San Francisco Bay Conservation and Development Commission
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Application Summary
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Project Summary

Applicants: San Francisco Bay Area Water Emergency Transportation Authority and Port of San Francisco.

Location: The South Basin within the San Francisco Ferry Terminal area, south of the Ferry Building, north of Pier 14, and east of The Embarcadero and Herb Caen Way, including the open-water lagoon, Gate E, and Pier 2, in the City and County of San Francisco (Figure 1). The project site measures approximately 7.7 acres (334,500 square feet), and is located along an approximately 550 feet of Bay shoreline.

Figure 1: Project Area

Project: The 1989 Loma Prieta earthquake highlighted a need for emergency evacuation services and improved water public transit. The proposed project would expand ferry service at the Port of San Francisco's (Port) terminal, and create a regional hub for water transit consistent with both planned and historical uses of the area. In 1998, the first phase of water transit improvements were implemented at the project site, including Ferry Gate B at the North Basin. In 1999, the San Francisco Bay Area Water Emergency Transportation Authority (WETA) was created to plan and operate water transit service, and ensure such service meets emergency response needs in the region.

The proposed project would result in the development of two new ferry gates, associated berthing and docking facilities, boarding and circulation areas, and public access improvements (Exhibit A). The expanded operations would provide ferry service between San Francisco and Treasure Island, Antioch, Berkeley, Richmond, Martinez, Hercules, and Redwood City. The project would increase peak time vessel arrivals (from 14 vessels to 30 vessels), and accommodate more passengers (from 5,100 passengers to 19,160 passengers each weekday) through 2035. The proposed facilities would also serve as an emergency transit site.

As proposed, the project involves:

- The removal of 21,000 square feet of pile-supported fill and 786 cubic yards of solid fill in the form of Pier 2 (formerly supporting Sinbad's Restaurant), as required in the San Francisco Waterfront Special Area Plan and BCDC Permit No. 2012.001.06 for the America's Cup event;
- The relocation of Gate E, and addition of Gates F and G and associated vessel boarding and docking facilities, resulting in approximately 14,280 square feet, and approximately 80 cubic yards of solid, pile-supported, cantilevered, and floating fill;

- The improvement and expansion (by 30,800 square feet) of a shared passenger waiting, circulation, and public access area within the Southern Promenade area (to be renamed "East Bayside Promenade") [1], including the covering of an approximately 10,000-square-foot open water area to create the 15,950-square-foot public Embarcadero Plaza; and
- New (20,500 cubic yards) and maintenance (5,000 to 10,000 cubic yards every three to four years) dredging with disposal at the San Francisco Deep Ocean Disposal Site (SF-DODS) and as foundation material at the previously-authorized Montezuma Wetlands Restoration site (Exhibit E).

The proposed project also includes uses on the proposed Embarcadero Plaza, including expanding the Ferry Building farmer's market area and hosting other special events for an undetermined number of days, including set-up for walking or foot races, and support for major waterfront events.

The proposed project, occurring entirely within the Commission's Bay jurisdiction, would result in a net increase of approximately 28,000 square feet of pile-supported, cantilevered, and floating fill, and a net decrease of 227 cubic yards of solid fill from pile removal. To offset the net increase in Bay fill, the applicants would remove 28,150 square feet of fill as a part of the Terminal Four project located in the City of Richmond, Contra Costa County. Consequently, the proposed project would result in no new net fill.

In addition, the project would result in improvements to a 5,200-square-foot existing public access area located at the Southern Promenade, and expand public access by 30,800 square feet, including the approximately 15,950-square-foot Embarcadero Plaza. A pile-supported access walkway would also be constructed at south of the Agriculture Building, to remain in place until a future remodel of the Agriculture Building. The project would result in approximately 36,000 square feet of dedicated public access area to be shared with ferry

[1] BCDC Permit No. 1997.007.09 requires a 5,200-square-foot public access area within the Southern Promenade.

passengers and for emergency evacuation operations. As proposed, the 15,950-square-foot Embarcadero Plaza would also be used for weekly farmer's markets and periodic special events (Exhibit B).

Issues Raised: The staff believes that the application raises seven primary issues for the Commission to consider on the proposed project's consistency with the McAteer-Petris Act, the San Francisco Waterfront Special Area Plan (SAP), and the San Francisco Bay Plan (Bay Plan), including: (1) whether the project and project site meet the designated uses and policies of the SAP; (2) whether the project meets the laws and policies of fill requirements, including whether the proposed fill would be constructed in accordance with sound safety standards and include seismic instrumentation; (3) whether the project is consistent with the Bay Plan policies on transportation; (4) whether the project is consistent with Bay Plan policies on natural resources, including water quality, and fish, other aquatic organisms and wildlife; (5) whether the project is consistent with the Bay Plan policies on dredging and material disposal; (6) whether the project provides maximum feasible public access consistent with the project, and whether proposed use of the public access is consistent with SAP policies; and (7) whether the project is designed and would be managed to be resilient and adapt to impacts of sea level rise and flooding.

Project Description

Proposed Activities: The co-applicants, San Francisco Bay Area Water Emergency Transportation Authority and Port of San Francisco, propose the following activities at an approximately 7.7 acres (334,500 square feet) area of the Commission's Bay jurisdiction:

1. **Pier 2 Removal.** Remove approximately 21,000 square feet (0.48 acres) and 786 cubic yards of fill from Pier 2, specifically, a pile-supported deck and 350 12-to 18-inch-diameter piles, and four 36-inch-diameter piles.
2. **Gate E Relocation.** Relocate, use, and maintain in-kind Gate E at a location approximately 43 feet east of its existing location to align with proposed Gates F and G, by moving a total of eight 36-inch-diameter, 145- to 155-foot-long steel piles, and replacing a 1,260-square-foot gangway with a

1,470-square-foot gangway, which complies with the Americans with Disabilities Act (ADA) standards, resulting in a 210-square-foot (0.005 acre) net increase of cantilevered fill.

3. **Gates F & G Installation.** Install, use, and maintain in-kind passenger loading and vessel berthing facilities associated with Gates F and G, specifically: (a) two 5,670-square-foot floats (11,340 square feet total); (b) two 1,470-square-foot gangways (2,940 square feet total); (c) twenty four 36-inch-diameter, 140- to 150- foot-long steel piles; (d) thirty eight 14-inch-diameter, 64-foot-long fender piles and associated 12-inch-wide wood fender blocks; and (e) two 16- to 25-foot-high, 3,120-square-foot canopies (6,240 square feet total) on the floats and gangways—resulting in approximately 14,280 square feet (0.38 acres) of pile-supported, cantilevered, and floating fill, and approximately 80 cubic yards of solid fill.

4. **East Bayside Promenade and Gate Passenger Circulation/Waiting Area, Boarding Facilities, Embarcadero Plaza, and Public Access.**

   (a) Within an existing 5,200-square-foot (0.12 acre) public access area (required in BCDC Permit No. 1997.007.09), improve, raise, use, and maintain in-kind a portion of the proposed Embarcadero Plaza and East Bayside Promenade; and

   (b) Within a 30,800-square-foot area, including the filling of the open water lagoon, construct, use, and maintain in-kind dedicated public access consisting of the East Bayside Promenade, Embarcadero Plaza, and a cantilevered walkway located south of the Agriculture Building, resulting in approximately 34,660 square feet (0.80 acres) of pile-supported and cantilevered fill, and approximately 479 cubic yards of solid fill, by performing the following:

      (i) Install, use, and maintain in-kind 155 24-inch-diameter, and thirteen 36-inch-diameter, 135- to 155-foot-long steel piles;

      (ii) Construct a 1,470-square-foot cantilevered walkway located south of the Agriculture Building, connecting the East Bayside Promenade and Herb Caen Way;

      (iii) Construct, use, and maintain in-kind approximately 695 linear feet of amphitheater seating at the Embarcadero Plaza, three to four feet above the existing grade of Herb Caen Way;

      (iv) Install, use, and maintain in-kind a 684-foot-long, 42-inch-high guardrail with stainless steel horizontal bars and vertical supports spaced at approximately five feet on center at the eastern and southern shoreline edges of the East Bayside Promenade;

      (v) Install, use, and maintain in-kind a 350-foot-long, 42-inch-high guardrail between the Embarcadero Plaza and East Bayside Promenade, and the Agriculture Building;

(vi) Construct, use, and maintain in-kind a 684-foot-long, one-foot-high curb along the eastern and southern shoreline edges of the East Bayside Promenade;

(vii) Construct, use, and maintain in-kind two 17-foot-wide, 19.5-foot-high portals at Gates F and G with a stainless canopy roof and doors;

(viii) Construct, use, and maintain in-kind two 13.5-foot-high, 2,500-square-foot canopies (totaling 5,000 square feet) on the East Bayside Promenade, with fritted glass embedded with photovoltaic cells, lighting, and passenger signage, located between Gates E and F, and Gates F and G;

(ix) Install, use, and maintain in-kind forty six-foot-long benches;

(x) Install three sets of solar-powered waste and recycling stations, including three columnar pedestal ashtrays; and

(xi) Install three 22-foot-high surface mounted lighting structures.

5. **Dredging.** Conduct new dredging within an approximately 2.42 acre area at the approach areas to Gates F and G to 12.5 feet below Mean Lower Low Water (MLLW), with a two-foot overdredge depth allowance, resulting in approximately 20,479 cubic yards of material, and maintenance dredging every three to four years totaling 5,000 to 10,000 cubic yards of material, and dispose material outside of the Commission's jurisdiction (SF-DODS) or at a previously-permitted reuse site (Montezuma Wetlands Restoration Project).

6. **Extended Barge Mooring.** Moor two approximately 7,800-square-foot (totaling 15,600 square feet) construction-related barges for up to 24 months during proposed construction period.

7. **Temporary Facilities.** Place (and remove) a minor amount of fill, such as cantilevered gangways and similar access facilities, to serve as temporary access to the proposed emergency evacuation area (Embarcadero Plaza and East Bayside Promenade) following a seismic event, which results from the potential failure of The Embarcadero seawall and a disconnection between the proposed water transit facility and landside area.

Proposed Fill: The proposed project would occur entirely in the Commission's Bay jurisdiction resulting in a 28,150-square-foot net increase of pile-supported, cantilevered, and floating fill, and a 227 cubic yards net decrease of solid fill, as shown in Table 1 (below). The applicants would remove 28,150 square feet of fill as a part of the Terminal Four project in the City of Richmond, Contra Costa County and, thus, the proposed project would ultimately result in no new net fill.

Proposed Fill	Area (sf)	Area (acres)	Volume (cy)
Removal	-21,000	-0.48	-786
Gate E	210	0.005	0
Gates F and G	14,280	0.33	80
Boarding, Circulation, Public Access Area	34,660	0.80	479
Total New Fill	49,150	1.14	559
Net Change	28,150	0.66	-227

Table 1

Public Access: The project would result in improvements within a 5,200-square-foot existing access area, and the creation of 30,800 square feet of new public access area, with amenities including seating, lighting, and canopies, as shown in Table 2. All access would be permanently guaranteed and maintained by the Port of San Francisco (Exhibit C).

Type of Public Access	Square Feet	Acres
New	30,800	0.71
Improved	5,200	0.12
Total	36,000	0.83

Table 2

Schedule and Total Project Cost: As proposed, construction is scheduled to commence in March 2017 and be completed in January 2019. The estimated total project cost is approximately $65,000,000.

Staff Analysis

A. **Issues Raised**: The staff believes that the application raises seven primary issues for the Commission to consider on the proposed project's consistency with the McAteer-Petris Act, the SAP, and the Bay Plan, including: (1) whether the project and project site meet the designated uses and policies of the SAP; (2) whether the project meets the laws and policies of fill requirements, including whether the proposed fill would be constructed in accordance with sound safety standards and include seismic instrumentation; (3) whether the project is

consistent with the Bay Plan policies on transportation; (4) whether the project is consistent with Bay Plan policies on natural resources, including water quality, and fish, other aquatic organisms and wildlife; (5) whether the project is consistent with the Bay Plan policies on dredging and material disposal; (6) whether the proposed project provides maximum feasible public access consistent with the project, and whether proposed use of the public access is consistent with the SAP policies; and (7) whether the project is designed and would be managed to be resilient and adapt to impacts of sea level rise and flooding.

1. **Site Use**. The SAP Map No. 3 identifies the project site as an open water area where allowable uses include those that are consistent with the Public Trust Doctrine and the Port's Legislative Trust Grant, water transportation structures, and uses related to Bay-oriented Public Assembly and public access. The SAP Geographic Specific, Northeastern Waterfront Policy No. 1 requires removal of Pier 2 as part of the Ferry Terminal "Phase 2" development project. Policy No. 2 allows for "minor pile-supported or floating fill for water transportation uses, pile-supported fill for Bay-oriented assembly uses," "areas appropriate for additional ferry terminals," and "minor fill for public access to the Bay." The SAP does not contain specific policies regarding filling the lagoon. Other SAP policies on public access and views are discussed in sections below.

   Presently, Gate E, the Southern Promenade, the remaining portion of Pier 2, and lagoon are located at the project site. The Pier 2 shed (i.e., restaurant) was removed per BCDC Permit No. 2012.001.06, and the remaining pier is proposed for removal. As proposed, the fill activities would result in the expansion of a ferry terminal and water transit service, the creation of an emergency evacuation space, and the improvement and development of new public access – all Public Trust uses as determined by the California State Lands Commission, and also consistent with the Port's Legislative Trust Grant, which gives the Port primary land use jurisdiction over all development of property around the Ferry Building area under the Burton Act. The proposed project would result in a 28,150-square-foot net increase of pile-supported fill, and a 227 cubic yards net decrease of solid fill.

   The Commission should determine whether the project and project site meet the designated uses and policies of the SAP.

2. **Bay Fill.** Section 66605 of the McAteer-Petris Act provides, in part, that the Commission may allow fill in the Bay when the activity meets the following requirements:

   > (a) "the public benefits from fill must clearly exceed the public detriment from the loss of water areas;" (b) fill "should be limited to water-oriented uses" or "minor fill for improving public access to the Bay;" (c) fill in the Bay should be approved only when "no alternative upland location" is available; (d) fill should be "the minimum amount necessary to achieve the purpose of the fill;" (e) "the nature, location, and extent of any fill should be such that it will minimize harmful effects to the Bay area, such as, the reduction or impairment of the volume, surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment…;" (f) "fill [should] be

constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters;" and
(g) "fill should be authorized when the applicant has such valid title to the properties in question that he or she may fill them in the manner and for the uses to be approved."

a. **Public Benefit v. Public Detriment.** The proposed project involves the removal and placement of fill in the Bay, including the removal of the 21,000-square-foot Pier 2, and the filling of a 10,000-square-foot lagoon (covering the open water area with a deck) to create a pile-supported public access plaza and emergency evacuation space. Additional Bay fill is proposed for work associated with the improvement and expansion of the Southern Promenade, and the creation of Ferry Gates F and G. In total, the project would result in a net increase of 28,150 square feet of pile supported, cantilevered, and floating fill, and a net decrease of 227 cubic yards of solid fill. Additionally, the applicants propose to improve 5,200 square feet of required public access, and create 30,800 square feet of new required public access. The project also involves new and maintenance dredging, and the temporary extended mooring of construction-related barges.

   The existing ferry gates at the San Francisco Ferry Terminal serve up to 5,100 ferry passengers per weekday. The construction of new gates, boarding, and circulation areas would facilitate expanded service to and from San Francisco for up to 19,160 passengers per weekday, thereby reducing automobiles on the road. The project includes raising the existing public access space (required by BCDC Permit No. 1997.007.06) to be resilient to future sea level rise and flooding, and create 30,800 square feet of new public access. The 10,000-square-foot lagoon presently serves an open water area for fishing and viewing the Bay. It would be filled to create the 15,950-square-foot Embarcadero Plaza, which, according to the applicants, would also serve as an emergency queuing area to help evacuate "up to 7,200 people per hour" in cases of emergency. The elevation of the project site would connect to adjacent public access at the Ferry Building and along Herb Caen Way, and is designed to connect to the Agriculture Building when remodeled at a future date.

   The proposed project would occur entirely in the Commission's Bay jurisdiction resulting in a 28,150-square-foot net increase of pile-supported fill, and a 227 cubic yards net decrease of solid fill. The applicants would remove 28,150 square feet of fill as a part of the Terminal Four project in the City of Richmond, Contra Costa County and, thus, the proposed project would ultimately result in no new net fill.

b. **Water-Oriented Use and Minor Fill for Public Access.** Section 66605 of the McAteer Petris Act identifies public assembly as an allowable type of fill. The section does not specifically identify ferry terminals as a water-oriented use, but Bay Plan findings and policies on transportation recognize such facilities as an appropriate use of the Bay. Section 66605 also allows a "minor amount of fill" for public access. The fill associated with the proposed water transit project would create space to be shared by passengers, evacuees from the City of San Francisco in the event of an emer-

gency, and the general public. The proposed dedicated public access—approximately 36,000 square feet —would be offset by the removal of 28,150 square feet in the Bay (as discussed above).

c. **Upland Alternative.** The marine-based terminal would take advantage of its location on the Bay and constitutes a use for which there is no upland alternative. The proposed gates and public access areas are facilities that require and benefit from their over-water locations to achieve the overall project purpose, including water transportation and emergency evacuation via ferries.

d. **Minimum Amount of Fill.** As previously stated, the project would result in a net increase of approximately 28,150 square feet (0.66 acres) of Bay fill, and a net decrease of 227 cubic yards of solid fill.

According to the application, the purpose of the fill "is to improve water transit facilities…and to improve facilities to support emergency operations," and to enhance public access. Further, the "design of the project, including areas of additional fill for vessel docking, passenger queuing, and emergency coordination, is based on the anticipated water transit ridership, as well as emergency staging and evacuation needs" and, therefore, is the minimum necessary to meet the project purpose.

The SAP states, in part: "[t]he amount of new pile-supported fill…will be offset by removal of an equivalent amount of pile-supported fill elsewhere on the Northeastern Waterfront …" The applicants propose to remove a quantity of fill equal to the proposed net increase of fill resulting from the proposed water transit project, at a dilapidated terminal located in the City of Richmond, Contra Costa County. The fill removal project is part of the Terminal Four Wharf and Warehouse Removal Project managed by the California State Coastal Conservancy. The applicants explored options for fill removal in the City and County of San Francisco, but determined that no such opportunities are available. The additional 21,000 square feet of fill placed in the Bay would be offset by the removal of the Pier 2 structure, resulting in an equivalent amount of fill removed from the Bay as is being placed by the project.

e. **Minimizing Impacts.** According to the Final Environmental Impact Statement and Record of Decision/Environmental Impact Report for the Downtown San Francisco Ferry Terminal Expansion Project (FEIS/EIR), and the biological opinions on the project from the federal resource agencies, the Ferry Building area is a disturbed environment in comparison to other open water and less developed portions of Central San Francisco Bay. However, fill from the project would result in loss of benthic habitat, and shading from overwater structures. Aquatic species that may occur in the project area include the Sacramento River Winter-Run Chinook Salmon, the Central Valley Spring-Run Chinook Salmon, longfin smelt, steelhead salmon, and green sturgeon.

The applicants propose to remove piles by vibratory extraction. New piles would be installed using an impact hammer that would employ a "soft start" technique to give fish an opportunity to move out of the area. Impact hammers would be cushioned using a 12-inch-thick wood cushion, and only a single hammer would be operated at a time. During hammering, a bubble curtain or other device would be used to attenuate underwater sound levels.

During proposed dredging activity, a clamshell dredge would be used in the months of June through September, which coincides within the work windows established by the *Long Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region*. According to the National Marine Fisheries Service (NMFS), this time period would avoid the migration seasons of listed salmonids, and will not affect year-round green sturgeon. NMFS, the California Department of Fish and Wildlife (CDFW), and the Regional Water Quality Control Board (RWQCB) recommended additional measures to protect natural resources, and are summarized in the **Natural Resources** section below.

The project would result in no new net fill in San Francisco Bay. The design and arrangement of the proposed piles and facilities would not adversely affect oxygen levels, water circulation, or tidal interchange in the Bay. The FEIS/EIR concludes that the overall project impacts would be "less that significant or less than significant with the implementation of mitigation measures" (available at http://www.bcdc.ca.gov/cm/2016/1117WETA-SFFerry-EIS-EIR-Ex.pdf).

f. **Sound Safety Standards.** In addition to the provision on safety of fills contained in Section 66605 of the McAteer-Petris Act, the Bay Plan Policy No. 1 on Safety of Fills states, in part: "The Commission has appointed the Engineering Criteria Review Board [ECRB]…to: (a) establish and revise safety criteria for Bay fills …; (b) review … projects for the adequacy of their specific safety provisions, and make recommendations concerning these provisions …" Policy No. 2 states, in part: "… no fill or building should be constructed if hazards cannot be overcome adequately for the intended use in accordance with the criteria prescribed by the [ECRB or Board]."

The ECRB reviewed the proposed project on October 22, 2015, and focused on whether the design would be seismically sound, serve its purpose as an emergency evacuation facility, and be protected from future sea level rise and storm activity. The Board expressed concern over potential damage to concrete piles, stability of the joints, horizontal and vertical displacement of the pile-supported deck, and the capacity of the pile-supported structure, namely the proposed Embarcadero Plaza, to withstand the collapse of the seawall along The Embarcadero and serve the continued function as an emergency evacuation space.

The Board requested that the applicants provide the following information to better assess the design and engineering criteria for the project: (1) results of the Fast Lagragian Analysis of Continua (FLAC) analysis modeling the results of liquefaction impacts on the piles and overall structure due to a potential collapse of the seawall; (2) a displacement evaluation on the sliding joints; (3) adaptive approaches to sea

level rise; (4) information on emergency plans to access the structure were it to separate from the mainland due to liquefaction; and (5) a proposal for seismic instrumentation appropriate for the project, to be coordinated with the California Strong Motion Instrumentation Program run by the California Geological Survey.

On March 30, 2016, the ECRB considered information provided by the applicants. The purpose of the FLAC analysis was to estimate seismic deformation of the seawall and related impacts to the proposed ferry terminal structure[2]. The results of the FLAC analysis revealed the potential for liquefaction of upper sand layers previously thought to be safe. Consequently, the applicants recommended a change of the pile design to better withstand liquefaction and maintain the structural integrity of ferry terminal, including changes to pile layout, piling size, and other design features[3]. The deck structure was also modified from a cast-in-place pile cap and deck system, to a flat slab system comprising of an 18-inch thick slab that would provide flexibility for shifting piles in the event of displacement. Additionally, the joints between East Bayside Promenade, Embarcadero Plaza, and the Agriculture Building were removed, resulting in open waters between the Agriculture Building and the new ferry terminal.

The applicants stated that the proposed ferry terminal, including the plaza and passenger queuing areas at the site, would be designed to meet "Essential Facility" standards to support the queuing and circulation needs in the event of an emergency and evacuation.[4] Because the FLAC analysis showed that the deck would not be accessible following a major seismic event, the Board requested information on emergency plans to access and evacuate the entire structure were it to separate from the mainland. Pursuant to this inquiry, the applicants presented the Port's Emergency Operations Manual to Commission staff, which states that the Port will "immediately conduct a rapid assessment of damage", and arrange for "construction of temporary access between landside and terminal areas. Such temporary access improvements may include installation, in-kind maintenance, and removal of bridging components or other structures to provide pedestrian egress and access to the ferry terminal, and the provision of temporary electrical power for the use of the terminal facilities such as lighting and float hydraulic platforms."

The Bay Plan Policy No. 3 on Safety of Fills states: "[t]o provide vitally needed information on the effects of earthquakes on all kinds of soils, installation of strong-motion seismographs should be required on all future major land fills. In addition, the Commission encourages installation of strong-motion seismographs in other developments on problem soils, and in other areas recommended by the U.S. Geological Survey, for purposes of data comparison and evaluation." On

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[2] The FLAC analysis is also used to evaluate potential impacts of deformation of the soil mass, settlement behind and of the seawall, differential movement of the proposed structure, and the loads that could possibly be induced onto the proposed piles of the structure due to moving ground.

[3] The location of the piles was also improved by increasing the spans, incorporating cantilevering sections at the edges of the proposed plaza next to the seawall, the BART deck, and the Agriculture Building, and increasing the size of the piles closest to the seawall to 30-inch-diameter, so they would better withstand load stresses.

[4] Essential facilities are buildings and structures intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquakes, as defined by the California Building Code 2010 and the International Building Code 2009.

October 22, 2015, the Board requested a proposal for seismic instrumentation appropriate for the project, to be coordinated with the California Strong Motion Instrumentation Program run by the California Geological Survey. The Board reiterated its request during additional review on March 30, 2016. As of this summary, the applicants have not proposed to prepare a plan or install seismic instrumentation at the proposed facility.

According to the applicants, the Federal Emergency Management Agency (FEMA) Total Water Level estimates for the project site are 11.4 feet NAVD88, and the future sea level rise projections are 14.5 feet NAVD (by 2068)[5]. The proposed passenger and boarding areas, and public access, would be built at an elevation of 14.5 feet NAVD88. The ferry gates would float with the tides. Therefore, the proposed project, including all facilities, would not be subject to future sea level rise and associated flooding over the life of the project. In order to mitigate any impacts that could arise from rising sea levels not currently anticipated, the applicants propose a one-foot-high curb to be built at the East Bayside promenade perimeter of the circulation and public access areas, to an elevation of 15.5 feet NAVD88. In the event the terminal and public access remain beyond the intended life of 50 years (through 2068), the applicants have prepared sea level rise estimates for the year 2100, up to 15.5 feet NAVD (Exhibit G). Under that scenario, sea level rise would exceed the proposed deck and curb elevation of 15.5 feet, in which case the perimeter curb could be raised to 17 feet NAVD88.

Following review on March 30, 2016, the Board declared that the applicant had addressed the comments raised by the ECRB at the last October 22, 2015 meeting, and determined that the engineering criteria used to design the proposed project met desired standards. As proposed, the piles and decking would be strong enough to withstand a large seismic event, would not be negatively affected by liquefaction behind the seawall, and the project provides measures to prevent damage from sea level rise and storm activity. As designed, the project would also be able to serve its purpose as an essential facility and emergency evacuation structure.

Since the proposed project is deemed a substantial Bay fill development with significant safety implications, the Board recommended on March 30, 2016, that all analyses and documents be kept in the public record. All documents are available for public review in the project file, as required by the Public Records Act.

g. **Valid Title.** In May 2015, WETA and the Port entered into a Memorandum of Understanding (MOU) that outlines roles and responsibilities for the operation and maintenance of the proposed project. The MOU states that the Port has primary land use jurisdiction over all development of property around the Ferry Building area under the Burton Act, and that WETA is permitted to operate ferry services under License Agreement #14955 between WETA and the Port. The Port and WETA are

[5] National Research Council, 2012

coordinating the proposed project, and will enter into a Disposition and Development Agreement, as well as a new license or lease agreement for continued WETA operations at the new proposed ferry facilities.

The Commission should determine whether the project meets the laws and policies of fill requirements, including: whether the public benefits associated with the fill for the project exceed the public detriment from the placement of that fill; whether the project is a water-oriented use and constitutes minor fill for public access; whether the fill is the minimum amount necessary; whether the proposed fill minimizes harmful effects to the Bay; whether the proposed fill would be constructed in accordance with sound safety standards and includes seismic instrumentation; and whether the applicants have a valid title for the project site.

3. **Transportation**. The SAP Geographic-Specific Policies for the Northeastern Waterfront Policies on Transportation and Parking, Policy No. 2 states: "[t]o minimize traffic impacts on the waterfront, expansion of the water transportation system should be accommodated by identifying areas where new terminals and landside facilities can be constructed." In addition, the Bay Plan Transportation Policy No. 5 states, in part, that ferry terminals should be sited, wherever possible, "near higher density, mixed-use development served by public transit."

   The proposed project would expand ferry service to and from San Francisco at an area designated in the SAP for expanded use, and, consequently, enhance public transit alternatives in the immediate vicinity of the project and for the region as whole. Additionally, the project is located near or adjacent to other transit alternatives, including the San Francisco Municipal Railway (MUNI), Bay Area Rapid Transit (BART), Caltrain, bicycle and pedestrian routes, and the Transbay Terminal.

   The Commission should consider whether the proposed project would be consistent with SAP and Bay Plan policies on transportation.

4. **Natural Resources.** In addition to Section 66605(d) of the McAteer-Petris Act concerning the project's effects on resources, the Bay Plan Policy No. 1 on Fish, Other Aquatic Organisms and Wildlife states, in part: "[t]o assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased." Policy No. 2 states, in part: "[s]pecific habitats that are needed to conserve, increase or prevent the extinction of any native species, species threatened or endangered … should be protected..." Policy No. 4 states, in part: "[t]he Commission should: (a) Consult with [CDFW] and the U.S. Fish and Wildlife Service [USFWS] or [NMFS] whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species; (b) Not authorize projects that would result in the "taking" of any plant, fish, other aquatic organism or wildlife species listed as endangered or threatened … unless the project applicant has obtained the appropriate "take" authorizations …; and (c) Give appropriate consideration to the recommendations of [CDFW], [NMFS] or the [USFWS] in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat."

Bay Plan Policy No. 2 on Water Quality states: “Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the [RWQCB’s] Water Quality Control Plan, San Francisco Bay Basin and should be protected from all harmful or potentially harmful pollutants. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the [RWQCB], should be the basis for carrying out the Commission's water quality responsibilities.” Policy No. 3 states, in part: “New projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay…” Bay Plan Policy No. 1 on Water Surface Area and Volume states, in part: “The surface area of the Bay and the local volume of water should be kept as large as possible in order to maximize oxygen interchange, vigorous circulation, and effective tidal action.”

Bay Plan Policy No. 1 on Subtidal Areas states: “Any proposed filling or dredging project in a subtidal area should be thoroughly evaluated to determine the local and Bay-wide effects of the project on: (a) the possible introduction or spread of invasive species; (b) tidal hydrology and sediment movement; (c) fish, other aquatic organisms and wildlife; (d) aquatic plants; and (e) the Bay's bathymetry. Projects in subtidal areas should be designed to minimize and, if feasible, avoid any harmful effects.”

According to the permit application, the project area has been disturbed by human-related activities, and is proposed for various fill activities, including the construction of expanded ferry vessel and passenger facilities, public access, and emergency evacuation space. Additionally, initial and maintenance dredging is proposed with disposal of material occurring at the ocean and at a wetland restoration site. Benthic habitat at the project site would be lost or affected.

Aquatic species potentially present at the site are the threatened Central California Coast (CCC) steelhead, Central Valley (CV) steelhead, spring-run Chinook salmon, longfin smelt and southern distinct population segment (DPS) green sturgeon, and the endangered Sacramento River winter-run Chinook salmon. The area is also designated as critical habitat for Sacramento River winter-run Chinook salmon, CCC steelhead, and southern DPS sturgeon.

On June 30, 2014, pursuant to Section 7 of the Endangered Species Act (ESA), and the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act, NMFS issued a Biological Opinion (B.O.) and found the proposed project could result in a take (i.e., mortality and/or injury) of threatened sturgeon from pile driving, dredging, turbidity, contaminants, and sound. Additionally, NMFS found that the project would adversely affect EFH for federally-managed species, including groundfish and salmon, from increased noise and turbidity, exposure to contaminated sediments, disturbance of benthic habitat, increased shading, and potential introduction of invasive species from pile-driving and dredging. NMFS determined that the anticipated take of listed threatened or endangered species would be “very small.”

The applicants propose to offset potential impacts of shaded and solid fill by removing pilings and decking material at the Terminal Four Wharf and Warehouse Removal Project in the City of Richmond, a project managed by the California State Coastal Conservancy. Since habitat at the project site is degraded, NMFS expects fill removal elsewhere in the Bay to fully compensate for any loss. To minimize impacts of turbidity and sediment-associated contaminants, measures would be implemented to contain material and reduce distribution into the water column, such as silt curtains, and timing activities to periods of low tide. NMFS expects that given high current velocities in the Bay, minor levels of suspended materials would quickly disperse from the project site with tidal circulation.

Pile removal activities would use direct pull or vibratory extraction. Piles that cannot be removed entirely would be cut to at least two feet below the mudline. Pile driving would be restricted to the period of June 1 and November 3, and an impact hammer would employ a “soft start” technique to give fish an opportunity to move out of the area. Impact hammers would be cushioned using a 12-inch-thick wood cushion, and only a single hammer would be operated at a time. During hammering, a bubble curtain or other device would be used to attenuate underwater sound levels. When feasible, vibratory hammers would be used to reduce noises.

NMFS has determined that it is unlikely individual fish would occur within the project site, as construction activities would startle fish away. NMFS expects the number of green sturgeon exposed to noise to be small due to the short duration of the pile-driving period, the area of effect is small, and the abundance of green sturgeon in the area is low. NMFS expects the site would become available for listed fish species once pile driving and removal are completed.

The proposed dredging includes approximately 20,479 cubic yards of new material at area of proposed Gates F and G, and subsequent maintenance dredging of approximately 5,000 to 10,000 cubic yards every three to four years following project construction. The applicants would use a clamshell dredge from June to September, conforming to the work windows established by the *LTMS for the Placement of Dredged Material in the San Francisco Bay Region*. NMFS does not anticipate turbidity levels from dredging to result in harm or injury to green sturgeon. Additionally, salmonids and sturgeon are expected to spend very little time in the action area due to the degradation of critical habitat at the project site; therefore, bioaccumulation of contaminants is expected to be insignificant. According to NMFS, work conducted between June 1 and November 30 would avoid the migration seasons of listed salmonids, and not affect year-round green sturgeon, minimizing impacts from pile removal, pile driving, and dredging.

NMFS recommended measures to be incorporated into the proposed project construction including: the development of hydroacoustic and biological monitoring plans that provide real-time data to NMFS; preservation of any listed species mortalities observed at the site to determine cause of death; and the preparation of a report (one year following construction), which identifies measures taken to minimize effects on species of concern, and the number of fish killed during construction. NMFS also recommended

that the applicants provide funding for salmonid and sturgeon restoration, and funding for monitoring and eradication of invasive species in the Bay. Incorporation of the measures, as recommended by NMFS, would not likely jeopardize the continued existence of the above-identified species, nor adversely modify or destroy critical habitat.

The project's overall increase of fill in San Francisco Bay would be negligible in comparison to the total surface area of San Francisco Bay (approximately 0.66 acres of fill compared to approximately 327,000 acres of open waters in San Francisco Bay). The project proposes no overall new increase of fill into San Francisco Bay, when taking into account proposed fill removal, which combined with the design and arrangement of the piles and facilities, and would not adversely affect oxygen levels, water circulation, or tidal interchange in San Francisco Bay.

The Ferry Terminal area is suitable for the invasive species *Undaria*. However, the area does not currently support submerged aquatic vegetation. Increased vessel traffic from the construction and additional ferries may help spread *Undaria.* WETA dry-docks all vessels every year for hull cleaning and refinishing. Invasive species are not anticipated to spread via vessels or ferries.

On July 9, 2015, CDFW issued Incidental Take Permit (ITP) No. 2081-2015-013-07 for the proposed project. The ITP covered the endangered Sacramento River winter-run Chinook salmon, the threatened CV spring-run Chinook salmon, and the longfin smelt. CDFW expects incidental take of individuals of the covered species from pile driving activities, noise, contaminated sediments, impacts from spills of pollutants, and permanent habitat loss.

CDFW implemented the following conditions to mitigate incidental take of covered species, among other things: (1) presence of a qualified biologist; (2) education of all persons working on the project area regarding covered species; (3) cleanup of hazardous wastes; (4) removal of all debris and refuse; (5) compliance monitoring, including a monthly compliance report with all conditions of the ITP; (6) annual status reports, including a final mitigation report once the project is completed; (7) notification of take or injury of covered species, including a report on cause of death and other pertinent information; and (8) purchase 0.30 acres of covered species credits from a CDFW-approved mitigation or conservation bank.

To prevent and contain construction-related contaminants from adversely affecting water quality, the applicants propose to prepare a Spill Prevention Control and Countermeasure (SPCC) plan to address emergency cleanup of hazardous materials. Fueling of land and marine-based equipment would be conducted in accordance with procedures in the SPCC. Equipment used would be in good condition, inspected daily, and serviced off-site if maintenance is needed. Any leaks would be cleaned up, and not allowed to enter the water, if possible. All construction materials, wastes, etc., would be removed from site and transported to an authorized disposal area outside the Commission's jurisdiction.

On September 23, 2016, the RWQCB issued a water quality certification for the proposed project. In considering the project, the RWQCB found that the proposed project would result in solid fill and shading of open water, which can potentially alter benthic habitats and the primary physical processes, including depth, substrate type, wave energy, and light in the project site. Additionally, water quality may be impacted from the use of diesel-powdered equipment, spills, discharges of debris, in-water construction, dredging, and stormwater.

The water quality certification is conditioned to require the applicants to, among other things: (1) prevent site pollution by prohibiting vehicular access and parking on the Embarcadero Plaza, prohibit smoking in the entire circulation and public access areas, and instituting twice weekly cleaning of all areas, as well as after special events and activities; (2) treat stormwater by installing eighteen shallow-depth media filters to prevent runoff into the Bay, install a bioretention planter at the northeast edge of the plaza, and implement best management practices (BMPs) during construction and dredging activities; (3) submit a final mitigation report once construction is complete; (4) install piles consisting of inert materials, such as steel and concrete; (5) allow concrete to completely cure for a minimum of 28 days before it comes into contact with the water, or be treated with a CDFW approved sealant; and (6) submit a final construction completion report within 30 days of construction completion.

CDFW and the RWQCB required several other conditions that are identical to those required by NMFS. The FEIS/EIR for the project determined impacts "to be less that significant or less than significant with the implementation of mitigation measures" (available at http://www.bcdc.ca.gov/cm/2016/1117WETA-SFFerry-EIS-EIR-Ex.pdf). The applicants agreed to incorporate all resource agency conditions into the proposed project.

The Commission should determine whether the proposed project, with the incorporation of the resource agency's recommendations and conditions, would be consistent with the Bay Plan policies on natural resources.

5. **Dredging.** The Bay Plan Transportation Policy No. 5 states, in part: "ferry terminals should be sited at locations that are near navigable channels…" Bay Plan policies No. 1 and 2 regarding dredging activities state, in part: "dredging and dredged material disposal should be conducted in an environmentally and economically sound manner" and "…dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use…; (b) the materials to be dredged meet the water quality requirements of the [RWQCB]; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions established by [CDFW], the [USFWS] and/or [NMFS]…; (d) the siting and design of the project will result in the minimum dredging volume necessary for the project; and (e) the materials would be disposed of in accordance with Policy 3." Policy 3 states, in part: if feasible, material should "…be reused or disposed outside the Bay" unless infeasible in which case the Commission must find: "(a) the volume to be disposed is consistent with applicable dredger disposal allocations and disposal site limits adopted by the Commission by regulation; (b) disposal would be at a site desig-

nated by the Commission; (c) the quality of the material disposed of is consistent with the advice of the [RWQCB] and the inter-agency Dredged Material Management Office [DMMO]; and (d) the period of disposal is consistent with the advice of the [CDFW], the [USFWS] and/or [NMFS]."

The Ferry Building area has served as a navigation area for nearly a century, and continues to serve as a navigation area for water transportation services. The proposed project would expand ferry services at the Ferry Building, which is located near the San Francisco Bay Main Ship Channel.

As proposed, an initial volume of 20,479 cubic yards of new sediment would be dredged at the site within a 2.42 acre footprint (Exhibit E). Every three to four years following the initial dredging episode, approximately 5,000 to 10,000 cubic yards of material would be dredged to maintain necessary navigation depths at the site. WETA states that side-loading vessels, such as the ones used at the Ferry Building area, require a depth of -12.5 feet MLLW on the approach and berthing area. Dredging would be limited to a depth of -12.5 feet MLLW, plus an additional two-foot overdredge depth. According to the applicants, the amount of new dredged material is the minimum necessary to deepen the site of proposed new gates ferry berthing area to safely accommodate the drafts of the ferries.

The proposed dredging would serve a water-oriented use. On September 7, 2016, the DMMO completed its review of the sediment test results.[6] The DMMO recommended that the initial and maintenance sediment be disposed at the SF-DODS, and used as foundation material for the Montezuma Wetlands Restoration Project in the Primary Management Area of the Suisun Marsh, Solano County, which was approved in BCDC Permit No. 1998.014.05md. On September 23, 2016, the RWQCB issued a water quality certification for the proposed dredging activities. The certification requires the following measures to be implemented: (1) no overflow or decant water shall be discharged from any barge at anytime; (2) no dredge material shall be permitted to overflow, leak, or spill from barges, bins, or dump scows during transportation from the dredging site to the placement site; (3) provide a post-dredge report within 60 days of completion of dredging operations; and (4) dredging shall be limited to the designated work windows of June 1 to November 30.

Further, in reviewing the project and its resulting opinion, NMFS recommended that the dredging occur within the environmental work windows—with which the applicants would comply—and, thus, the activity is not likely to jeopardize the continued existence of endangered or threatened species, as listed in the NMFS B.O., nor adversely modify or destroy critical habitat for listed species. In addition, NMFS recommended other measures be implemented, as summarized in the **Natural Resources** section above.

The Commission should consider whether the proposed dredging would be consistent with the Bay Plan's dredging policies.

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[6] "Sampling and Analysis Report Downtown San Francisco Ferry Terminal Expansion Project South Basin Improvements," dated July 2016, and "Supplemental Analyses for Sampling and Analysis Report for the Downtown San Francisco Ferry Terminal Expansion Project – South Basin Improvements," dated August 31, 2016.

6. **Public Access.** Section 66602 of the McAteer-Petris Act states, in part: "public access to the shoreline and waters of the Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided." Section 66605 of the McAteer-Petris Act also states partly that a "minor amount of fill" for public access is allowable.

   The SAP General Policy No. 6(a) states (p. 8), in part: "…maximum feasible public access should be provided in conjunction with any development…. Public access should be located at ground or platform level, but minor variations in elevation intended to enhance design of open space may be permitted. Public access should also be open to the sky, although some covering may be allowed if it serves the public areas and does not support structures. Particular attention should be given to the provision of perimeter public access along the platform edge. Other uses may extend to the platform edge subject to the following conditions: i) Such uses should enhance the total design of the project, should serve to make the public access more interesting, and should not divert the public way along more than twenty percent of the total platform edge."

   The SAP Geographic Specific - Northeastern Waterfront Policies (p. 26-29) on open water areas allows fill for public access, and Bay-oriented commercial recreation and public assembly. Further, SAP Geographic Specific - Northeastern Waterfront policies on public access (p. 32-38) state, in part, "…maximum feasible public access, consistent with the project [should be provided]." Policy No. 1 states: "[p]ublic access should be provided free of charge…and…provide direct connections to the Bay, both physical and visual." Policy No. 2 states: "[p]ublic access should generally be accessible at any time…" Policy No. 3 states: "[p]ublic access should emphasize passive recreation and focus on its proximity to the Bay and on the views and unique experiences that nearness to the Bay affords." Policy 10(a) states: On-pier public access areas should be located to "take advantage of…views….They should incorporate unique and special amenities that draw the public to them, including cultural expression, (e.g., public art, event programming or unique views)." Policy 10c states, in part: "…proposed dedicated public access on a pier that exceeds the maximum public access requirement, consideration may be given to permitting private uses that extent to the platform edge, subject to the following conditions…: such use should enhance the total design of the project, be oriented toward and take advantage of the location at the water's edge, serve to make the public access more interesting, and should not divert the public right-of-way along more than 20 percent of the total platform edge." Policy No. 11 states: "The longevity of public access improvements required in permits issued pursuant to this plan should be commensurate with the longevity of the development improvements for which they are required." Policy No. 13, provides, in part, that public access areas should be designed to include: durable and area-compatible paving material; hand rails that maximize visual access to the Bay for all visitors, including those in wheelchairs, with "a top rail that is comfortable to lean on;" lighting, seating, trash and recycling containers, signage, restrooms, and sheltered from the micro-climate; a maintenance plan with a responsible party; a plan to manage ferry queues to allow "continuous shoreline public access…and no permanent or semi-permanent structures prevent[ing] access...."

The Bay Plan Transportation Policy No. 4 states, in part: "transportation projects on the Bay shoreline…should include pedestrian and bicycle paths that will either be of the Bay Trail or connect the Bay Trail with other regional and community trails." The Bay Plan Public Access Policy No. 12 states: "The Design Review Board should advise the Commission regarding the adequacy of the public access proposed." Further, Policy No. 5 states, in part: "Public access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding." Policy No. 6 states, in part: "…public access provided as a condition of development should either be required to remain viable in the event of future sea level rise or flooding, or equivalent access consistent with the project should be provided nearby."

a. **Existing Conditions and Public Access.** The San Francisco Ferry Building was originally completed in 1898 and, until the completion of the San Francisco-Oakland Bay Bridge and Golden Gate Bridge, served as a bustling transit terminal and public space. In the 1950s, the building was adapted for other uses (e.g., office) and the public spaces were significantly altered. Following the Loma Prieta earthquake and the removal of the Embarcadero Freeway, the building and terminal underwent a major renovation and transformation. Since reopening in 2002, the terminal has continued to serve as a transit hub and office space, while also becoming an increasingly popular landmark and year-round destination for tourists and residents throughout the region. According to the Port, regular events, such as the Saturday farmer's market (8:00 a.m. to 2:00 p.m), bring an average of 23,000 visitors to the site (Exhibit G). The terminal's commercial success has led to the revitalization of the San Francisco waterfront, and along with it visitors throughout the day, every day of the week.

   In 1998, BCDC Permit No. 1997.007.09 authorized the Port to upgrade the Ferry Building area, and allowed and required the construction of a 5,200-square-foot public access area at the Southern Promenade located at the proposed project site (Exhibit A). In 2012, BCDC Permit No. 2012.001.06 authorized the America's Cup event, which required and authorized—consistent with SAP policy—the removal of the Pier 2 shed (a.k.a, the former Sinbad's Restaurant), leaving the supporting platform in place for interim public access and eventual removal to make room for the ferry terminal expansion.

b. **Proposed Public Access.** As proposed, the project includes the following public access facilities and improvements: the 11,610-square-foot Southern Promenade, renamed "East Bayside Promenade," [7] including a 42-inch-high guardrail at the eastern and southern edges, two 13.5-foot-high canopied passenger waiting and seating areas adjacent to the ferry gates, and an approximately 578-square-foot Bay viewing area at the southern terminus of the promenade; a 1,470-square-foot pile-supported walkway located south of the Agriculture Building; and the "Embarcadero

[7] The proposed East Bayside Promenade includes a 5,200-square-foot area, which is already required dedicated public access in BCDC Permit No. 1997.007.09. The proposed project includes improvements to this part of the promenade.

Plaza" with decorative paving, amphitheater seating, lighting, and a 42-inch-high guardrail along the eastern edge—a 15,950-square-foot public space inclusive of a 10,000-square-foot area constructed over an existing open water lagoon (Exhibit C).

The proposed East Bayside Promenade would serve the dual purpose of providing perimeter access to the public for walking along, sitting beside, and viewing the Bay, and a waiting and queuing area for ferry passengers. The proposed ferry facilities are projected to accommodate up to 19,160 passengers per weekday by 2035, including up to 6,000 passengers in the peak morning and late afternoon commute hours. The applicants propose to organize the queues in a manner that minimizes conflict with general public visitors, with on-site informational signage and ferry staff; no permanent structures to assist with queue management are proposed. The proposed public walkway located south of the Agriculture Building would connect Herb Caen Way to a bulb-shaped platform at the southern terminus of the East Bayside Promenade where the public could view and enjoy the Bay and partake in other recreational activities, such as fishing.

The proposed 15,950-square-foot Embarcadero Plaza would provide an open space located immediately adjacent to the ferry gate area and Herb Caen Way, and just south of the Ferry Building. The plaza would be open to all: ferry passengers passing to and from the gates, the general public enjoying meals purchased from nearby vendors and at the adjacent Saturday and weekday (Tuesday and Thursday, 10:00 a.m. to 2:00 p.m.) farmer's market, visitors admiring the San Francisco-Oakland Bay Bridge, Yerba Buena Island, and the distant hills, and others in search of respite from adjacent more active areas. The Embarcadero Plaza would also serve as an evacuation space "for up to 7,200 ferry passengers per hour" in the case of an emergency, such as a significant seismic event.

Additionally, the applicants propose to hold the farmer's market within a 10,000-square-foot section of the Embarcadero Plaza on Saturdays, Tuesdays, and Thursdays for a six-hour period excluding non-commute hours and, during other times of the year, for special events, such as a foot race or a waterfront spectacle, such as the annual fleet week or July 4 display. As proposed, the Embarcadero Plaza would be used a total of 156 days per year as a farmer's market and a (currently) undetermined number of days for special events. According to the applicants, if an emergency arose and the plaza was needed for evacuation purposes while farmer's market facilities were in place, "all fixtures and activities [would be removed] within one hour," in order to serve as an evacuation space.

The proposed public access facilities would comply with the Americans with Disabilities Act standards. In addition, specific amenities, such as handrails and ferry shelters are designed to maximize their transparency and minimize view impacts. The applicants would not use the site for commercial advertisements, but would include informational and way-finding passenger signage. The project does not include parking for vehicles, but is located near municipal and regional transit

connections, including MUNI and BART. Public restrooms are available in the adjacent Ferry Building. The public access would be dedicated for as long as the project remains in place, and would be maintained by the Port.

In total, the applicants propose to improve 5,200 square feet (0.12 acres) of dedicated existing public access requirements in BCDC Permit No. 1997.007.09, and construct 30,800 square feet (0.71 acres) of new dedicated public access, totaling 36,000 square feet (0.83 acres) of dedicated public access. As proposed, the area of the Embarcadero Plaza occupied by farmer's market and special event infrastructure would reduce the proposed public access space by approximately 28 percent, which exceeds the area allowed in the SAP policies, i.e., no more than 20 percent (Exhibit F).

The Commission's Design Review Board (DRB) reviewed the proposed project on three occasions: June 6, 2011, May 11, 2015, and September 14, 2015. The DRB provided positive feedback on and general support for the design of the proposed seating, canopies, railings, and other site amenities. The DRB expressed the need for clear and simple connections to Herb Caen Way and to the adjacent Ferry Building from the project site, and continuity with all aspects of the Ferry Building waterfront. The DRB stated that the Embarcadero Plaza should remain open, and expressed concern over how the plaza would function in the event a weekend farmer's market was held. In response to DRB advice, the applicants revised the project design to improve on connections, handrails, seating, and other design aspects.

The design of the public access area in response to future sea level rise and flooding is addressed in the **Sea Level Rise and Flooding** section below. The public access would be built to be resilient to 56 inches of sea level rise by the year 2068, taking into account a 50-year design life for the project. In the event the public access remains past its intended life, the access would be adaptable to 68 inches of sea level rise by end-of-century by rising the proposed curb along the promenade edge by one-foot (Exhibit D).

In consideration of applicable provisions of the law and policies, the Commission should determine whether the project is well designed, provides maximum feasible public access consistent with the project, and whether the proposed use of the public access is consistent with the SAP policies.

7. **Sea Level Rise and Flooding.** Bay Plan Climate Change Policy No. 2 states, for "…larger shoreline projects, a risk assessment should be prepared…based on the estimated 100-year flood elevation [taking] into account the best estimates of future sea level rise and current flood protection and planned flood protection... A range of sea level rise projections for mid-century and end of century based on the best scientific data available should be used in the risk assessment….The risk assessment should identify all types of potential flooding, degrees of uncertainty, consequences of defense failure, and risks to existing habitat from proposed flood protection devices." Policy No. 3 states, in part: "…within areas that a risk assessment determines are vulnerable to future shoreline

flooding that threatens public safety, all projects…should be designed to be resilient to a mid-century sea level rise projection. If it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise based on a risk assessment using the best available science-based projection for sea level rise at the end of the century." Policy No 7 states, in part: " …[t]he Commission should evaluate each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and capacity to adapt to climate change impacts [including]…projects [that] have regional benefits [and] advance regional goals…[including]…a transportation facility...."

Bay Plan Policy No. 4 on Safety of Fills states, in part, that "[a]dequate measures should be provided to prevent damage from sea level rise and storm activity…over the expected life of a project." And, further, projects should "be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity." As previously stated, the Bay Plan policies on public access require that it be "sited, designed, managed and maintained to avoid significant adverse impacts" of future sea levels and flooding, and that such access "remain viable in the event of future sea level rise or equivalent access consistent with the project should be provided nearby."

The applicants prepared a sea level rise risk assessment for the proposed project with a 50-year design life (through 2068) dated March 2016. According to the assessment, the FEMA Total Water Level estimates for the project site are 11.4 feet NAVD88, and the future sea level rise projections are 14.5 feet NAVD (by 2068)[8]. The proposed passenger and boarding areas, and public access would be built at an elevation of 14.5 feet NAVD88. The ferry gates would float with the tides. Therefore, the proposed project, including all facilities would not be subject to future sea level rise and associated flooding over the life of the project.

In order to mitigate any impacts that may arise from rising seal levels, and to prevent refuse from blowing into the Bay, the applicants propose a one-foot-high curb to be built around the Bayside perimeter of the circulation and public access areas, to an elevation of 15.5 feet NAVD88. In the event the terminal and public access remain past its intended life of 50 years, the applicants provided sea level rise estimates for the year 2100, which project see levels to rise to 15.5 feet NAVD (Exhibit D). Because sea level rise would exceed the proposed deck and curb elevation of 15.5 feet, to mitigate for these potential impacts, the applicants propose to raise the perimeter curb to 17 feet NAVD88. Proposed mitigation measures would make the proposed project resilient to sea level rise by mid-century, and adaptable to end-of-century, if necessary.

In consideration of applicable provisions of the law and policies, the Commission should determine whether the project is designed and would be managed to avoid impacts from seal-level rise and flooding.

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[8] National Research Council, 2012

B. **Review Boards**

1. **Design Review Board.** The Commission's DRB reviewed the proposed as discussed in Section A.6 of the issues section above.
2. **Engineering Criteria Review Board.** The Commission's ERCB reviewed the proposed project as discussed in section A.2.f of the issues section above.

C. **Environmental Review.** WETA, acting as the lead agency, certified the Final EIR/EIS on October 2, 2014, pursuant to the California Environmental Quality Act (CEQA), Section CCR 15061[b][3]. The Federal Transportation Administration, acting as the lead agency, issued a Record of Decision on September 5, 2014, pursuant to the National Environmental Policy Act, Section 23 USC 327. The Final EIR/EIS is available at http://www.bcdc.ca.gov/cm/2016/1117WETA-SFFerry-EIS-EIR-Ex.pdf.

D. **Relevant Portions of the McAteer-Petris Act**

1. Section 66602
2. Section 66605
3. Section 66632

E. **Relevant Portions of the San Francisco Bay Plan**

1. *San Francisco Bay Plan* Policies on Fish, Other Aquatic Organisms and Wildlife
2. *San Francisco Bay Plan* Policies on Water Quality
3. *San Francisco Bay Plan* Policies on Water Surface Area and Volume
4. *San Francisco Bay Plan* Policies on Subtidal Areas
5. *San Francisco Bay Plan* Policies on Climate Change
6. *San Francisco Bay Plan* Policies on Safety of Fills
7. *San Francisco Bay Plan* Policies on Dredging
8. *San Francisco Bay Plan* Policies on Transportation
9. *San Francisco Bay Plan* Policies on Public Access

F. **Relevant Portions of the San Francisco Waterfront Special Area Plan**

1. *San Francisco Waterfront Special Area Plan,* Geographic Specific Policies for the Northeastern Waterfront on Open Water Areas
2. *San Francisco Waterfront Special Area Plan,* Geographic Specific Policies for the Northeastern Waterfront on Public Access
3. *San Francisco Waterfront Special Area Plan,* Geographic Specific Policies for the Northeastern Waterfront on Waterfront Design
4. *San Francisco Waterfront Special Area Plan,* Geographic Specific Policies for the Northeastern Waterfront on Transportation and Parking

Exhibits

A. **Areas Proposed for Improvement**

B. **Proposed Public Access and View Corridors**

C. **View Across Plaza From Embarcadero Promenade**

D. **Promenade Section at East Side of Agriculture Building**

E. **Areas Requiring Dredging During Construction**

F. **Market Event Public Access Diagram**

G. **Ferry Building Saturday Farmer's Market**