near-Term	Long-Term (2035)
No Project Conditions				
AM Peak Hour	1,200	1,440	0	0
PM Peak Hour	600	720	1,050	1,260
Plus Project Conditions				
AM Peak Hour	1,270	1,510	0	0
PM Peak Hour	640	760	1,110	1,320
Source: Fehr & Peers, 2017				

Mode split was based on a large survey effort conducted by Fehr & Peers in July 2012. The response rate was very high with over 800 completed surveys conducted on-site at Pier 31 ½. Mode of travel was recorded in the survey and presents a robust mode split that was applied proportionally to the existing trip generation as well as the six percent predicted increase in visitorship under the Proposed project. The resulting net new trips and total person trips are shown in **Table 4**. To convert person trips to vehicle trips, an average vehicle occupancy of 3.9 was derived from the survey data and applied to the *Taxi* and *Car+Walk* modes. For tour buses, an average vehicle occupancy of 40 was assumed, based on the split between full size tour buses and smaller shuttle-style buses. The net new and total vehicle trips are presented in **Table 5** below. For more detail on the travel demand methodology and results, the full EIS is included as **Appendix D**.



TABLE 4 PERSON TRIPS BY MODE

Mode	Net New Project Trips			Total Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total
AM Peak Hour (8-9 AM)						
<i>Walk/Bike</i>	17	0	17	306	0	306
<i>Tour Bus</i>	3	0	3	64	0	64
<i>Taxi</i>	8	0	8	140	0	140
<i>Other Public Transit</i>	11	0	11	204	0	204
<i>F-Line</i>	12	0	12	217	0	217
<i>Car + Walk</i>	19	0	19	344	0	344
<i>Total Person Trips</i>	70	0	70	1,275	0	1,275
PM Peak Hour (5-6 PM)						
<i>Walk/Bike</i>	10	14	24	153	268	421
<i>Tour Bus</i>	2	3	5	32	56	88
<i>Taxi</i>	4	7	11	70	123	193
<i>Other Public Transit</i>	6	10	16	102	179	281
<i>F-Line</i>	7	10	17	109	190	299
<i>Car + Walk</i>	11	16	27	172	301	473
<i>Total Person Trips</i>	40	60	100	638	1,117	1,755

Source: Fehr & Peers, 2017.



TABLE 5 VEHICLE TRIPS BY MODE¹

Mode	Net New Project Trips			Total Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total
AM Peak Hour (8-9 AM)						
<i>Tour Bus</i>	-- ²	0	--	2	0	2
<i>Taxi</i>	2	0	2	36	0	36
<i>Car + Walk</i>	5	0	5	89	0	89
Total Vehicle Trips	7	0	7	127	0	127
PM Peak Hour (5-6 PM)						
<i>Tour Bus</i>	-- ²	-- ²	-- ²	1	2	3
<i>Taxi</i>	1	2	3	18	32	50
<i>Car + Walk</i>	3	4	7	45	77	122
Total Vehicle Trips	4	6	10	64	111	175

Notes:

¹In order to convert person trips to vehicle trips, the following occupancy assumptions were made: for tour buses, it was assumed that all tour buses accommodated an average occupancy of 40 visitors. For car and taxi arrivals, an average vehicle occupancy of 3.9 was used, which was derived from the survey effort results.

²New trips would be accommodated by existing buses. In the AM, Peak Hour, there are 61 existing tour bus visitors (64-3) and 3 new tour bus visitors. This means that two 40-person buses are needed under existing conditions as well as under Project conditions. The 5 new PM Peak Hour trips are similarly accommodated by the three buses already required under existing conditions to transport 83 existing tour bus visitors.

Source: Fehr & Peers, 2017

PASSENGER LOADING DEMAND

The increase in maximum passenger loading demand due to the Proposed Project was estimated by increasing the existing maximum passenger loading demand (15 and 9 vehicles in the peak 15-minutes in the mid-day and PM peak hours, respectively) by six percent, or the expected increase in daily visitorship. Each vehicle stopped for approximately a minute or less to load or unload



passengers. **Table 6** presents the existing maximum passenger loading demand and the estimated demand under the Proposed Project. The Proposed Project would increase the number of visitors by six percent. Due to the fact that land uses are projected to remain stable in the surrounding area and project circulation is not expected to substantially change, it was assumed that new visitors will use modes of travel in the same proportions as under existing conditions. Operating under this assumption, the peak loading demand in the mid-day peak hour would increase from 15 to 16 vehicles. The peak loading demand in the PM peak hour would increase from 9 to 10 vehicles. The Proposed loading zone can accommodate five to six vehicles at a time, which is two to three more vehicles than was ever observed loading simultaneously under existing conditions. For this reason and given the very small increase in loading demand under the Project, it is anticipated that that new loading zone will be able to accommodate peak loading demand.

TABLE 6 PEAK 15-MINUTE PASSENGER LOADING ZONE ACTIVITY

	Existing	Net New Loading	Total
Mid-day Peak 15 minutes (11:00 AM – 11:15 PM)¹	15	1	16
PM Peak 15 minutes (4:15 PM – 4:30 PM)²	9	1 ³	10

Notes:

1. The maximum passenger loading demand for the Mid-day peak hour currently occurs at 11:00 AM.
2. The maximum passenger loading demand for the PM peak hour currently occurs at 4:15 PM.
3. Vehicles are rounded to nearest whole number.

Source: Fehr & Peers, 2017



PARKING DEMAND

As part of the 2012 on-site survey conducted at Pier 31½, parking-specific questions were asked to help determine where people park and where they may park in the future. Visitors who drove or carpooled were asked where they parked and estimates of total parking demand and parking location were developed from survey responses. Based on mode split data, the estimated parking demand increase associated with new visitors to Pier 31½ is just under 30 total new vehicles per day on both weekdays and weekend days over the course of an entire day. This increase is in addition to the existing parking demand associated with the facility at Pier 31 ½, which is accounted for in the background parking occupancy data, and is primarily associated with the addition of a third ferry berth. Parking estimates by time of day are shown in **Table 7** below for new visitors to Pier 31 ½. For more details on parking demand analysis, please see the full EIS in **Appendix D**.

TABLE 7 NET INCREASE IN PARKING DEMAND AT PIER 31½

	Week Day	Weekend Days
9:00AM – 12:00PM	8	8
12:00PM – 3:00PM	8	8
3:00PM – 6:00PM	8	8
6:00PM - 9:00PM	3	3
Daily Net Increase in Daily Demand	26	27

Source: Fehr & Peers, 2017



IMPACT ANALYSIS

VMT IMPACTS

Pier 31 ½

VMT Analysis

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. None of these factors are changing as a result of the Proposed Project. As a result, although travel demand is expected to increase due to the Proposed Project, visitor and employee travel behavior is not expected to change. Existing average daily VMT per employee for retail uses in TAZ 854 is 7.9 miles. This is 47 percent below the existing regional average daily VMT per capita of 14.9. Given that the project site is located in an area where existing VMT is more than 15 percent below the existing regional average, the proposed project's bar/lounge use would meet the Map-Based Screening for Retail Projects criterion and would not result in substantial additional VMT, and impacts would be less than significant. The project site also meets the Proximity to Transit Stations screening criterion, which indicates that the proposed project's retail uses would not cause substantial additional VMT. Therefore, the Proposed Project would not cause substantial additional VMT per capita and impacts would be **less than significant**.

Induced Automobile Travel Analysis

A project would have a significant effect on the environment if it would substantially induce additional automobile travel by increasing physical roadway capacity in congested areas or by adding new roadways to the network. The Proposed Project is not a transportation project and does not propose any adjustments or additions to the existing roadway network. Therefore, the impacts would be **less than significant**.

Fort Baker

The Proposed Project will not bring any new vehicle trips to the Fort Baker site, which also means no additional VMT or induced automobile travel in that vicinity. By design, any new trips generated by the Proposed Project would arrive at Fort Baker via ferry. Any vehicular access trips for the Fort



Baker uses are assessed in trip generation for Pier 31 ½ site access. The new ferry service to Fort Baker could potentially reduce overall VMT, since it provides an alternative to people driving or taking a bus to the Fort Baker site. Therefore, the impacts would be **less than significant**.

TRAFFIC IMPACTS

Pier 31 ½

Traffic Hazards

Traffic queues are minimal under existing conditions; all but two cycles cleared for every turning movement in both the AM and PM peak periods at the intersection of Bay Street and Embarcadero. The longest queues formed on Embarcadero southbound in the AM and Embarcadero northbound in the PM. In particular, left-turns off Embarcadero northbound onto Bay Street had substantial queuing. Although queues spilled back past the inner left-turn lane, the outer left-turn lane had ample capacity to store that queue. Further, though it was observed in one instance that the left-turn queue spilled back to the upstream intersection, it was an isolated incident and does not routinely happen. Because of this, neither of these queues presented major traffic hazards to other automobiles, pedestrians, or cyclists. The small number of additional vehicle trips to Pier 31 ½, included in **Table 5** is not expected to substantially extend either of these queues and therefore is not likely to cause new or increased hazards to other road users. The Project is expected to add seven new vehicle trips in the AM, and ten vehicle trips in the PM. For the intersections adjacent to the project, this represents less than a one percent increase in the existing intersection volumes (see **Appendix B**) in either the AM or PM Peak Hour. There are no new design elements associated with the project that are anticipated to cause major traffic hazards or result in significant delay to any mode. Staff parking will be moved from the marginal wharf into the Pier 31 bulkhead building which means that vehicle ingresses and egresses will move from the project driveway to the Pier 31 driveway. Driveway volumes would be similar to site driveway volumes today and ingress and egress would largely operate as they do today. This is not anticipated to result in hazardous conditions because once on-site, employee vehicles are not expected to surpass five mph and turning is limited to pulling into or out of a parking space. Therefore, traffic impacts associated with the Proposed Project would be considered **less than significant**.



Fort Baker

The Proposed Project will not bring any new vehicle trips to the Fort Baker site and proposed no design changes to the roadway network that could result in potentially hazardous conditions. The proposed pedestrian paths will keep pedestrians on designated pedestrian paths or sidewalks, which will reduce the likelihood of vehicle conflicts with pedestrians from current conditions. It is likely that by creating designated pedestrian pathways where none exist today, the Project would reduce the number of pedestrians walking in the roadway, thereby reducing a potentially hazardous situation. For these reasons, the impacts would be **less than significant**.

LOADING IMPACTS

Pier 31 ½

Passenger Loading Impacts

Under existing conditions, passenger loading on The Embarcadero northbound occurs primarily outside of the designated loading zone. Tour buses are the only vehicle type to consistently utilize the loading zone, while most other vehicle types (for-hire vehicles, private automobiles, and shuttles) queue in the pedicab parking spots, bicycle lane, or vehicle lane directly fronting the site, blocking pedicab, cyclist, and/or automobile travel.

The Proposed Project would add a new FAS-compliant loading zone with 110 feet of usable curb space, accommodating five to six vehicles. This loading zone would be developed along the Embarcadero between the site entrance and the Pier 33 driveway. The loading zone would be separated from the roadway and bike lane by flexible bollards, effectively channelizing the entrance and exit of loading vehicle so as to make their movements more predictable for passing vehicles and bicycles. **Figure 4** provides a conceptual diagram of the proposed loading zone. The existing FAS-compliant drop-off zone for tour buses and persons with disabilities, measuring approximately 45 feet in length, would remain north on the Embarcadero, adjacent to the Pier 35 bulkhead building.

Assuming the new visitors use modes of travel at the same proportion as under existing conditions, the maximum passenger loading demand would be increased by one vehicle each in the mid-day (11:00 AM) and PM (4:15 PM) peak 15-minute period. The 15-minute peak loading demand in the mid-day peak hour, would increase from 15 to 16 vehicles, as shown in **Table 6**. The 15-minute peak loading demand in the PM peak hour would increase from nine to ten vehicles. None of these



new vehicles would be tour buses (see travel demand analysis) and thus the Proposed Project would not exacerbate existing loading conditions associated with tour bus loading in the 45-foot loading zone adjacent to Pier 35. All passenger vehicle and shuttle trips associated with the site—both existing and new—would be able to use the new loading zone directly in front of the site. Based on field observations, peak period passenger vehicle and shuttle loading activity would be accommodated by the five to six vehicle queue capacity provided by the proposed loading zone. The greatest simultaneous loading demand was observed to be three vehicles, meanwhile the proposed loading zone provides capacity for up to 200 percent of that demand. As shown in **Table 6**, the Project would generate one additional passenger loading activity during the peak 15-minute period. As a most conservative case, if this activity occurred concurrent with the greatest observed simultaneous loading demand, there would be four vehicles occupying the loading zone and would be accommodated by the proposed passenger loading zone.

Under present conditions, loading activity creates hazardous conditions for automobiles, bicycles, and loading passengers due to the fact that insufficient loading capacity is provided. This issue would be addressed by the proposed passenger vehicle loading zone. The proposed loading zone would greatly improve the quality and safety of loading activity at the site, thereby resulting in a **less than significant impact**.

Commercial Loading Impacts

Consistent with current commercial loading procedure, the Proposed Project would locate commercial loading in the interior of the Pier 31 and Pier 33 shed buildings. Through discussions with the Port and Project Sponsor, commercial loading is largely compliant with these instructions for off-street loading in the shed buildings. No aspect of the Project proposes to substantially alter commercial loading demand for the site and thus, it is anticipated that any increases to demand would be minimal and accommodated by on-site facilities in Pier 31 and 33. Although on-street, commercial loading activity was observed in front of the site, it is unclear if this was associated with the site, and regardless, this condition is not anticipated to be exacerbated by the Proposed Project. Fuel loading for the ferries will occur in the pedestrian plaza after hours as it does today, when pedestrian activity on the sidewalk would be low. Commercial loading activity with the Proposed Project is generally proposed to take place outside of peak hours and is not expected to create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians. Therefore, the Proposed Project's impacts on commercial loading would be **less than significant**.



Fort Baker

The Proposed Project will not make any changes to passenger or commercial loading infrastructure or procedures at Fort Baker, nor would the Project generate passenger or commercial loading demand. Loading operations occur without issue and interfere with no other modes under current conditions. Therefore, the impacts would be **less than significant**.

TRANSIT IMPACTS

Pier 31 ½

The 2013 EIS found that generally, all transit lines serving the study area and the Downtown Screenlines would operate within the 85 percent capacity utilization threshold in the weekday AM peak hour. However, in the weekday PM peak hour, the F Market & Wharves would operate above the threshold in the outbound (i.e., north toward Pier 39) direction under both the current conditions and the Proposed Project. The growth in transit ridership associated with the Proposed Project on the F-line would be 12 and 17 transit-trips during the AM and PM Peak Hours, respectively and would represent less than a one percent contribution to the capacity utilization of the transit line.

The E Embarcadero was not in service at the time of the 2013 TIS, but based on field work conducted Tuesday, June 27, 2017, during the mid-day (11:00 AM–1:00 PM) and PM (4:00 PM–6:00 PM) periods by Fehr & Peers, similar patterns were observed for the E Embarcadero as for the F Market & Wharves. The historic streetcars run in an exclusive right-of-way and would experience no delay due to new project trips. Furthermore, the project does not include design features that would result in activities that would introduce new conflicts with transit operations. Therefore, the Proposed Project would have a **less than significant** impact on transit capacity and delay. Although the Proposed Project would have less-than-significant transit demand impacts, the project sponsor should consider the measures identified in Improvement Measures TR-1, TR-2 and TR-3 below to attempt to incentivize the use of transit. The improvement measures presented are as follows (full text provided in the Recommended Improvement Measures section of this memorandum):

- Improvement Measure TR-1 – Provide Information on Active Transportation and Transit Routes to/from the Embarkation Site
- Improvement Measure TR-2 – Install Multimodal Wayfinding Kiosk and Signage
- Improvement Measure TR-3 – Advertise Emergency Ride Home Program



Fort Baker

The Proposed Project will not alter transit service or generate any new transit riders in the vicinity of Fort Baker. There are no public transit stops within the Fort Baker site and additional pedestrian traffic will not interfere with transit operations. Therefore, the impacts would be **less than significant**.

PEDESTRIAN IMPACTS

Pier 31 ½

The Proposed Project would improve the pedestrian realm by eliminating frequent vehicular access/egress to the 15 on-site parking spaces from the site driveway. Although these entrance and exit movements are only moving to the Pier 31 driveway, and not being eliminated, the proposed arrangement reduces the number of active driveways, thereby also reducing the number of potentially hazardous turning movements and pedestrian conflict points with automobiles. Furthermore, vehicular driveway activity would be moved away from the main pedestrian plaza entrance, where pedestrians are likely to congregate. Neither of these design elements would interfere with pedestrian access or circulation to the site and adjoining areas.

The Proposed Project would further improve the pedestrian realm by creating a more spacious and welcoming pedestrian experience with enhanced exhibits and seating at Pier 31 ½ open to all members of the public in addition to ticket-holding visitors. This includes converting the existing on-site parking into additional pedestrian space. When you consider that visitors must offload from transit, park their car at a nearby lot, or even dismount their bicycle, it becomes clear that all net new trips, regardless of mode, end as walking trips into the project site. As shown in the travel demand estimates in **Table 4**, this means 70 and 100 new AM and PM Peak Hour pedestrian trips, respectively. All walk trips would use the Embarcadero Promenade directly in front of the Project Site. The Embarcadero Promenade, as shown in the EIS, has excess capacity and would be able to accommodate this level of pedestrian growth due to the Project. These trips primarily travel farther up or down the Embarcadero Promenade or cross at Bay Street or Chestnut Street/Sansome Street. These crosswalks were also found to have excess capacity in the 2013 EIS and are able to support the additional demand associated with this Project.

The amount of new pedestrian activity generated by passenger loading activity, (i.e. perpendicular to the sidewalk) is not expected to present substantial new conflicts and will also occur on the



Embarcadero, which has sufficient space for this activity. Furthermore, the project would not interfere with ADA accessibility to the site and adjoining areas. Existing ADA curb ramps are being retained and three ADA parking spaces are being added inside the Pier 31 bulkhead building. The existing curbside ADA parking space, which will be converted as part of the Project passenger loading zone, will be relocated to the curbside parking area just north of the Pier 33 bulkhead building.

Fort Baker

The Proposed Project would greatly enhance pedestrian connectivity, especially ADA-compliant pedestrian connections, at the Fort Baker site. At present, there are no formal pedestrian paths connecting the pier with the Discovery Museum or with Cavallo Point Lodge and Conference Center. The Proposed Project would create a new formal pedestrian path between the pier and the Discovery Museum loading zone. The project would also install ADA-compliant curb ramps at the access road intersection just north of East Road between Murray Circle and McReynolds Road, allowing direct ADA access from the pier to the Cavallo Point Lodge and Conference Center.

Due to the above, the Proposed Project would have a **less than significant** impact on pedestrian conditions.

BICYCLE IMPACTS

Pier 31 ½ The Proposed Project would relocate the existing multi-bike racks into the Pier 31 shed building. This relocation would not result in a potentially hazardous condition nor interfere with bicyclist accessibility to the site. No changes are proposed to bicycle travel lanes, and removal of the site driveway would reduce the number of driveway conflict points between bicycles and automobiles. The project is not expected to substantially increase overall traffic levels along these streets such that it could create potentially hazardous conditions for bicyclists or interfere with bicycle access or circulation to the site and adjoining areas. As shown in travel demand estimates in **Table 4**, the small increase in bicyclists (17 AM Peak Hour and 24 PM Peak Hour walk/bike trips), along with the modest increase in other modes of access, is not expected to result in potentially hazardous conditions or interfere with bicyclist accessibility to the site. The addition of the bollard-separated loading zone is expected to dramatically reduce potential conflicts between loading vehicles and northbound bicyclists. Loading vehicles will have a designated drop-off/pick-up space outside of the bike lane and potential conflict points between bicycles and loading vehicles will be reduced from infinite paths near the site to two (the entry and exit of the loading zone). Therefore,



the Proposed Project's impacts on bicycle conditions would be **less than significant**. Although the Proposed Project would have less-than-significant bicycle impacts, the NPS should consider Improvement Measure TR-4 to provide additional bike parking.

Fort Baker

The Proposed Project will not generate any new bicycle trips at the Fort Baker site, since ferry passengers will not be permitted to bring a bicycle on-board and rental bicycles are not available at the site. The new pedestrian pathway would potentially separate pedestrians from bicyclists, reducing the likelihood for conflicts. The Project would not create potentially hazardous conditions for cyclists nor interfere with bicycle accessibility in the area. Therefore, the impacts would be **less than significant**.

PARKING IMPACTS

Pier 31 ½

On-Site Parking

Under the Proposed Project, off-street parking for staff would be relocated into the interior of the Pier 31 shed building. Eight tandem parking spaces and three ADA accessible spaces would be provided. The ADA accessible spaces would be available to staff as well as visitors. Eight unrestricted spaces is a reduction from the current staff parking supply and would not accommodate the staff parking demand observed during the June 2017 site visit. During the mid-day period, 12 staff vehicles were parked in the on-site lot. The unmet staff parking demand would either move to off-site lots or shift to another mode of travel. This change does not create a substantial parking deficit and in the event that these staff continue to drive, their parking needs could be accommodated by the observed supply in nearby lots.

Off-Site Parking

As shown in **Table 7**, the Proposed Project would increase parking demand by approximately eight spaces during the peak utilization period (12:00PM – 3:00PM). The 2013 EIS found that there are 1,125 off-street and 690 on-street parking spots within one-quarter mile of Pier 31 ½. During the peak utilization period parking was, on average 80 percent occupied. Spot checks performed by Fehr & Peers in June 2017 of on-street and off-street parking showed that parking conditions have not substantially changed since the 2013 analysis. Given parking supply and observed utilization



rates, it appears that the added visitor and staff parking demand could be accommodated by parking facilities within one-quarter mile.

As discussed above, the Proposed Project would not result in a substantial parking deficit that could create major traffic hazards affecting traffic, transit, bicycles, or pedestrians. Therefore, impacts related to parking at Pier 31½ would be **less than significant**.

Additionally, Improvement Measures TR-1 through TR-4 would encourage staff and visitors to carpool, take transit, bicycle, and walk by providing additional information on these modes. This would reduce the number of people driving to access the site and alleviate nearby on-street and off-street parking demand caused by the Proposed Project. Thus, if implemented, these improvement measures would further reduce the Proposed Project's less-than-significant impacts on parking.

Fort Baker

The Proposed Project will not generate new vehicle trips to the Fort Baker site, and therefore does not generate new demand for parking. The Project would not result in a substantial parking deficit that could create major traffic hazards affecting vehicles, transit, bicycles, or pedestrians. Therefore, the impacts would be **less than significant**.

EMERGENCY VEHICLE IMPACTS

Pier 31 ½ & Fort Baker

Emergency access would remain unchanged from existing conditions. Emergency vehicles would continue to access the site from The Embarcadero, with the ability to drive onto the pedestrian plaza if necessary. The addition of the proposed loading zone would drastically reduce incidence of double-parked loading vehicles, which could potentially reduce conflicts with or delays caused to emergency vehicles. Changes to the Fort Baker site will make no adjustments to existing emergency vehicle access. The Proposed Project's impact to emergency vehicle access would be **less-than-significant**.



CONSTRUCTION IMPACTS

Pier 31 ½ & Fort Baker

The discussion of construction impacts is based on currently available information from the project sponsor and professional knowledge of typical construction practices in San Francisco. Prior to construction, as part of the construction application phase, the project sponsor and construction contractor(s) would be required to meet with Public Works and SFMTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles. The construction contractor would be required to meet the City of San Francisco's Regulations for Working in San Francisco Streets, (the Blue Book), including those regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required. In addition to the regulations in the Blue Book, the contractor would be responsible for complying with all city, state and federal codes, rules, and regulations.

Construction related activities would generally occur Monday through Friday. Construction is not anticipated to occur on Saturdays, Sundays or major legal holidays, but may occur as needed and if approved by the Department of Building Inspection (DBI). The hours of construction would be stipulated by DBI, and the contractor would be required to comply with the San Francisco Noise Ordinance and the Blue Book, including requirements to avoid peak hour construction activities on adjacent streets. Pier 31 ½ construction is anticipated to occur over 24 months, between November 2019 and 2022, with Fort Baker construction anticipated to begin in January 2023.

All construction-related activity would enter the site from the Proposed Project's frontage on the Embarcadero. Most trucks will approach the site from I-80 W or US-101 N, by using Embarcadero northbound. Trucks over three tons are restricted in much of the Marina and North Beach districts, including Bay Street from Laguna Street to Columbus Avenue. These restrictions make for a circuitous route from US-101 S that would discourage construction trucks from approaching the site from the north or west.

During construction, portions of Pier 31½ would be closed to visitors, although overall ferry service to Alcatraz Island is expected to remain open during the construction period. Closure of portions of Pier 31½ during construction may result in additional localized crowding, especially when ferries are loading and unloading. There may also be periods with reduced or delayed ferry service. However, it is anticipated that construction impacts on recreation would be minor and short-term,



and measures would be implemented to keep the site functioning as optimally as possible during construction.

All construction related activity is expected to be staged on the site itself and out of the roadway or pedestrian right-of-way. Most construction activity at the Fort Baker site will take place around the pier on barges and floats. The construction that does happen on land will be staged outside of key roadways and pedestrian pathways. The construction duration and magnitude would not result in substantial interference with transit, pedestrian, bicycle, or vehicle circulation and accessibility to adjoining areas thereby resulting in potentially hazardous conditions. Therefore, the Proposed Project's construction impacts related to transportation were determined to be **less-than-significant**.



CUMULATIVE CONDITIONS

This analysis includes an examination of the long-term effects of the Proposed Project in conjunction with other reasonably foreseeable projects or policy changes in the study area and changes to the Alcatraz Island facilities that could cumulatively affect the environment. As discussed in the Travel Demand Analysis section, due to management enhancements on Alcatraz Island, visitation to the embarkation site is expected to increase by approximately 20 percent in the future (horizon year 2035), from approximately 6,160 visitors today to approximately 7,400 visitors in 2035. Alcatraz Island improvements are independent of the Proposed Project improvements and would happen with or without the Proposed Project. The Proposed Project itself is expected to generate approximately 390 net new person trips on a daily basis. The various visitor volume estimates for these scenarios are presented in **Table 3**.

In addition to the Alcatraz on-island improvements, nearby transportation and development projects were researched for inclusion in the cumulative scenario. Our cumulative scenario included impacts of overall regional growth projections and took a focused look at the Pier 19-23 Temporary Flower Mart Relocation proposal. Other development proposals along the eastern waterfront, including at Seawall Lots 323 and 324 (Teatro ZinZanni), and Pier 48/Seawall Lot 337 (Mission Rock) were considered in our evaluation, but ultimately determined to be too far from Pier 31 ½ to have specific impacts. Instead, the additional trips generated by these projects were included in our general growth projections for the region. The Flower Mart is proposed for temporary relocation to Pier 19-23 from 2019-2023. This coincides with construction activity at Pier 31 ½ (2019-2021) but predates the construction completion date at Fort Baker. Therefore, the Temporary Flower Mart Relocation project would be concurrent with the Project only during the Proposed Project's construction phase and would be gone by the time the Proposed Project initiates ferry trips to Fort Baker. Combined effects of the Project construction and the operation of the Temporary Flower Mart Relocation are detailed in the Cumulative Construction Impacts section, below.

The following pedestrian, transit and bicycle changes were also included in the cumulative assessment:

PROPOSED CHANGES TO TRANSIT SERVICE

In March 2014, the SFMTA Board of Directors approved a set of recommendations designed to make Muni service more reliable, quicker, and more frequent. The recommendations emerged from



the Muni Forward Program, a review of the City's public transit system. These recommendations include new routes and route extensions, service-related capital improvements, more service on busy routes, designation of rapid transit routes, travel time reduction proposals on the rapid transit routes, and elimination or consolidation of certain routes or route segments with low ridership. As of August 2017, many of these improvements have been implemented and the Muni Forward Implementation Strategy anticipates that the service improvements will continue to be implemented through to 2020, pending resource availability. Muni Forward proposes the following change in the Proposed Project vicinity:

- **11 Downtown Connector:** a new local bus route would be added through Fisherman's Wharf, North Beach, the Financial District, and South of Market neighborhoods via North Point Street, Powell Street, Columbus Avenue, Sansome Street, 2nd Street, and Folsom Street. It is approved to replace **47 Van Ness** service near the site. A map of the route is included in **Appendix E**.

PROPOSED CHANGES TO BICYCLE AND PEDESTRIAN INFRASTRUCTURE

The Embarcadero Enhancement Project:

To create a safer, more comfortable and better organized Embarcadero, the City has developed a conceptual design for a new cycletrack along The Embarcadero. A cycletrack is a bicycle facility that is physically separated from moving or parked vehicles and pedestrians. It is expected to improve the safety and comfort of everyone traveling along The Embarcadero by creating clearly defined areas for pedestrians, cyclists, and drivers.

The design will include a separated cycletrack from 3rd Street to Powell and Jefferson streets. This 3.2-mile cycletrack would not only benefit people biking, but all users of The Embarcadero. Completion of a cycletrack would:

- Create dedicated and physically separated spaces for all modes of transportation, including Muni, vehicles, bicycles and pedestrians. Today, only Muni has a dedicated and physically separated space.
- Lessen the chaotic feeling of traveling along The Embarcadero by reducing the number of bicyclists mixing with pedestrians on the Promenade and vehicles in the roadway, as cyclists may choose to use the cycletrack rather than the Promenade.
- Facilitate more efficient and predictable use of curb space along the roadway. This can help facilitate the safe loading and unloading of goods and passengers.



The design is yet to be finalized, but the broad design generally proposes a two-way cycletrack on the water-side of the Embarcadero. This concept could require removal of on-street parking spaces along the Embarcadero. However, the project would largely retain water-side loading zones and staff from SFMTA confirm that the proposed project loading zone is consistent with the long-term draft vision for a two-way bikeway on the waterside of the Embarcadero (see **Appendix F**). The Port, who owns the curbspace and existing parking spaces, is also supportive of the design and proposal to remove parking (see **Appendix F**). The Embarcadero Enhancement Project also seeks to maintain vehicular capacity along Embarcadero by limiting the amount of vehicular lane reduction⁵ although there is a design alternative that would remove one northbound through lane in the vicinity of Pier 31 ½

Ford GoBike (bikeshare):

Under existing conditions, the station just south of the site at the Embarcadero/Sansome/Chestnut intersection is the northernmost station in San Francisco. The bikeshare system has ongoing, planned expansions through 2018 and beyond in San Francisco, San Jose, and the East Bay, and may expand further should usage and demand increase. Bike share can be used by both residents and visitors and the presence of this station, potential nearby future stations, and expansion of other stations has the potential to increase bicycle travel to and from Pier 31 ½.

2009 San Francisco Bike Plan:

A new Battery Street bike lane between Clay Street and The Embarcadero was identified in the 2009 San Francisco Bike Plan. This facility would provide those departing the site easier access to the Financial District and Market Street.

⁵ According to the SFMTA presentation for the Embarcadero Enhancement Project Open House, November 17, 2016. Materials accessed on August 23, 2017 at <https://www.sfmta.com/sites/default/files/projects/2016/Embarcadero%20Boards%20for%20Webpage.pdf>



CUMULATIVE IMPACTS

Cumulative VMT

Traffic impacts, including roadway congestion and VMT are all expected to increase with long-term increases to capacity on Alcatraz Island, as well as other long-term growth in the vicinity of the Proposed Project and the region. Although congestion may increase, VMT per capita is not likely to increase in the long term. The addition of vehicle trips resulting from the Proposed Project would be a small portion of these increases to congestion, and the VMT per capita at the Proposed Project site is unlikely to change substantially over time. The projected 2040 average daily VMT per employee for retail uses in TAZ 854 is 7.0 miles. This is approximately 59 percent below the projected 2040 regional average daily VMT per employee of 14.6. Given that the project site is located in an area where VMT is more than 15 percent below the projected 2040 regional average, the proposed project would not contribute considerably to any substantial cumulative increase in VMT.

Cumulative Traffic Hazards

No major traffic hazards are anticipated as a result of the cumulative growth, land use, and transportation changes in the Project vicinity. This is largely due the expectation that very few land use changes will be made, and therefore almost all background growth will come from the 20 percent increase in on-island capacity enhancement. Design for the Embarcadero Enhancement Project will alter the roadway directly in front of the Project site, but this is not expected to create any major traffic safety issues for Project visitors or other roadway users, including pedestrians, bicyclists, motorists, or transit users. No land use, development, or transportation projects are anticipated to change cumulative conditions at Fort Baker. Therefore, cumulative impacts to traffic circulation and queuing associated with long-term growth in the vicinity of the project site are expected to be **less than significant**.

Passenger Loading Impacts

Loading activity at the site is expected to increase with long-term increases to capacity on Alcatraz, unrelated to the Proposed Project. This increased loading activity would be accommodated by the proposed loading zone, which provides increased capacity of 200 percent above existing demand levels. The combination of the long-term plus Project enhancements to Alcatraz facilities would only increase demand by 26 percent (6 percent with Proposed Project and 20 percent with long-



term, on-island enhancements). Bicycle and loading conflict points are greatly minimized with this loading zone design and with future implementation of the Embarcadero Enhancement Project, which would separate bicyclists from the vehicular right-of-way, bicycle and passenger loading conflict points would be further reduced, if not entirely eliminated. No land use, development, or transportation projects are anticipated to change cumulative conditions at Fort Baker. For these reasons, the cumulative impact of the Proposed Project on passenger loading would be considered **less than significant**.

Commercial Loading Impacts

No changes are anticipated for commercial loading under the cumulative conditions. With implementation of the Embarcadero Enhancement Project, driveway access to the Pier 31 and Pier 33 sheds is expected to be retained. Commercial loading associated with proposed project under cumulative conditions would not create potentially hazardous traffic conditions or significant delays affecting traffic, transit, bicycles, or pedestrians under cumulative conditions. No land use, development, or transportation projects are anticipated to change cumulative conditions at Fort Baker. Therefore, the impacts of the Proposed Project on commercial loading would be **less than significant**.

Transit Impacts

Under cumulative conditions, it is expected that transit demand would rise due to long-term growth in the vicinity of the Project and the region. The E and F Muni lines cross directly in front of the project site and are the closest transit stations serving the project. This capacity discussion focuses on these two lines.

The E and F Muni lines fall under the Northeast screenline, which is projected to run at 72 percent capacity utilization during the PM peak under cumulative conditions, based on the latest figures for the downtown transit screenlines⁶. The contribution of transit riders by the Proposed Project to the Northeast screenline is not expected to reach the 85 percent capacity utilization threshold. Furthermore, cumulative conditions would not cause a substantial increase in delays or operating costs such that significant adverse impacts on transit service levels would occur. The E and F Muni lines will continue to run in the designated median right-of-way, where cumulative increases to vehicle, and pedestrian traffic will have little impact to transit operations. No land use, development,

⁶ San Francisco Planning Department, *Transit Data for Transportation Impact Studies*, May 2015



or transportation projects are anticipated to change cumulative conditions at Fort Baker. Therefore, the cumulative impacts of the Proposed Project to transit are anticipated to be **less than significant**.

Pedestrian Impacts

Under cumulative conditions, pedestrian volumes are expected to increase due to long-term growth in the vicinity of the project and the region. Although some pedestrian congestion could form due to the increase in pedestrians in the project area, the contribution to this congestion by the Proposed Project would be minimal. Because land uses are anticipated to change very little in the immediate vicinity, it is unlikely that pedestrian volumes would increase substantially over baseline levels. The Proposed Project and cumulative transportation network and land use changes will not result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas. No land use, development, or transportation projects are anticipated to change cumulative conditions at Fort Baker. Therefore, the cumulative impact of the Proposed Project on pedestrian impacts would be **less than significant**.

Bicycle Impacts

The combination of the Embarcadero Enhancement Project, the Battery Street bike lane, and the Ford GoBike expansion would further enhance the environment for cyclists and pedestrians. The Battery Street bike lane would add a travel option for visitors returning to the Financial District, and Ford GoBike helps lower logistical barriers for visitor bike rentals around the City. The Embarcadero Enhancement Project is anticipated to have the most direct impact on the Project Site. By separating cyclists from pedestrians, parked vehicles, and moving vehicles, all travel along the Embarcadero would become safer and more efficient. The bicycle/auto conflict points associated with passenger loading for the site would likely be alleviated, if not entirely resolved, by a designated cycletrack on the Embarcadero. It seems likely that these improvements would encourage more bicycle and pedestrian travel to the site, possibly reducing transit, driving, or drop-off mode shares for the project site in the long term. These projects are independent of the Proposed Project and would not introduce substantial new conflicts with bicycle circulation in the area, which would likely improve with the completion of these projects. Very little land use-related mode shift to bicycles is anticipated under cumulative conditions since land use in the area will remain largely consistent with current conditions. When combined with the Proposed Project, the transportation network changes described above would not create potentially hazardous conditions for bicyclists or



otherwise substantially interfere with bicycle accessibility to the site or adjoining areas. No land use, development, or transportation projects are anticipated to change cumulative conditions at Fort Baker. Therefore, the cumulative impact of the Proposed Project and surrounding transportation projects is **less than significant**.

Parking Impacts

Parking demand around the site is expected to increase with long-term increases to capacity on Alcatraz and other long-term development in the area. The increased parking demand resulting from the Proposed Project would be a small portion of this increase, however, and cumulative parking demand would not result in a substantial parking deficit that could create potentially hazardous conditions affecting traffic, transit, bicycles, or pedestrians. Land use in the area is expected to change very little and would therefore place no significant additional strain on the existing parking supply. No land use, development, or transportation projects are anticipated to change cumulative conditions at Fort Baker. Parking impacts under cumulative conditions would constitute a **less than significant impact**.

Emergency Vehicle Impacts

No changes are anticipated for emergency vehicle access or site access under the cumulative conditions. Roadway congestion is expected to increase due to long-term growth in the vicinity of the project and the region, which could cause delay for emergency vehicles in traversing the street network. This delay; however, would not result in inadequate emergency access to cause a significant effect to emergency access. Furthermore, the increased congestion resulting from the Proposed Project would be a small portion of this increase, and therefore the impacts would be **less than significant**.

Construction Impacts

The existing Project-related construction activities would not result in substantial interference with bicycle, pedestrian, or vehicle circulation and accessibility to adjoining areas thereby resulting in potentially hazardous conditions. Nor would this change under cumulative conditions. Two future projects are anticipated to result in nearby construction activity. The first is the Embarcadero Enhancement Project, which as yet does not have a construction schedule or plan available to the public. It will be important for the Park Service to coordinate their own construction efforts and regular operational practices with the City when the time comes to create a construction plan and timeline for the Embarcadero Enhancement Project.



The second is the San Francisco Flower Mart, which would temporarily relocate to Piers 19-23 from 2019 to 2023. This timeframe aligns with construction dates at Pier 31 ½, 2019 – 2021, but predates the completion of construction at Fort Baker and the initiation of new ferry service. Given the distance between Pier 31 ½ and Pier 23 (about one-third of a mile), it is unlikely that there would be any loading or construction conflicts between the sites. There is potential; however, for increased local vehicle traffic along the Embarcadero in the early morning, peak hours for trips to and from the Flower Mart. Because Pier 31 ½ construction is mostly anticipated to occur and be staged on the marginal wharf itself, this traffic is not expected to present hazards to the construction workers or to vehicle, bicycle, pedestrian or transit pass-by trips. Given current information cumulative construction impacts are anticipated to be **less than significant**.



RECOMMENDED IMPROVEMENT MEASURES

Although the City's Transportation Demand Management Program does not apply to the Proposed Project, the NPS could implement a suite of transportation demand management strategies to help manage vehicle circulation and passenger loading immediately surrounding the site. Measures were selected in part from the City's Transportation Demand Management Measures (**Appendix G**).

Improvement Measure TR-1: Provide Information on Active Transportation and Transit Routes to/from Embarkation Site

The NPS and affiliated concessioners would provide information regarding pedestrian, bicycle, and transit travel to/from the embarkation site to both employees and in advance to visitors. This may include maps designating preferred pedestrian, bicycle or transit routes to/from the site, maps indicating where City-provided bicycle facilities or transit stops are present, and time estimates for walking or biking to common destinations, such as BART stations, Union Square, Pier 39 or other tourist destinations. This information would be presented on the ticket and information websites as well as distributed via mail or email to all ticketed visitors. Some information is already presented on the NPS Alcatraz website and the websites of ticket concessioners, however, much of this information was found to be out of date and no bike and/or pedestrian route maps were provided.

Improvement Measure TR-2: Install Multimodal Wayfinding Kiosk and/or Signage

The NPS would provide multimodal wayfinding features in the form of a kiosk, maps, signs, or digital displays to help departing visitors make their next move. During site visits it was observed that passengers did not always leave the same way they arrived. Visitors who were dropped off could easily chose to depart on foot or vice versa. Often the biggest barrier to using transit or walking in an unfamiliar city is lack of information, which a wayfinding kiosk could help to address. The kiosk should be located near the site entrance/exit and could even be staffed by an NPS employee who could help give directions or answer questions about transit tickets and prices. This kiosk could be combined with the proposed information booth so long as transportation information was clearly advertised as part of the available services. Wayfinding signage could be placed at the site entrance with directional arrows indicating walk times to nearby destinations or transit stops. Examples signs might include: "7 minute walk to Pier 39," "10 minute walk to the Exploratorium," and "23 minute walk to Embarcadero BART."



Improvement Measure TR-3: Advertise Emergency Ride Home Program

Due to the reduction in available on-site employee parking, the NPS would advertise San Francisco's Emergency Ride Home program to its employees, for which all San Francisco employees are automatically eligible.⁷ The program provides a ride home in case of a personal or family emergency to all employees using a sustainable mode of travel to get to work. All NPS employees are eligible to request reimbursement for these rides through the San Francisco Department of the Environment.

Improvement Measure TR-4: Install Additional Bicycle Parking

Bicycle parking options on site were observed to be nearing capacity during site visits. To better accommodate bicycle parking demand and in anticipation of long-term Alcatraz Island improvements, NPS would provide additional rack capacity beyond its proposal to relocate the current racks into the Pier 31 shed building. This is a low cost improvement and would continue to facilitate easy bicycle travel to and from the Embarkation Site. It is important that this bicycle parking be well-advertised at the site entrance so that visitors know it exists.

⁷ This program applies on Port land as well as for all federal employees who work within the City boundaries.



CONCLUSION

The Proposed Project would increase daily visitation to the Embarkation Site from 6,160 to 6,550, which represents the added capacity of a third boat berth. This is 390 new daily trips spread across a daily ferry schedule that starts around 9:00 AM and returns the last passengers around 9:30 PM. The Project Site is well-positioned for easy access by transit, walking, and bicycling in addition to vehicular modes. The small number of net new trips and even smaller number of net new vehicular trips would not be substantial amongst current traffic volumes and would not change travel patterns or increase VMT per capita. As a result, the Project would result in a less-than-significant impact to existing transportation and circulation conditions.

The Proposed Project would generate additional parking demand of around eight spaces during peak utilization (12:00 PM – 3:00PM), which would be fully accommodated by the off-site parking supply within one-quarter mile. On-site parking for staff would be reduced, but that demand would also be accommodated by off-site parking should those staff members elect to continue driving to work.

Due to the door-to-door nature of TNC and taxi trips, passenger loading is currently concentrated in the bicycle lane directly in front of the project site and double-parked loading vehicles frequently experience conflicts with cyclists and automobiles. To minimize these auto and bicycle conflicts, the Proposed Project will add a 110-foot loading zone capable of accommodating peak period passenger-vehicle loading demand under Project and cumulative conditions. The loading zone will accommodate a queue of up to six vehicles at one time.

No significant changes are proposed for pedestrian or bicycle facilities and it is anticipated that the pedestrian experience would be improved by relocating access/egress from the on-site driveway. Although the Proposed Project would add a small number of transit passengers, this increase is small compared to total ridership and would result in less than significant transit impact.

Several feasible improvement measures were identified to improve site accessibility and shift mode share away from vehicular trips, including: providing transit and active transportation information and on-site wayfinding, marketing the emergency ride home program, and increasing bicycle parking capacity. The aforementioned improvement measures would further reduce these less-than-significant impacts to the nearby transportation network and to users of existing transportation facilities. Implementation of these measures would not be anticipated to cause any



additional transportation-related impacts and such measures would also maintain a high level of accessibility and safety for employees and visitors of the Proposed Project.