SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
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February 18, 2010

Application Summary
(For Commission consideration on March 4, 2010)

Number:	BCDC Permit Application No. 9-06
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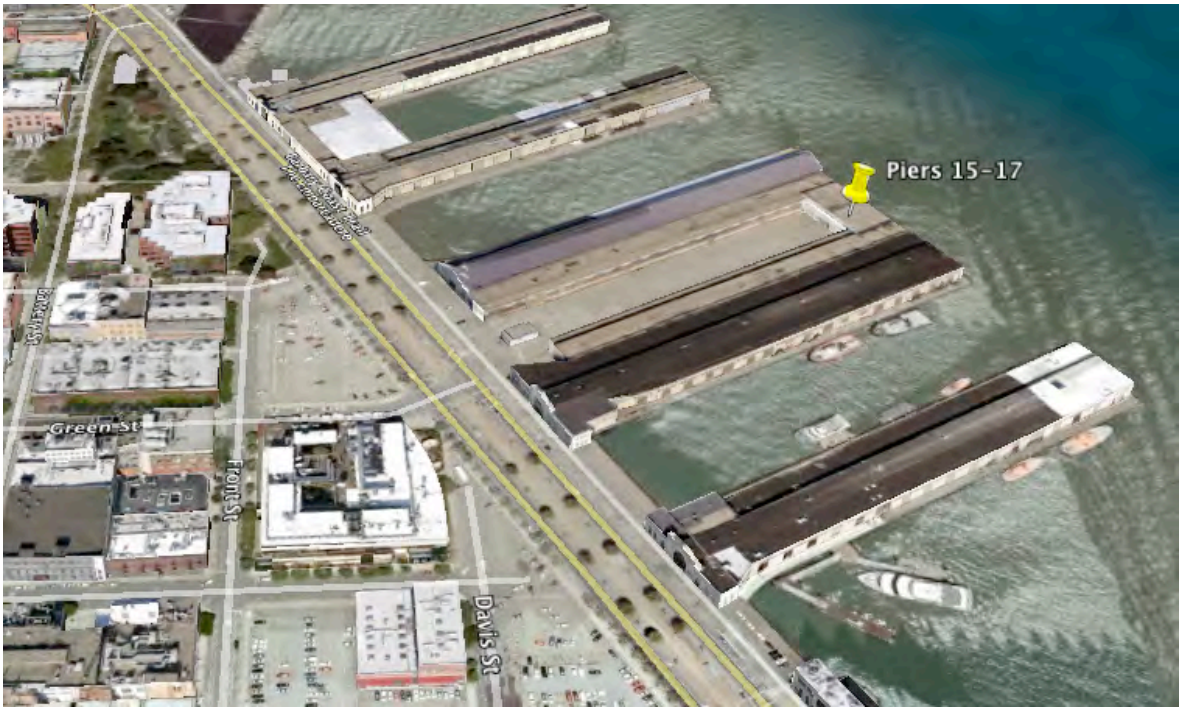
90th Day:	May 5, 2010
Staff Assigned:	Ming Yeung (415/352-3616 mingy@bcdc.ca.gov)

Summary

Applicants: The Exploratorium, (a California not-for-profit corporation) and the Port of San Francisco ("Port").

Location: Piers 15 and 17, located along the San Francisco waterfront, near the intersection of Green Street and the Embarcadero, in the City and County of San Francisco (Exhibits A and B).



Making San Francisco Bay Better

Project: The proposed project involves relocating the Exploratorium from the Palace of Fine Arts in San Francisco to Piers 15/17 in two phases.

Phase 1: The Exploratorium would repair, renovate and seismically upgrade the approximately 136,145-square-foot Pier 15 substructure, shed and bulkhead building to house the Exploratorium's exhibits, exhibit fabrication areas, a museum store, cafes, classrooms, a multi-purpose conference room, administrative offices, and a Bayside History Walk connecting the Pier 15 bulkhead and shed. The project applicants would remove an office building and a portion of the valley floor to create an "Open Water Area" and courtyard between Piers 15/17 for public access and an outdoor exhibit area for ticketed patrons. The existing connector building would be removed and a new "Observatory" building would be constructed that would house additional exhibits, a cafe, a ticketed rooftop "Outdoor Learning Center", and an enclosed public access area on the second-floor. The Exploratorium would repair approximately 15,000 square feet of the substructure and deck of the Pier 17 north apron, dredge approximately 75,100 cubic yards of material within the Pier 17/19 basin, and rehabilitate approximately 5,400 square feet of the Pier 17 shed and the entire Pier 17 north apron for Baydelta Maritime's use and to accommodate its relocation from Pier 15. The areas occupied by Baydelta will be retained by the Port and not leased to the Exploratorium. The Exploratorium would use approximately 20,000 square feet of the Pier 17 shed for museum support and sublease the remainder of its space at Pier 17 to various sub-tenants, including potentially 5,000 square feet to a retail sub-tenant. In Phase 1, the applicants would also construct an approximately 2,000-square-foot water taxi dock along the Pier 15 south apron, a Bay-water cooling and heating system for Pier 15, and two curb indents along the Embarcadero for loading/unloading vehicles and buses (Exhibits C and M).

Phase 2: The Exploratorium would repair, renovate and seismically upgrade the Pier 17 substructure and shed to expand its museum program within the pier shed, create a new Bayside History Walk and install another Bay-water cooling and heating system for Pier 17. In Phase 2, the ticketed Outdoor Exploratorium

exhibit area and the public access within the Piers 15/17 valley courtyard would be expanded and the Pier 17 east apron would be converted to public access (Exhibit D). According to the terms of the lease between the Port and the Exploratorium for Piers 15/17, if the Exploratorium has not commenced construction of the Phase 2 improvements at Pier 17 by the 17th year of said lease, Pier 17 will be removed from the Exploratorium's leased premises.

Proposed public access would include: (1) an approximately 22,290-square-foot entry plaza northwest of Pier 15 (20,590 square feet in Phase 1 and 1,700 square feet in Phase 2); (2) an approximately 56,620-square-foot area along the south and east aprons of Piers 15 and 17 and two bridges across the Open Water Area (41,740 square feet in Phase 1 and 14,880 square feet in Phase 2); (3) an approximately 6,880-square-foot portion of the Pier 17 marginal wharf (Phase 1); (4) an approximately 8,400-square-foot "Bayside History Walk" within the Pier 15 pier shed (Phase 1); (5) an approximately 4,270-square-foot "Bayside History Walk" within the Pier 17 shed (Phase 2); and (6) an approximately 780-square-foot interior public access space on the second-floor of the Observatory building, open during limited hours (Phase 1) (Exhibit E).

Issues Raised:

The staff believes that the application raises five primary issues: (1) whether the proposed fill is consistent with the McAteer-Petris Act and the Bay Plan policies on fill and safety of fills; (2) whether the proposed public access is the maximum feasible consistent with the project and consistent with the Bay Plan policies on appearance, design and scenic views and with the San Francisco Special Area Plan; (3) whether the project is consistent with the Public Trust uses for the site; (4) whether the project is consistent with the Bay Plan policies on natural resources, including fish, other aquatic organisms and wildlife, and water quality; and (5) whether the project is consistent with the Bay Plan policies regarding dredging.

Background

The project site is approximately one-quarter mile north of the Ferry Building and one-half mile south of Pier 39. The site consists of the Pier 15 shed and bulkhead building, the Pier 17 shed, a paved parking area between the two piers known as the "valley", the north, south and east apron areas, a building on the eastern end of the valley that physically connects the two pier sheds known as the "connector building", an approximately 1,579-square-foot free-standing office shack within the western portion of the valley, and a 235-square-foot office addition on the north apron attached to the Pier 17 shed (Exhibit B). Piers 15 and 17 are contributing

resources to the San Francisco Embarcadero National Register Historic District. Pier 15 is currently occupied by one tenant: Baydelta Maritime, a tug and tow operator, that leases space within the pier shed and berths its tugboats along the southern apron of Pier 15. Pier 17 is currently occupied by three tenants: (1) TCHO Ventures, Inc., a chocolate manufacturing and retail company; (2) Project Frog, Inc., for architectural staging; and (3) San Francisco Municipal Transportation Agency (SFMTA) for bus storage. The Port has historically used the east apron of Piers 15-17 for berthing large ceremonial ships and naval vessels.

The *San Francisco Waterfront Special Area Plan* (SAP), as amended through July 2000, required the "valley" between Piers 15 and 17 and the non-historic additions to the Pier 15 and 17 sheds to be removed to form an approximately 153,450-square-foot "Open Water Area" (Exhibit F). On December 3, 2009, the Commission adopted Resolution No. 09-01 to amend the SAP to allow the retention of a portion of the valley and the non-historic shed additions at Pier 15 and Pier 17. The SAP amendment requires that any fill that is not removed at this location to be offset by removal at another location along the San Francisco waterfront within 10 years of issuance of a certificate of occupancy for a major development at Pier 15 at a ratio of 1 to 1 if removed from within the northeastern waterfront, and 2 to 1 if removed from outside of the northeastern waterfront, with an incentive for early removal (i.e., 1.5 to 1 if removed from outside of the northeastern waterfront within 5 years of issuance of a certificate of occupancy for a major development at Pier 15). On February 3, 2010, the Office of Administrative Law approved the SAP amendment.

Project Description

Project Details:

The applicants, the Exploratorium, a not-for-profit corporation, and the Port of San Francisco, describe the project as follows:

Phase I:

In the Bay:

a. **Pier 15 Marginal Wharf.** Repair and seismically strengthen the Pier 15 marginal wharf by installing, using and maintaining approximately 21, 24-inch-in-diameter new steel pipe piles; repairing, using and maintaining approximately 95 existing piles; and repairing the structural deck and beams.

b. **Pier 17 Marginal Wharf.** Renovate, use and maintain an approximately 6,880-square-foot public access area within the Pier 17 marginal wharf by removing existing car stops, gates, and parking uses.

c. **Open Water Area.** Cut approximately 269 piles below the mudline and remove an approximately 1,579-square-foot office building and up to 54,880 square feet of the valley decking to create an open water area between Piers 15 and 17, and cut approximately 278 piles just below the decking to create a "water pile garden" to be used in Phase 2 of the project to support an extension of the Pier 17 south apron public access walkway, entry plaza extension, and extension of the Outdoor Exploratorium area.

d. **Piers 15–17 Valley Courtyard.** Construct, use and maintain an approximately 20,590-square-foot public access entry plaza northwest of Pier 15, approximately 12,140 square feet of public access walkways and two bridges within the Piers 15-17 courtyard, and approximately 22,800 square feet of ticketed Outdoor Exploratorium exhibit area, by repairing approximately 566 existing piles, installing approximately 16, 72-inch-in-diameter, new steel pipe piles for seismic strengthening, replacing approximately 27,130 square feet of deck within the valley, which includes constructing two bridges of approximately 1,700 square feet, and installing public access improvements such as benches, lighting and railings.

e. **Pier 15.** (1) Repair, seismically strengthen and maintain the Pier 15 shed building, bulkhead building and substructure by repairing up to 765 existing piles and cutting 8 piles two feet below the mudline; (2) Renovate, use and maintain the Pier 15 shed and bulkhead building, including a new mezzanine level to house exhibits, a museum store, cafés, classrooms, a multi-purpose conference room, administrative offices, and an approximately 8,400-square-foot Bayside History Walk connecting the Pier 15 bulkhead building to the Pier 15 shed; and (3) Construct, use and maintain a Bay water heating and cooling system for the museum by installing two 48-inch-in-diameter steel pipes totaling approximately 25 square feet and 100 cubic yards of fill below the Pier 15 deck, and an approximately 1,675-square-foot utility enclosure on the Pier 15 south apron to enclose a transformer and generator.

f. **Observatory Building.** Remove the existing "Connector Building" and construct, use and maintain an approximately 16,000-square-foot, 32-foot-tall "Observatory Building" to house the Exploratorium's exhibits, a rooftop "Outdoor Learning Center", a public café, and an approximately 780-square-foot enclosed public access area in the northeast corner of the second floor of the Observatory Building.

g. **PortWalk.** Construct, use and maintain approximately 29,600 square feet of public access walkway along the east apron of Piers 15 and 17 and the south apron of Pier 15 by installing approximately 30 new steel pipe piles (14, 72-inch-in-diameter and 16, 20-inch-in-diameter) for seismic strengthening and to support the widened southwest and southeast apron deck, cutting approximately 42 piles at the mudline along the south apron of Pier 15, removing and replacing existing decking, and installing public access improvements such as benches, lighting and railings.

h. **Water Taxi Dock.** Construct, use and maintain an approximately 2,000-square-foot floating boat dock along the Pier 15 south apron for future water taxi service, held in place by four 20 inch-in-diameter steel pipe piles.

i. **Pier 17.** (1) Repair and maintain the substructure of an approximately 800-foot length of the Pier 17 north apron (approximately 15,000 square feet) and 5,400 square feet of the Pier 17 shed for use by Baydelta Maritime by repairing approximately 250 piles, replacing approximately 40 fender piles, and removing and replacing existing decking; (2) Renovate, use and maintain approximately 20,000 square feet of the Pier 17 shed for museum support space and approximately 5,000 square feet for retail use; (3) Remove the 235-square-foot office addition on the north apron attached to the Pier 17 shed and install an approximately 650-square-foot transformer in its place; and (4) Install and upgrade utilities for existing tenants and Exploratorium use.

j. **Piers 17-19 Basin.** Dredge an approximately 160,000-square-foot (3.67-acre) area of the Piers 17-19 water basin to -20 feet mean lower low water (MLLW), plus two feet of overdredge depth allowance to provide sufficient depth for Baydelta Maritime's tugboats, resulting in a total of approximately 75,100 cubic yards of dredged material, and place the material at the Alcatraz (SF-11) disposal site.

Within the 100-foot Shoreline Band (Will Require an Amendment to BCDC Permit No. 8-90 to the Port and Department of Public Works (DPW). Area is Outside Exploratorium Leasehold):

a. **Piers 15 and 17 Curb Indents.** (1) Extend, use and maintain an existing curb indent along the Embarcadero located in front of Pier 15 another 73 feet south for a total curb indent of 148 feet for passenger car drop-off; and (2) Construct, use and maintain a new, approximately 225-foot-long curb indent in front of Pier 17 for field trip bus drop-off.

Phase 2:

In the Bay:

a. **Pier 17.** Repair, seismically strengthen and maintain the Pier 17 shed building and approximately 110,615 square feet (2.54 acres) of the existing substructure supporting the Pier 17 shed, by: (1) Installing 26, 72 inch-in-diameter, new steel pipe piles for seismic strengthening; (2) Constructing an approximately 2,500-square-foot extension of the north apron at the west end above four of the new steel pipe piles; (3) Repairing up to 800 existing piles; (4) Renovating, using and maintaining the Pier 17 shed to house the Exploratorium's exhibits, exhibit fabrication area, a café, classrooms, administrative offices, and an approximately 4,270-square-foot Bayside History Walk within the southwest corner of the Pier 17 shed; (5) Constructing, using and maintaining a Bay water heating and cooling System for the museum, involving two 48-inch-in-diameter steel pipes totaling approximately 25 square feet and 100 cubic yards of fill below the Pier 17 deck; and (6) Installing an approximately 400-square-foot generator along the Pier 17 north apron, near the existing transformer constructed in Phase 1.

b. **Pier 17 Marginal Wharf.** Repair and seismically strengthen the approximately 142-foot-long by 44-foot-wide 6,880-square-foot public access area on the Pier 17 marginal wharf by installing, using and maintaining approximately 21, 24-inch-in-diameter new steel pipe piles and repairing, using and maintaining approximately 50 existing piles and the structural deck and beams.

c. **Pier 17 South Apron.** Construct, use and maintain an approximately 700-foot-long by 23- to 35-foot-wide, 13,110-square-foot extension of the Pier 17 public access south apron within the Piers 15-17 valley courtyard by installing new decking on top of existing piles in the "water pile garden" and installing public access improvements such as benches, lighting and railing.

d. **Piers 15-17 Valley Courtyard and Open Water Area.** Construct, use and maintain an approximately 1,700-square-foot extension of the public access entry plaza and an approximately 5,530-square-foot extension of the ticketed outdoor exhibit area by installing new decking on top of existing piles in the "water pile garden", resulting in an approximately 34,540-square-foot (0.79 acre) open water area between Piers 15 and 17.

e. **PortWalk.** Repair and seismically strengthen, use and maintain approximately 1,770 square feet of public access walkway on the east apron adjacent to the Pier 17 shed, by replacing existing decking and installing public access improvements such as benches, lighting and railings.

Bay Fill: The proposed project would remove a total of 82,410 square feet (1.89 acres) of Bay fill, all occurring during Phase 1 of the project: approximately 797 cubic yards of solid fill from the removal of 269 piles, and 82,410 square feet of pile-supported fill in the Piers 15/17 valley. During Phase 1 of the project, a total of 37,470 square feet (0.86 acres) of new fill would be placed: approximately 676 cubic yards of new solid fill for 67 new piles and two new pipes for the Bay water cooling system at Pier 15, 2,000 square feet of floating fill for the new water taxi dock, and a total of 35,470 square feet (0.81 acre) of pile-supported fill (28,050 square feet of "replacement" decking within the Piers 15/17 valley for public access and the ticketed outdoor exhibit area, and 7,420 square feet of new decking along the southwest and southeast apron of Pier 15 for seismic support and public access). During Phase 2 of the project, an additional 23,530 square feet (0.54 acres) of new Bay fill would be placed: 555 cubic yards of solid fill for 47 new piles and two new pipes for the Bay water cooling system at Pier 17, 1,540 square feet of floating fill (within the Piers 15/17 valley for the ticketed outdoor exhibit area), and 21,990 square feet (0.50 acres) of pile-supported fill (19,560 square feet (0.45 acres) of "replacement" decking within the Piers 15/17 valley for public access and the ticketed outdoor exhibit area, and 2,430 square feet (0.06 acres) along the north apron of Pier 17 on top of seismic piles).

The project would increase the amount of solid and floating fill in the Bay but would reduce the amount of pile-supported fill in the Bay. In total, the proposed project would result in a net increase of 21,410 square feet (0.49 acres) of Bay open water.

Type of Fill	Removed	New	Total Net Fill
Phase 1			
Solid (cy)	797	676	121
Floating (sf)	0	2,000	2,000
Pile-Supported (sf)	82,410	35,470	(46,940)
Sub Total (sf)	82,410	37,470	(44,940)
Phase 2			
Solid (cy)	0	555	555
Floating (sf)	0	1,540	1,540
Pile-Supported (sf)	0	21,990	21,990
Sub Total (sf)	0	23,530	23,530
Project and Expanded Project			
Total (sf)	82,410	61,000	(21,410)

Public Access: There is currently no public access at the site. Several areas have been "yellow-tagged" (meaning these areas have load restrictions) or "red-tagged" (meaning that these areas cannot be occupied at all) by the Port of San Francisco's Engineering Division. During Phase 1 of the project, the proposed public access would include: (1) an approximately 20,590-square-foot (0.47 acres) entry plaza northwest of Pier 15, that would include benches, lighting and railings along the Open Water Area, and a tidal pool feature allowing a glimpse into the science of the Bay; (2) approximately 41,740 square feet (0.96 acres) of perimeter and bridge access ("PortWalk") within the Piers 15/17 valley courtyard and the south and

east apron of Pier 15; (3) approximately 6,880 square feet (0.16 acre) of the Pier 17 marginal wharf; (4) an approximately 8,400-square-foot "Bayside History Walk" within the Pier 15 shed; (5) an approximately 780-square-foot interior public access space on the second-floor of the Observatory building, that would be available to the public during museum hours, currently estimated to be from 10 a.m. to 5 p.m., Tuesday through Sunday but could be closed for up to 8 hours/week for special events; and (6) an approximately 60-foot-wide dedicated view corridor located between Pier 17 and the Observatory Building.

During Phase 2 of the project, additional public access would include: (1) an approximately 1,700-square-foot extension of the entry plaza northwest of Pier 15; (2) an approximately 13,110-square-foot extension of the Pier 17 south apron that would increase the width of the approximately 14-foot-wide walkway to between 23- to 35-feet wide; (3) an approximately 1,770-square-foot area along the east apron of Pier 17; and (4) an approximately 4,270-square-foot "Bayside History Walk" within the Pier 17 shed (Exhibit E).

Type of Public Access	Square Feet	Acres	Shoreline Length (miles)
Project			
On-Site (new)	78,390	1.80	0.48
Off-Site (new)	0	0	0
Protected or Maintained	0	0	0
Sub Total	78,390	1.80	0.48
Expanded Project (with Phase 2)			
On-Site (new)	20,850	0.48	0.01
Off-Site (new)	0	0	0
Protected or Maintained	0	0	0
Sub Total	20,850	0.48	0.01
Project and Expanded Project			
Total	99,240	2.28	0.49

Schedule and Cost: The Exploratorium and the Port propose to begin construction in June 2010 and complete Phase 1 of the proposed project in July 2012. According to the terms of the lease between the Port and the Exploratorium for Piers 15/17, if the Exploratorium has not commenced construction of the Phase 2 improvements at Pier 17 by the 17th year of said lease, Pier 17 will be removed from the Exploratorium's leased premises. The Exploratorium and the Port estimate the total Phase 1 project cost to be approximately $175 million.

Staff Analysis

A. **Issues Raised**: The staff believes that the application raises five primary issues: (1) whether the proposed fill is consistent with the McAteer-Petris Act and the Bay Plan policies on fill and safety of fills; (2) whether the proposed public access is the maximum feasible consistent with the project, consistent with the Bay Plan policies on appearance, design and scenic views and with the San Francisco Special Area Plan; (3) whether the project is consistent with the Public Trust uses for the site; (4) whether the project is consistent with the Bay Plan policies on natural resources including fish, other aquatic organisms and wildlife, and water quality; and (5) whether the project is consistent with the Bay Plan policies regarding dredging.

1. **Bay Fill.** The Commission may allow fill only when it meets the fill requirements identified in Section 66605 of the McAteer-Petris Act, which states, in part: (a) the public benefits from fill must clearly exceed the public detriment from the loss of water areas, and fill should be limited to water-oriented uses, including water-oriented recreation and public assembly; (b) no alternative upland location exists for the uses proposed in fill; (c) the fill should be the minimum amount necessary; (d) the fill should minimize harmful effects to the Bay including the water volume, circulation, and quality, and fish and wildlife resources; (e) the fill should be constructed in accordance with sound safety standards; and (f) the fill should be authorized when the applicant has valid title to the affected property.

   With adoption of the *San Francisco Waterfront Special Area Plan* (SAP), some non-water-oriented uses can be authorized on piers as long as the uses are consistent with the Public Trust and the Port's Legislative Trust Grant (Burton Act).

   a. **Public Benefit v. Public Detriment and Water-Oriented Use**. The applicants propose to substantially strengthen the piers, substructure and marginal wharf of Piers 15/17 to support the proposed new uses by repairing and/or replacing approximately 2,500 existing piles and installing approximately 118 new piles.

      In its informal opinion of October 8, 1986, the Attorney General's office advised the Commission that when a proposed development upon a pier involves work to the pier itself or its substructure, the scope of the Commission's permit review, and whether the water-oriented use requirement is triggered, varies with the physical extent, nature and purpose of the work. The Attorney General's office advised that routine repairs, such as those that are necessary to keep pace with the ordinary wear and tear suffered by an existing structure that do not change the essential utility of the structure or allow the structure to be perpetuated indefinitely through the periodic repetitions of such work, would not extend the Commission's Bay jurisdiction to piers that were constructed prior to September 17, 1965, the date the Commission obtained its permit jurisdiction over San Francisco Bay. However, the Attorney General's Office also advised that "…Anything beyond such routine repairs tends toward creation of what is essentially a 'new' structure, in that the structure is, at the very least, one that is significantly different from what existed prior to the work in terms of its utility or life expectancy or time period that will be necessary to amortize its overall cost…Accordingly, any such work on a pier should be treated as 'further filling' of the Bay within the meaning of Section 66605, and must be assessed for the water-oriented nature of the uses supported by the pier."

      The staff believes that the proposed strengthening and repair of the substructure, marginal wharves and piers go beyond routine repairs because the proposed improvements would significantly upgrade and increase the life expectancy of these structures. Therefore, the Commission should treat the bulkhead buildings, shed building and piers as if they were located in the Commission's Bay jurisdiction under the McAteer-Petris Act and the Bay Plan, and any uses within the buildings on the piers must be water-oriented or otherwise permissible within the Commission's Bay jurisdiction.

      The proposed new fill would fulfill four functions: (1) seismically strengthen the substructure, marginal wharf and piers supporting historic buildings to house a museum, related office space, event space, café and retail uses, and to relocate Bay-delta Maritime to Pier 17; (2) improve public access to the Bay; (3) provide a dock for water taxi service; and (4) allow up to two Bay-water heating and cooling systems associated with the museum. The rehabilitated structures would be used primarily

to house the Exploratorium's museum program, related cafes and retail, all public assembly uses, to support water-oriented uses such as Baydelta Maritime and a water taxi dock, and to increase public access to the Bay.

According to the applicants, because the majority of the project site is currently inaccessible, rehabilitation of the project site as a museum would provide substantial new public benefits. The proposed project would attract large numbers of people to enjoy the Bay and the shoreline to an area that currently has no access. The museum has been designed to take advantage of its nearness to the Bay. The applicants state "[b]y its very nature, the Project, a museum of science, art and human perception, will support and encourage the expansion of scientific information concerning the Bay. Many of the museum's exhibits will be Bay and water-oriented, designed in a manner to increase the public's understanding and appreciation of the bay's ecosystem." In addition to the museum uses and relocation of Baydelta Maritime, the project would provide approximately 99,240 square feet (2.28 acres) of new public access at the site and access from the Bay to the site, with the construction of a new water taxi dock. The proposed project will meet a LEED Silver accreditation with the goal of becoming a net-zero energy facility by installing solar panels on the pier shed rooftops and two Bay-water heating and cooling systems – one for Pier 15 in Phase 1 and another for Pier 17 in Phase 2. Although the pipes associated with each Bay-water heating and cooling system would require placing approximately 25 square feet of Bay fill, the systems would significantly reduce carbon-emissions.

On February 8, 2010, the Executive Director of the State Lands Commission (SLC) determined that the proposed project was consistent with the Public Trust and with the terms and conditions of the Burton Act. Please see "**Public Trust Consistency"** section below for a discussion on the project's consistency with the Public Trust.

The Commission should determine whether the public benefits associated with the fill for the project exceed the public detriment from the placement of that fill and whether the fill serves a water-oriented use or is otherwise permissible within the Commission's Bay jurisdiction as uses consistent with the Public Trust.

b. **No Alternative Upland Location.** According to the applicants, "[t]he Exploratorium was unable to identify an alternative upland location that would enable it to meet its project objectives." Prior to selecting Piers 15/17, the project sponsor considered and ultimately rejected several upland sites. Of the potentially available and economically feasible sites, only Piers 15/17 met the Exploratorium's objectives related to: total program space and opportunity for expansion; appropriate museum exhibit space, with a continuous floor plan; provision of outdoor exhibit space for Bay-oriented learning; a site that lends itself to interpretation of the Bay; a centrally located, highly visible, and transit-accessible location; and the ability to develop revenue-generating uses, such as a multi-purpose rental event space, to sustain its operations.

c. Minimum Amount of Fill. As discussed above, the project would result in an overall net reduction of 21,410 square feet (0.49 acres) of Bay fill at the site. While the amount of solid and floating fill would be increased, the amount of pile-supported fill would be reduced and the overall Bay fill footprint decreased. According to the applicants, the minor amount of new fill is required "primarily in the form of new decking for seismic safety and public access, which is necessary to accommodate the new museum use and to meet contemporary life safety, accessibility, mechanical-electrical, and programmatic requirements."

In addition, under the terms of the SAP amendment allowing retention of a portion of the Piers 15/17 valley and the non-historic shed additions, the applicants are required to offset any fill not removed at this location at another location along the

San Francisco waterfront within 10 years of issuance of a certificate of occupancy for a major development at Pier 15 at a ratio of 1 to 1 if removed from within the northeastern waterfront, and 2 to 1 if removed from outside of the northeastern waterfront, with an incentive for early removal (i.e., 1.5 to 1 if removed from outside of the northeastern waterfront within 5 years of issuance of a certificate of occupancy for a major development at Pier 15).

Prior to the December 3, 2009 SAP amendment, the SAP required that 153,450 square feet (3.52 acres) of the valley and non-historic shed additions be removed (Exhibit F). The Exploratorium proposes to remove fill to create an approximately 54,880-square-foot (1.26 acres) open water area initially during Phase 1 of the project but to retain existing piles within the Piers 15/17 valley to support new decking in Phase 2 for public access and an expanded ticketed outdoor exhibit area. Upon build-out of Phase 2, the project will result in an approximately 34,540-square-foot (0.79 acres) open water area. According to the applicants, at least 10,600 square feet (0.24 acres) of fill is required for seismic strengthening and is permitted under the SAP as new fill within open water areas. Under the terms of the SAP amendment, the remaining 108,310 square feet of fill not removed from the valley, will be offset at another location on the San Francisco waterfront. Several locations have been identified where the remaining fill could be removed, including portions of Piers 30-32 in the northeastern waterfront, Pier 70, Pier 98 Lash Pier, Carmen's Restaurant on China Basin Channel, Pier 64 and Islais Creek.

d. **Minimizing Impacts.** The proposed project would involve driving up to 118 new steel piles in the Bay and constructing two Bay-water cooling systems, resulting in an increase of 434 cubic yards of solid Bay fill. As discussed more fully in the "**Natural Resources Policies**" section below, the measures incorporated into the project minimize the fill impacts to the Bay including the water volume, circulation and quality, and fish and wildlife resources. The Final Environmental Impact Report (FEIR) for the project determined that with implementation of identified mitigation measures, any potential impacts to biological resources and water quality would be reduced to a less than significant level. On February 8, 2010, the Regional Water Quality Control Board (RWQCB) issued a water quality certification for the dredging element of the project.

The Commission should consider whether the proposed fill minimizes harmful effects to the Bay including the water volume, circulation, and quality and fish and wildlife resources.

e. **Sound Safety Standards.** Policy 1 of the Bay Plan Safety of Fills section states, in part: "The Commission has appointed the Engineering Criteria Review Board…to: (a) establish and revise safety criteria for Bay fills and structures thereon; (b) review all except minor projects for the adequacy of their specific safety provisions, and make recommendations concerning these provisions…." Policy 3 states: "To 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. Coast and Geodetic Survey, for purposes of data comparison and evaluation." Policy 4 states: "To prevent damage from flooding, structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea level rise as determined by competent engineers." Policy 5 states, in part: "To minimize the potential hazard to Bay fill projects and bayside development from subsidence, all proposed developments should be sufficiently high above the highest estimated tide level for the expected life of the project…"

The Commission's Engineering Criteria Review Board (ECRB) reviewed the proposed project for seismic and engineering design safety on March 12, 2009. The scope of the work reviewed included the work in Phase 1 of the project only. The ECRB was satisfied with the engineering criteria used in the design of the proposed project and strongly encouraged the applicants to set up an array of seismic instruments to monitor the behavior of the structure in future earthquakes. The Exploratorium has agreed to consider incorporating some form of seismic monitoring equipment in the proposed project, however, due to the expense of such instrumentation, this may take the form of an informative museum exhibit rather than a seismic instrumentation plan for use by seismologists.

According to the applicants, the project will be constructed in a manner that complies with projected sea level rises associated with long-term increases to the mean high tide. The rehabilitated pile-supported Piers 15 and 17 would not be altered any higher than the existing elevation of 12.80 feet mean lower low water (MLLW). The applicants provided information from the tidal gauge at Alameda as well as predicted data for Rincon Point at Pier 22 ½, based on tide data from the tidal station at Golden Gate. Based on projected sea-level rise predictions used by BCDC of 16 inches by 2050 and 55 inches by 2100[1], Piers 15 and 17 would have approximately 1.63 feet of freeboard clearance during mean higher high tide in 2099. This would mean that at very high tides, and in storm events with wave run-up, portions of the piers may be inundated by 2100. Because the Exploratorium will receive a 66-year lease from the Port of San Francisco, which is expected to expire in the year 2076, sea level rise effects would be addressed at the time of lease renewal.

The Commission should consider whether the proposed fill would be constructed in accordance with sound safety standards, consistent with Bay Plan policies regarding safety of fills, including whether a seismic instrumentation plan, as recommended by the ECRB should be required.

f. **Valid Title of Project Site.** The project site is owned by the City and County of San Francisco, a municipal corporation, operating by and through the San Francisco Port Commission, and is subject to the Public Trust. On September 8, 2009, the Port of San Francisco approved a Lease Disposition and Development Agreement with the Exploratorium that authorizes the Port to lease the Piers 15/17 project site to the Exploratorium, upon satisfaction of certain conditions and pursuant to the Lease Disposition and Development Agreement. On October 22, 2009, the State Lands Commission approved a dredging lease with the Exploratorium for the Piers 17/19 water basin where dredging would occur.

The Commission should determine whether the fill proposed for the project is consistent with the Commission's law and related policies regarding valid title.

2. Public Access. Section 66602 of the McAteer-Petris Act states that "…maximum feasible public access, consistent with a proposed project, should be provided." In assessing whether a project on the San Francisco waterfront provides maximum feasible public access consistent with the project, the Commission relies on the McAteer-Petris Act, the policies of the San Francisco Bay Plan, and the policies of the SAP.

Policy 1 and Policy 6 of the Bay Plan policies on Public Access state that "a proposed fill project should increase public access to the Bay to the maximum extent feasible" and that the public access improvements "…should be designed and built to encourage

[1] Projected sea-level rise numbers are based on numbers provided by the California Climate Action Team established by Governor Schwarzenegger and included in a report prepared by BCDC entitled, "Living With a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and On the Shoreline", dated April 7, 2009.

diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for the physically handicapped to the maximum extent feasible, should include an ongoing maintenance program, and should be identified with appropriate signs." Policy 11 states that, "the Design Review Board should advise the Commission regarding the adequacy of the public access proposed" and Policy 2 of the Bay Plan's Appearance, Design and Scenic Views section state that "all bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay" and that "maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas, from the Bay itself, and from the opposite shore. "

With regard to public access, the SAP states that "[f]or a major development project occupying all or most of a pier(s), a project that provides 35% of the project pier area for public access should be deemed to provide maximum feasible public access…" Projects on finger piers where there is no change to the pier shed footprint must provide, to the maximum extent feasible, public access on the entire apron, a "Bayside History Walk", and an additional public access feature that is consistent with the project, the size of the pier and with the Secretary of Interior's standards. According to the SAP, non-public access uses may extend to a pier's platform edge, provided that such uses enhance the total design of the project, serve to make the public access more interesting, and do not divert the public way along more than twenty percent (20%) of the total platform edge. The Bayside History Walk is required to "provide public access to the Bay's intimate and quiet spaces behind historic bulkhead and connector buildings, provide views of the inner structure of the pier sheds and the bulkhead buildings, and to provide interpretation of, and make accessible to the public, these unique physical assets of San Francisco's maritime history." Public access should emphasize passive recreation and focus its proximity to the Bay and on the views and unique experiences that nearness to the Bay affords, be provided free of charge to the public, and be generally accessible at any time, however, reasonable restrictions on public access may be approved to promote public safety and security.

The proposed project would provide approximately 99,240 square feet (2.28 acres) of new public access to the Bay, or approximately 26% of the total project pier area (the area of Pier 17 reserved for Baydelta Maritime is included in this calculation). Although this number is less than 35%, according to the applicants, "the project will provide significant public access features" that include a public lobby connecting the Pier 15 bulkhead arch and shed with clear views of the building's historic trusses above and the expanse of the shed space beyond to the east, a Bayside History Walk within both the Pier 15 (Phase 1) and Pier 17 (Phase 2) sheds with interpretive exhibits for the public to view and enjoy, and a new Observatory Building that creates a new 60-foot-wide Bay view corridor and provides a second-floor access area that is protected from inclement weather and provides expansive Bay views. In addition to these public access features, the proposed project would provide approximately 78,910 square feet (1.81 acres) of perimeter public access along the Piers 15/17 aprons and a new entry plaza. Apron access would vary in width from 13.75 feet in Phase 1 to 23 to 35 feet in Phase 2 (approximately 700 feet long) along the Pier 17 south apron, 16 to 25 feet wide (approximately 400 feet long in Phase 1 and an additional 100 feet long in Phase 2) along the Piers 15/17 east apron, and 15 to 39 feet wide (approximately 800 feet long) along the Pier 15 south apron. Benches, lighting, railings and other furnishings would be provided in appropriate areas to accommodate a diversity of users, including the widened area of the southeast apron of Pier 15, which would provide a seating area of approximately 23 feet wide by 190 feet long. Although a portion of the Pier 15 north apron would be reserved for the ticketed outdoor exhibit area and not available for continuous perimeter public access, according to the applicants, this area represents only a 15% section of the total platform edge, less than the 20% permitted in the SAP.

Moreover, the applicants state that, "the valley/courtyard area will incorporate strategically-located bridges that will be angled to provide a natural flow of non-ticketed visitors around the Open Water Area and to other areas of the project site." (Exhibits G, H and I).

The Exploratorium proposes to install science exhibits throughout the project site, including significant areas that are available to the public, and views into the museum through the transparent glass from the Pier 15 south apron. The applicants state, "[s]uch exhibits will draw the public to the project site and will help to foster a greater appreciation and understanding of the Bay" and thus, "…will help achieve the Bay Plan objective of protecting the Bay as a natural resource benefitting present and future generations." The project would provide a variety of public access areas and improvements to accommodate a diversity of users. According to the applicants, "[t]he layout of the outdoor public access areas will permit users multiple and varied views of the Bay, the Bay Bridge, the east Bay hills and back towards the shoreline and the City" and "[t]he decking in the Valley will allow the public immediate access to the water level to observe tidal action." The project was reviewed by the Commission's Design Review Board (DRB) seven times and, based on the DRB's feedback, the project site plan and public access were revised several times. At the second to last meeting on the project, the DRB concluded by stating that the site planning and architecture had improved and that the project was going in a "wonderful, positive direction."

a. **East Apron Navy Berthing.** The Port proposes to continue berthing ceremonial and navy ships along the east apron of Piers 15/17, which could result in the closure of the east apron precluding public access for up to 53 days/year for security reasons. The applicants have agreed to work with the Navy to establish an access program for the east apron that will provide military escorts or otherwise ensure no material interference with public access during the Exploratorium's normal hours of operation. If, during the Exploratorium's normal hours of operation there are periods when no public access to the east apron is allowed by the Navy, alternate public access would be provided through the eastern portion of Pier 15, either by escort or other means through the museum. During periods when the east apron is closed, the Port would erect temporary barricades at the east end of the piers (see Exhibit J) and the applicants will post appropriate signage along the Embarcadero and elsewhere to inform the public of any east apron closures and alternate access.

b. **Observatory Building Second-Floor Public Access.** The proposed project would provide an approximately 780-square-foot interior public access space on the second-floor of the northeast corner of the Observatory Building. This area would be available for public access during regular museum hours, currently estimated to be from 10 a.m. to 5 p.m., Tuesday through Sunday, but could be closed for up to 8 hours/week during these times for special events. The applicants propose to install seating, trashcans and other improvements within the interior space, as well as post appropriate signage throughout the project site to inform the public about the public access area and to alert the public of any possible closure times. The public would access the second floor space from the north side of the Observatory Building and via an ADA-accessible elevator. The public access would provide a quiet, sheltered area, protected from inclement weather. In addition, the applicants state the area would "draw the public to the eastern end of Pier 15 and will provide expansive views…" of the Bay and possibly of ships when berthed on the east end.

c. **Vehicle Circulation.** According to the SAP, "[v]ehicle circulation in public access areas should be limited to service and maintenance vehicles necessary to serve the facility and should be concentrated during late nights and early morning hours."

According to the applicants, catering truck access to the east apron of Piers 15/17 is necessary to service special events which could occur anytime throughout the day. During Phase 1 of the proposed project, the applicants propose vehicular access to the east apron through the interior of the Pier 17 shed and to provide parking in a designated area at the southeast corner of Pier 17 to service special events (see Exhibits C and K). The applicants also propose parking in other non-public access areas during Phase 1, such as the northern portion of the east apron. In addition, the Port proposes to park vehicles on the east apron when the apron is closed to public access due to the berthing of a navy ship. Vehicle access through the Pier 17 shed would require trucks to occasionally cross the Embarcadero and the Pier 17 marginal wharf public access area to enter the pier shed.

During Phase 2 of the project, when the Pier 17 shed interior is being used as a museum, the applicants propose vehicular access to the east apron by driving vehicles on the expanded Pier 17 south apron through the public access area (See Exhibit L). Service vehicles would be permitted to drive along the south apron only during the limited hours of 11 p.m. to 11 a.m., however, the applicants propose to drive catering trucks along this area throughout the day to service special events. Parking for catering vehicles within the designated area at the east end of the pier would no longer be permitted with the completion of Phase 2 and this area would be made available for public access, unless the applicants can demonstrate to BCDC's satisfaction that there is no feasible alternative to accommodate parking within the Pier 17 shed or elsewhere and that public access is not adversely impacted by the vehicle parking. Any extension of parking use in this area would require a permit amendment and a strong showing that such parking is needed and cannot be accommodated within the Pier 17 shed as part of the Phase 2 programming, or elsewhere.

During both Phase 1 and Phase 2, the applicants propose to drive small electric carts along the Pier 17 south apron during special events to shuttle patrons to the east end of the piers. The carts would be stored within the Pier 17 shed and would be approximately four feet in width. Because the south apron of Pier 17 would initially be 13'-9" wide during Phase 1 and then later widened to between 23'-9" and 39'-5" wide during Phase 2, there would be at least approximately ten feet of clearance for public access when electric carts are using this area.

d. **Embarcadero Curb Indents.** The proposed project would extend an existing 75-foot curb indent in front of Pier 15, another 73 feet south for a total curb indent of 148 feet for passenger car drop-off. A new curb indent in front of Pier 17 of approximately 225 feet would be created for field trip bus drop-off (Exhibit M). When this proposal was discussed at the DRB meetings, several members of the public, including bicyclists, were concerned that the indents would cause traffic to back-up on the Embarcadero from queuing cars and buses, causing conflicts with bicyclists and members of the public using the Embarcadero promenade.

To address these concerns, the applicants have reduced the length of the curb indents to the current proposal and have agreed to do the following: (1) install and maintain a separation system along the Embarcadero Roadway at the Pier 15 passenger loading indent to limit access to the curb to two points located at the north and south ends of the curb indent; (2) stencil a standard bicycle symbol at the start of the bicycle lane section adjacent to the Pier 15 passenger loading curb indent and adjacent to the Pier 17 bus loading curb indent to increase driver awareness of the presence of the bicycle lane; (3) install appropriate signage at the curb in advance of the two curb indents alerting motorists to the possible presence of bicycles; and (4) increase the depth of the bus drop-off curb indent from the standard 8.5 feet to 9

feet to help prevent buses from encroaching into the adjacent bicycle lane. With these modifications, the Final EIR concluded that the proposed project would have less than significant traffic impacts on bicyclists.

In order to prevent an overflow of buses onto the Embarcadero, the applicants will prepare a Transportation Management Plan to address how buses would be received at the site and directed to a temporary staging area along Green Street when the curb indent is full. The Plan would also address how school children disembarking from the buses would be safely directed and managed to an area along the Pier 17 marginal wharf so as not to conflict with the public along the Embarcadero promenade. In addition, the Mayor's Office and the Mayor's Office of Economic and Workforce Development has agreed to take a lead role in working with the Port to make improvements to the Embarcadero roadway and sidewalk adjacent to Piers 15/17 that were suggested by members of the public and the DRB, including flattening the existing art ribbons, straightening the Green Street crosswalk, constructing sidewalk bulb-outs at the northwest and southwest corners of the Green Street/Embarcadero intersection, and removing the existing southbound left turn lane from Embarcadero into Piers 15/17.

e. **Pier 17 North Apron.** The applicants are proposing to install a transformer at the northwest corner of Pier 17 during Phase 1 of the project and a generator during Phase 2 of the project. There is currently a gate preventing public access and views along the north apron from the Embarcadero. Because the north apron would not be accessible to the public while Baydelta Maritime is leasing this space and this area would be appropriately screened from the Embarcadero promenade by the gate, the location of these structures would not impact views to the Bay. If, in the future, the north apron is opened to public access, the applicants have agreed to enclose the generator and transformer with an approximately 1,675-square-foot utility enclosure, similar to what is proposed within the southwest corner of Pier 15.

The Commission should determine whether the applicants' proposed public access is the maximum feasible consistent with the project.

3. **Public Trust Consistency.** According to the SAP, "…[t]he advice of the State Lands Commission, by letter from its Executive officer, will be used by BCDC in determining the consistency of the proposed use with the Public Trust Doctrine and the Port's Legislative Trust Grant [The Burton Act]…"

On February 8, 2010, the State Lands Commission (SLC) determined that, "the Exploratorium Museum at Piers 15/17 project…is in compliance with the common law Public Trust…" In particular, the letter states that, "[t]he historical preservation of Piers 15/17 is a public trust activity, given that significant public trust uses and public access, including access to view historic maritime structures from the interior and exterior are incorporated into the project." The SLC made four additional comments as part of its trust consistency review. First, the SLC requires the Port to obtain a further trust consistency determination when the Exploratorium occupies two-thirds of the Pier 17 shed for museum related purposes (Phase 2). Second, the SLC requires the applicants to provide a public access plan that would allow an alternate route for facilitating access through Pier 15 when the east apron of Piers 15/17 is closed to public access due to the berthing of navy ships. Thirdly, in its letter, the SLC requires that primary use of the second floor of the new Observatory Building be for water-related exhibits. Finally, the SLC conditions that if, at any time after the Exploratorium has completed the Pier 17 repair work and permanently occupies Pier 17 (Phase 2) and the north apron ceases to be used by Baydelta Maritime [and is not within two years] either: (1) replaced by another public trust use that precludes public use of the north apron; or (2) opened to public access,

then a further trust consistency determination by SLC will be required and a plan by the Port must be submitted for implementing within a reasonable timeframe a public trust use or public access.

The Commission should determine whether the proposed uses would be consistent with the Public Trust doctrine and the Burton Act. The Bay Plan provides that the "purpose of the public trust is to assure that the lands to which it pertains are kept for trust uses, such as commerce, navigation, fisheries, wildlife habitat, recreation and open space."

4. **Natural Resources Policies.** Policy 1 of the Bay Plan policies on Subtidal Areas state: "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." Policy 2 of the Bay Plan policies on Fish, Other Aquatic Organisms, and Wildlife states, in part: "Specific habitats that are needed to conserve, increase, or prevent the extinction of any native species, species threatened or endangered…should be protected…." Policy 4 states that the Commission should "…consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service or [NMFS] whenever a proposed project may adversely affect an endangered or threatened…species" and "...Give appropriate consideration to the recommendations of the [state and federal resource agencies] in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat." Policy 1 of the Bay Plan policies on Water Quality states, "Bay water pollution should be prevented to the greatest extent feasible…" and Policy 2 states that, "…the policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Board, should be the basis for carrying out the Commission's water quality responsibilities."

   The project's FEIR identified four state- or federally-listed species that have the potential to occur within the project site: green sturgeon, central California coast steelhead, Chinook salmon, and the California brown pelican. The FEIR concluded that for each of these four species, there is a low to moderate likelihood that the species will occur within the project site. Green sturgeon, steelhead and Chinook salmon may pass the project site during migration, but would not use it as foraging or spawning habitat. The California brown pelican may occasionally roost on pier buildings and forage in the area, but none were observed on the project site during a survey conducted by a biologist for the FEIR, and the California Natural Diversity Database does not report occurrences of California brown pelicans in the vicinity of the project site. In addition to these listed species, a July 18, 2008 survey revealed that western gulls use the roof of Piers 15/17 for nesting. The FEIR found that demolition or other construction-related activities conducted during the nesting season could result in potentially significant impacts and a violation of the Migratory Bird Treaty Act. The FEIR, however, determined that with implementation of identified mitigation measures, any potential impacts on these species would be reduced to a less than significant level.

   The applicants propose to use a vibratory hammer rather than an impact hammer to install the proposed steel piles to minimize the effects associated with elevated underwater sound levels during pile driving. If geotechnical studies indicate that if an impact hammer is necessary due to unforeseen hard driving conditions, the applicants would limit pile driving to between June 1 and November 30 to avoid potential impacts on fish species, would use a wood cushion between the pile and the impact hammer to attenuate sound levels, and would limit pile driving during periods of minimal current (slack tide). If it is not feasible to use a wood cushion, either a bubble curtain or air

barrier would be used to attenuate sound levels from the steel piles. In addition, if marine mammals are observed within 1,000 feet of the project site, pile driving would cease and only resume once they have completely exited the project site.

The applicants also propose to have a biological monitor approved by the California Department of Fish and Game (CDFG) on site for herring monitoring during pile driving between December 1 and February 28 of any year. If herring spawning is observed, work would cease for a period of two weeks following the spawning event. The area would be surveyed by the biological monitor prior to resuming work to ensure that further work would not impact spawning or newly hatched herring.

To address the potential impacts to western gulls, if such gulls are observed nesting on the project site, the applicants propose to cease construction or demolition activities between March 1 and August 1, the nesting season for western gulls. Prior to the nesting season, all potential nesting areas would be netted with the help of an avian biologist, to prevent nesting.

Regarding the possible introduction of invasive species, the dredging footprint is one that has previously been dredged and maintained at the proposed depth. Ships that would likely use this berthing area would likely berth in an alternate site if this site were not available, therefore, the dredging portion of this project would not create a new opportunity for introduction or spread of invasive species. Similarly, because this area has been dredged, no changes to sediment movement, Bay bathymetry or tidal hydrology are anticipated.

The applicants propose to dredge the berthing area using a clamshell dredge during the time period of June 1st through November 30th, which coincides within the work window established for this location by Tables F-1 and F-2 of Appendix F, "In-Bay Disposal and Dredging", and Figures 3.2 and 3.3 of the Long-Term Management Strategy (LTMS) Management Plan (2001) as amended by U.S. Fish and Wildlife Service (FWS) on May 28, 2004. These windows are designed to reduce or eliminate impacts to listed species by dredging projects. It is also anticipated that fish and wildlife would likely move away from the area during the actual dredging process. However, the dredging equipment would likely entrain benthic fish and organisms. Because this is a relatively small area in the Bay, the benthic fish and invertebrate community will likely regenerate in this area from adjacent areas.

The green sturgeon is listed as threatened by NOAA Fisheries. However, there is currently no take prohibition for this species. However, it is likely that there will be a take prohibition in the coming months. At that time, the applicant may need to apply additional management or mitigation measures to avoid take of this listed species.

A RWQCB water quality certification is required for the proposed construction and demolition activities on Piers 15/17 and a National Pollutant Discharge Elimination System (NPDES) permit is required for the operation of the Bay water heating and cooling system, including the outfall. The applicants are required to obtain the water quality certification prior to the construction of the project and to obtain the NPDES permit prior to operating the Bay water heating and cooling system. These approvals will include conditions that the applicants must incorporate in the project to mitigate for potential water quality and fish impingement and entrainment impacts, including installing intake screens with a minimum wire size and maximum water speed, and returning Bay water that is not chemically treated over a wider surface area, and at an appropriate temperature.

In addition, the applicants have prepared several documents, including a Mitigation Monitoring and Reporting Program (MMRP), Environmental Protection Plan (EPP), and Storm Water Quality Control Plan (SCP) that include the mitigation measures, best management practices, and other conditions that will be incorporated into the project to avoid possible impacts to natural resources.

The Commission should determine whether the proposed project, with the incorporation of the mitigation measures proposed and the advice and permitting requirements of the other resource agencies, would be consistent with the Bay Plan policies regarding fish, other aquatic organisms, and wildlife, and water quality.

5. Dredging. Policies 1 and 2 of the Bay Plan policies on dredging state that, "dredging and dredged material disposal should be conducted in an environmentally and economically sound manner" and that "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 or other important public purpose…; (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 the California Department of Fish and Game, the U.S. Fish and Wildlife Service 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, "Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways…[D]redged material should not be disposed in the Bay and certain waterways unless disposal outside these areas is infeasible and the Commission finds: (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 designated 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 California Department of Fish and Game, the U.S. Fish and Wildlife Service and/or [NMFS]."

   As part of the proposed Exploratorium redevelopment project, Baydelta Maritime, an existing tug and tow operator leasing space inside the Pier 15 bulkhead and the Pier 15 south apron, will be relocated to the interior shed of Pier 17 and its tugboats will be relocated to the north apron of Pier 17. The proposed project involves maintenance dredging of approximately 75,100 cy of material from the Pier 17/19 water basin to a depth of -20 feet mean lower low water (MLLW) plus two feet of overdredge allowance, and disposal of the material at the state and federally-designated Alcatraz (SF-11) disposal site or an upland or deep ocean disposal site. The dredging would be for a water-oriented use, i.e., the berthing of Baydelta Maritime's tugboats. According to the applicants, the amount of dredged material is the minimum necessary to maintain the berthing area to safely accommodate the tugboats, which require a minimum draft of -17 feet MLLW (Exhibit N).

   The RWQCB, in conjunction with the DMMO, reviewed the report characterizing the suitability of dredged sediments for aquatic disposal in San Francisco Bay: *Exploratorium, Pier 17/19 Maintenance Dredging, Sediment Characterization Results Report*, dated September 2009. On September 17, 2009, the DMMO determined that the dredged sediments were suitable for unconfined aquatic disposal (SUAD) at the Alcatraz disposal site (SF-11). On February 8, 2010, the RWQCB issued a water quality certification for the project based on this determination. The disposal amount and location was approved by the LTMS agencies as consistent with the allocations for in-Bay disposal.

As discussed above in the "**Natural Resources Policies"** section, because the dredging would occur within the LTMS work windows of June 1st and November 30th, the project would not likely adversely affect listed species or designated critical habitat.

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

B. **Review Boards**

1. **Engineering Criteria Review Board.** On March 12, 2009, the Commission's Engineering Criteria Review Board (ECRB) reviewed the proposed project for seismic and engineering design safety. The scope of the work reviewed included the work in Phase 1 of the project only, including the physical repair and upgrade of the Pier 15 substructure, bulkhead and pier shed, the removal of deck sections and the addition of pedestrian bridges within the open water area between Piers 15/17, the construction of the new Observatory Building, and the reconstruction of the Pier 17 north apron for Baydelta Maritime's relocation. The ECRB discussed the stability and integrity of the existing seawall, the proposed installation of new large diameter piles and concrete pile caps at the four corners of the project site for lateral stiffness, the applicants' sea-level rise analysis, and the possibility of installing seismic instrumentation at the site to provide information on the effects of earthquakes at the site. The ECRB was satisfied with the engineering criteria used in the design of Phase 1 improvements of the proposed project and strongly encouraged the applicants to set up an array of seismic instruments to monitor the behavior of the structure to future earthquakes. The ECRB requested that the applicants return for review of Phase 2 project improvements.

2. **Design Review Board.** The Design Review Board (DRB) reviewed this project seven times at its meetings of January 7, 2008, March 10, 2008, May 5, 2008, September 8, 2008, November 10, 2008, March 9, 2009 and July 6, 2009. Over one-and-a-half years, the DRB has focused its review on various aspects of the project, including public access, architecture and vehicular circulation. The site plan was revised several times in response to the DRB's comments.

   When reviewing the early iterations of the site plan, the DRB stated that schemes of the courtyard should allow more flexible spaces. The DRB stated that pedestrian circulation was one of the biggest problems with the plan and suggested that maximizing the water area between the buildings may work at odds with improving pedestrian circulation.

   To remedy these concerns, the DRB recommended that greater views of the Bay be provided and that the project's public access move the public towards that Bay view. The DRB called for more design elements that would vary the public's experience. For example, ceremonial ships and research vessels should be prominently displayed at the end of the pier and incorporated into the overall public access design. (However, the DRB cautioned that any proposal for closing the public access at the east end of the pier while ships are present should be carefully considered). Revisions were made to the plan over time, and the DRB eventually approved the public access proposal, including the relationship between the free-of-charge public spaces and the paid outdoor-ticketed area.

   The DRB recommended that the design of all the site furnishings should relate to the Exploratorium's overall mandate and concept of place. All public pedestrian bridges and gates and railings were deemed acceptable. The DRB, however, recommended that some benches include backs, and recommended more diverse styles and an increase in the number of seating options, particularly on the south side.

   Regarding the access proposed along the waterfront and to the site, the DRB recommended that the raised sections of the concrete "art ribbon" be lowered. Due to the increased demand for school buses, personal vehicles, taxis and bicycles, the DRB

acknowledged that adverse impacts to existing vehicular and public access use on the Embarcadero and Herb Caen Way could result from the success of the project. Therefore, the DRB recommended improvements that would foster safe access for children between the bus drop-off area and the Exploratorium entry, and a safe crossing of the Embarcadero for the general public. To accommodate this, the DRB suggested that the entire crossing of the Embarcadero roadway be redesigned. To create a safe crossing, the DRB recommended that the crosswalk on the north side of the Green Street intersection be straightened, that there be safe refuges for pedestrians in the middle of the Embarcadero Roadway, that the southbound left turn pocket be deleted and that the timing of the signals be revised to accommodate pedestrians. (A letter from Michael Cohen of the San Francisco's Mayor's Office to Dan Hodapp of the Port of San Francisco, dated March 9, 2009, was entered into the Design Review Board meeting record. This letter offers the Mayor's Office's support to ensure that these recommended Embarcadero Roadway and sidewalk improvements are financed and built.) Regarding bus loading and unloading, the DRB recommended that the bus pull out extend from the "open water" north of Pier 17 to the Green Street crosswalk. The DRB expressed concern about the interface between bicyclists and bus turning movements. The DRB agreed that a variety of measures would be needed to reduce potential conflicts, including active management, signage for and adaptive management of the bus operations at the curb indents.

Regarding the proposal for electric shuttles within the public access areas, the DRB felt that there would not be so many shuttle trips that such shuttles would impact public access.

Regarding the new Observatory Building between the east end of Piers 15 and 17, the applicants repeatedly revised the structure over one-and-a-half years based, in part, on the DRB's advice. The earliest designs raised a concern about height and massing, particularly as it affected views of the Bay and the proposed open space in the valley between the piers. The DRB also commented on the materials of the new building and its relationship with the adjacent existing structures. After reviewing several designs for this structure, the DRB agreed at its March 9, 2009 meeting, that the design of the Observatory Building was successful and achieved the Commission's public access goals. Further, the DRB noted that the architectural contrast between Pier 15 and the Observatory Building highlighted the difference between the two structures and, in so doing, enhanced both. The DRB encouraged, however, that the east wall of the Observatory Building be further studied in an effort to reduce the contrast of texture, light and shadow on the east wall. The public access within the Observatory Building was added late in the process and was not reviewed by the DRB.

Regarding special public access features, the value of a roof deck on the Observatory Building was considered. Initially, the DRB stated that a roof deck would be an asset to the public and that public access on the roof should be explored.

At its July 6, 2009 meeting the DRB stated that the site planning and architecture had improved and that the project was going in a "wonderful, positive direction."

C. **Environmental Review**. On July 9, 2009, City and County of San Francisco, the lead agency, certified an Environmental Impact Report (EIR) for the proposed project in accordance with the California Environmental Quality Act (CEQA).

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

1. Section 66605
2. Section 66602

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

1. Bay Plan Policies on Fish, Other Aquatic Organisms, and Wildlife (page 16)
2. Bay Plan Policies on Water Quality (page 19)
3. Bay Plan Policies on Subtidal Areas (pages 27-28)
4. Bay Plan Policies on Safety of Fills (pages 32-33)
5. Bay Plan Policies on Dredging (pages 38-40)
6. Bay Plan Policies on Transportation (pages 47-48)
7. Bay Plan Policies on Public Access (pages 59-60)
8. Bay Plan Policies on Appearance, Design, and Scenic Views (page 61)

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

1. SAP General Policies – Required Public Access (page 8)
2. SAP Findings and Policies for the Northeastern Waterfront (pages 16-24)
3. SAP Policies on Open Water Areas (pages 26-29)
4. SAP Policies on Public Access (pages 32-41)
5. SAP Policies on Plan Implementation Requirements (page 45)

Exhibits

A. **Vicinity Map**

B. **Existing Conditions**

C. **Phase 1 Site Plan**

D. **Phase 2 Site Plan**

E. **Proposed Public Access Plan**

F. **SAP Prior Fill Removal Requirement Plan**

G. **Public Access Details – PortWalk access**

H. **Public Access Details – Bayside History Walk**

I. **Public Access Details – Observatory Building, View Corridor**

J. **East Apron Navy Berthing Plan**

K. **Phase 1 Vehicular Circulation Plan**

L. **Phase 2 Vehicular Circulation Plan**

M. **Embarcadero Curb Indents**

N. **Proposed Dredging Plan**