San Francisco Bay Conservation and Development Commission
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September 11, 2015

TO: Commissioners and Alternates

FROM: Lawrence J. Goldzband, Executive Director (415/352-3653; larry.goldzband@bcdc.ca.gov)
Bob Batha, Chief of Permits (415/352-3612; bob.batha@bcdc.ca.gov)

SUBJECT: **Staff Recommendation for Material Amendment No. 38 to BCDC Permit No. 2001.008, Authorizing Caltrans to use Synchronized Explosives to Demolish Pier E3 of the Former East Span of the Bay Bridge**
(For Commission consideration on September 17, 2015)

Recommendation Summary

The staff recommends that the Commission approve the Department of Transportation's (Caltrans) Material Amendment No. 38 to BCDC Permit 2001.008. The original permit, BCDC Permit No. 2001.008 authorized the construction of the new East Span of the San Francisco-Oakland Bay Bridge and required the demolition of the original east span. Amendment No. 38 would authorize the use of controlled explosives to demolish one of the marine foundations (the largest of them) of the original east span of the Bay Bridge. It is anticipated that the resulting debris would fall into the open cellular chambers of the pier foundation below the Bay's mudline. If the controlled implosion proves effective and monitoring determines that the impacts are minimal or manageable, use of controlled implosions may be proposed in the demolition of the remaining in-water piers of the former east span.

As conditioned, the amendment would require:

1. Use and removal of a bubble curtain (blast attenuation system) to dampen the noise and sound pressure waves from the blast;
2. Deployment of monitors to determine the presence of fish, marine mammals, and birds and to deter animals from entering areas where they could be killed or injured from the blast;

3. Extensive monitoring of the biological and water quality impacts of the implosion; and

4. Retrieval of all demolition debris that falls outside the pier footprint or that extends higher than five feet below the mudline. Such debris would be disposed either within the voids of the former pier or at an authorized upland disposal site.

Staff Note

Because the project involves a material amendment to an existing permit, the format of the recommendation is different than recommendations for new permits. This recommendation includes language from the existing permit, as well as the changes proposed by the amendment. Language to be deleted from the permit has been ~~struck through~~ and language to be added to the amended permit has been <u>underlined</u>. Language that has neither been ~~struck through~~ nor <u>underlined</u> is language of the existing permit that will remain unchanged with the adoption of Material Amendment No. 38.

In addition, because the existing permit is 94 pages long (if this amendment is approved, it will be approximately 116 pages long), only those pages that would be changed by the amendment are included here. The complete draft permit, as amended, can be requested from staff, will be available at the public hearing and vote, and can be viewed on line at the Commission's web site.

Staff Recommendation

The staff recommends that the Commission adopt the following resolution, amending existing BCDC Permit No. 2001.008.38:

I. Authorization

A. **Authorized Project**. Subject to the conditions stated below, the permittee, the California Department of Transportation, District 4 (Caltrans), is granted permission to replace the East Span of the San Francisco-Oakland Bay Bridge with a new self-anchored, single-tower, steel suspension bridge and concrete skyway in the City of Oakland, Alameda County, and in the City and County of San Francisco. Authorized work includes:

In the Bay:

1. **Dredging.** Dredge a total of approximately 616,721 cubic yards of material over approximately 99 acres of the Bay to construct portions of a new 2.18-mile-long replacement bridge for the East Span of the San Francisco-Oakland Bay Bridge (SFOBB) and to remove the existing East Span including:

a. **Construction Barge Access Channel (Episode No. 1).** Dredge approximately 216,230 cubic yards of material for a barge access channel to construct the new bridge in shallow water areas and dispose of the material at the federally-approved deep ocean disposal site (DODS) outside the Commission's jurisdiction (Completed);

b. **Construction Dredging (Episode No. 2).** Dredge approximately 187,087 cubic yards of material to construct footing piles and pile caps for the new bridge and dispose of the dredged material at the federally-approved SF-11 Alcatraz disposal site within the Commission's jurisdiction, except the upper twelve feet of Piers E1-E6 (Sediment Sampling and Analysis Plan (SAP) testing locations: N1 and N2) and Piers E15-E18 (SAP testing locations: SFOBB N5) which, because of elevated contaminant levels, will be disposed at an approved upland disposal site outside the Commission's jurisdiction (Completed);

c. **Demolition Barge Access Channel (Episode No. 3).** Dredge approximately 190,680 cubic yards of material for a barge access channel to remove the existing East Span and dispose of the material at an approved upland disposal site for wetland reuse, such as Hamilton or Montezuma, within the Commission's jurisdiction, or at the approved deep-ocean disposal site outside the Commission's jurisdiction;

d. **Demolition Dredging (Episode No. 4).** Dredge approximately 22,724 cubic yards of material to remove the existing bridge piles, tower foundations and associated fender piles and dispose of the material at the federally-approved SF-11 disposal site within the Commission's jurisdiction; and

e. **Experimental Eelgrass Transplant Program Dredging.** Beneficially use approximately 1,200 cubic yards of sand dredged pursuant to BCDC permit and place the material at the Emeryville Flats to construct test plot plateaus at appropriate elevations for eelgrass (Amendment Nos. One, Two, Four, and Five).

2. **Temporary Bay Fill for the Construction of the New East Span.** Place, use and, at project completion, remove a total of approximately 55,669.2 cubic yards of temporary Bay fill covering approximately 14.81 acres of Bay surface area to construct portions of a new 2.18-mile-long replacement bridge for the East Span of the SFOBB including:

   a. **Yerba Buena Island (YBI) Transition/Suspension Span.** Place, use, maintain and, at project completion, remove: (1) approximately 81 cubic yards of temporary, pile supported fill covering approximately 0.40 acres for a barge access dock at Clipper Cove to facilitate delivery of construction materials, equipment and personnel to the project site; (2) approximately 60 cubic yards of temporary, pile-supported fill covering approximately 0.13 acres for portions of a construction access trestle to serve as a construction platform and small boat dock and to facilitate moving construction materials, equipment, and personnel at the east end of YBI; (3) approximately 1.60 acres of temporary, high-level suspended fill to construct portions of falsework to support bridge segments

until adjoining structures are completed; (4) approximately 2,776 cubic yards of temporary submerged fill for falsework piers; (5) approximately 4,512 cubic yards of temporary, submerged fill covering approximately 13,734 square feet of Bay bottom to install a coffercell system and the associated temporary silt curtains required pursuant to special conditions of this amended permit (Amendment No. Twenty); and (6) approximately 1.23 cubic yards of temporary pilings to support a temporary pile-supported trestle, covering approximately 4,069 square feet (0.09 acre) of the Bay for up to 7 years to provide a marine trestle at Coast Guard Cove on the southeast side of YBI for offloading the prefabricated east tie-intruss for the detour while the Self-Anchored Suspension Span is constructed (Amendment Nos. Six and Eleven); (7) as part of the thermal cooling operation at Clipper Cove, temporarily (up to seven years) install three floating rafts supported by floating drums that will cover approximately 192 square feet of Bay surface area and attach three, 12-inch-in-diameter pipes (occupying 77 cubic yards of Bay volume) to the rafts that will withdraw Bay water to be used in the concrete cooling and curing process for the east- and west-bound bridge piers (Amendment No. Seven); (8) install a temporary access trestle at the eastern end of Yerba Buena Island, connecting Yerba Buena Island to the main tower of the Self-Anchored Suspension Span (SAS), Tower 1 (T1) to provide pedestrian, vehicle, and equipment access that will include the following: (a) 22, 36-inch-in-diameter steel pipe piles that will result in the placement 84.78 square feet of Bay fill and will displace 216.2 cubic yards of Bay volume; (b) an access trestle resulting in 6,098.4 (0.14 acre) square feet of pile-supported fill; and (c) a metal footbridge that will connect the trestle to the T1 marine foundation resulting in 6,338.18 (0.14 acre) of temporary pile supported fill (Amendment No. Twenty-Five); and (9) retain a 10-square-foot portion of the temporary construction access trestle at the eastern end of YBI authorized under Amendment No. Twenty-Five (Item I-A-"In the Bay"-2-a-(8), above) and use it for the dismantling phase of the project, and install two additional timber mats and associated plywood to prevent debris, soil and other construction material from entering the Bay. The timber mats and associated plywood will result in the placement of 564 square feet of pile-supported fill and will be retained throughout the dismantling phase of the project and shall be removed upon completion of dismantling activities or by December 31, 2019, whichever is earlier (Amendment No. Thirty-Seven).

b. **Skyway.** Place, use, maintain and, at project completion, remove: (1) approximately 199 cubic yards of temporary, pile-supported fill covering approximately 1.73 acres for a construction access trestle to serve as a construction platform and small boat dock and to facilitate moving construction materials, equipment and personnel; (2) 6.17 acres of temporary, high-level suspended fill for falsework to support bridge segments until adjoining structures are completed; (3) 592 cubic yards of temporary, submerged fill for falsework piers; and (4) 26,928 cubic yards of temporary, submerged fill for 28 cofferdams;

c. **Oakland Touchdown Structures and Approaches.** Place, use, maintain and, at project completion: (1) remove approximately 508 cubic yards of pile-supported fill covering approximately 3.46 acres for portions of a construction access trestle to serve as a construction platform and small boat dock and to facilitate moving construction materials, equipment and personnel; (2) remove approximately 0.48 acres of temporary, low and high-level suspended fill for falsework to support bridge segments until adjoining structures are completed (this falsework will fall within the footprint of the construction access trestle and therefore will not contribute to the overall area of temporary fill); (3) remove approximately 695 cubic yards of temporary, submerged fill for portions of falsework piers; (4) remove approximately 1,500 cubic yards of temporary, submerged fill for seven coffer-dams; (5) remove a 565-square-foot trestle loading ramp at the end of Berth 7 in the Port of Oakland's Outer Harbor supported by six, 24-inch-in-diameter piles occupying 24.8 cubic yards of Bay volume (Amendment No. Eight); and (6) store a 175-square-foot, hollow rock screed that will be used to level rock material within coffercells and will displace 4.6 cubic yards of Bay volume at Port of Oakland's Berth 7 (Amendment No. Eight).

d. **Geofill.** Place, use, maintain and, at project completion, remove: (1) approximately 16,667 cubic yards of temporary, solid fill covering approximately 0.65 acres for portions of a 1,970-linear-foot-long tidal berm in areas north of the Oakland Touchdown. The temporary "geotube" structure, which is a large diameter, water permeable geotextile fabric, will enclose dredged and/or excavated material and protect the work area from tidal and wave action while installing wick drains and placing fill for the westbound roadway; and (2) approximately 833 cubic yards of solid fill covering approximately 0.10 acres for a temporary tidal berm northwest of the Oakland Touchdown to facilitate relocation of the Caltrans maintenance road (the area of the temporary tidal berm will fall within the footprint of the maintenance road and the shadow of the elevated eastbound roadway, both of which are accounted for as permanent Bay fill).

e. **Post-Construction Stormwater Treatment Measures.** As part of the overall stormwater treatment system that will collect and treat stormwater runoff from approximately 143.3 acres (five catchment groups) of existing Caltrans right-of-way from the Oakland Touchdown in the City of Oakland to Temescal Creek in the City of Emeryville along the northside of Highway 80, excavate approximately 7,997 square feet of tidal marsh vegetation and revegetate the area upon completing excavation activities; and (2) install and remove, upon the completion of installation of stormwater treatment measures, 1,866 linear feet of environmentally sensitive area/exclusionary fencing to protect clapper rail and the salt marsh harvest mouse from the intrusion of construction equipment and personnel into sensitive habitat area (Amendment No. Fifteen). In addition, project activities will temporarily impact approximately 1,742 square feet (approximately 0.04 acre) along Radio Road (Amendment No. Eighteen).

3. **Permanent Bay Fill.** Place and use a total of approximately 104,453 cubic yards of permanent Bay fill covering approximately 46.05 acres of Bay surface area to construct portions of a new 2.18-mile-long replacement bridge for the East Span of the SFOBB (Amendment Nos. One, Two, Three, Four and Five):

   a. **YBI Transition/Suspension Span.** Place, use and maintain: (1) approximately 16,786 cubic yards of permanent, submerged fill for footing piles and pile caps; (2) approximately 2,502 cubic yards of permanent, submerged fill for pier fenders; (3) approximately 8.01 acres of permanent, high-level suspended fill for portions of a self-anchored, asymmetrical suspension bridge and cast-in-place, pre-stressed concrete bridge approaches, electrical service platforms, lighting and safety barriers; (4) approximately 0.65 acres of permanent, high-level suspended fill for portions of a bicycle and pedestrian path, one belvedere (view platforms) and safety railings; and (5) repair, retrofit, replace and/or relocate existing drainage outfalls, drainage facilities and utilities and install new outfalls as approved by the Regional Water Quality Control Board (RWQCB);

   b. **Skyway.** Place, use and maintain: (1) approximately 32,819 cubic yards of permanent, submerged fill for footing piles and pile caps; (2) approximately 4,210 cubic yards of permanent, submerged fill for pier fenders; (3) approximately 27.36 acres of permanent, high-level suspended fill for a pre-cast or cast-in place, post tensioned concrete skyway bridges, electrical service platforms, lighting and safety barriers; and (4) approximately 2.97 acres of permanent, high-level suspended fill for a bicycle and pedestrian path, five belvederes and safety railings;

   c. **Oakland Touchdown Structures and Approaches.** Place, use and maintain: (1) approximately 1,354 cubic yards of permanent, submerged fill for footing piles and footing pile caps; (2) approximately 10 cubic yards and 2.79 acres of permanent, low and high-level suspended fill for portions of a cast-in-place, pre-stressed, concrete box-girder bridge, electrical service platforms, lighting and safety barriers; (3) approximately 0.15 acres of permanent, low and high-level suspended fill for portions of a bicycle and pedestrian path and safety railings; (4) repair, retrofit, replace and/or relocate existing drainage outfalls, drainage facilities and utilities and install new outfalls as approved by the RWQCB; and (5) pavement, retaining structures, and safety barriers on Bay fill for the westbound roadway and relocate the Caltrans maintenance road;

   d. **Maintenance Road and Shoreline Protection**. Place, use and maintain a total of approximately 67,284 cubic yards of fill to be comprised of: (1) approximately 44,272 cubic yards of permanent, engineered, solid and earthen fill covering approximately 3.31 acres for the westbound roadway. The new touchdown perimeter will be created by excavating to an elevation of approximately minus 2.6 feet NGVD and backfilling with clean fill material to match the elevations of the Oakland Approach. Vertical wick drains will be placed to purge water during consolidation of the surcharge material and to provide a drainage path for pore

water during a seismic event. All water that drains from the substrate through the wick drains and vertical drains will flow through gravel blankets into the Bay; (2) approximately 1,300 cubic yards of engineered solid and earthen fill covering approximately 0.29 acres to relocate the Caltrans maintenance road; (3) approximately 21,712 cubic yards of engineered rock slope protection to be used as shoreline protection; and (4) repair, retrofit, replace and/or relocate existing drainage outfalls, drainage facilities and utilities; and

e. **Post-Construction Stormwater Treatment Measures**. As part of the overall stormwater treatment system that will collect and treat stormwater runoff from approximately 143.3 acres (five catchment groups) of existing Caltrans right-of-way from the Oakland Touchdown in the City of Oakland to Temescal Creek in the City of Emeryville along the northside of Highway 80, place, use and maintain: (1) a 172-square-foot bypass structure; (2) an 11-square-foot-portion of a maintenance vehicle pullout (MVP)/pump station/electrical cabinet cluster; and (3) 75.37 cubic yards of rock riprap covering 1,366 square feet of area. All items shall be installed as required by the RWQCB (Amendment No. Fifteen).

4. **On-Site Restoration.** Restore on-site, north of the Oakland Touchdown area, approximately 3.07 acres of sand flats and eelgrass beds temporarily impacted by activities associated with constructing portions of a new 2.18 mile-long replacement bridge for the East Span of the SFOBB including:

   a. **Harvest/Replant Eelgrass.** Harvest approximately 0.55 acres of eelgrass from the footprint of the barge access channel prior to dredging and plant test plots in adjacent eelgrass beds north of the Oakland Touchdown area and at Albany Beach and/or Brickyard Cove in Berkeley located within the Eastshore State Park. Place for beneficial use approximately 1,200 cubic yards of sand fill over an approximately 0.52-acre area in the Emeryville Flats to raise bathymetry and create approximately six test plot plateaus for the experimental eelgrass transplant program (Amendment Nos. One, Two, Four, Five);

   b. **Restore Sand Flats.** Restore approximately 0.80 acres of sand flats north of the Oakland Touchdown area that will be affected by the placement of a temporary tidal berm and/or mud boils to their pre-construction elevations and substrate;

   c. **Upland Transition.** Construct and maintain rock slope protection (rip-rap) at the Oakland Touchdown area along the new westbound roadway and create slope gradients of 1(V):3(H) at the toe of the slope which will transition to a 1(V):2(H) gradient at mid-slope;

   d. **Shorebird Roosting Habitat.** Construct shorebird roosting habitat north of the Oakland Touchdown area by placing 734 cubic yards of 1-ton rock approximately 200 feet offshore of the Oakland Touchdown to a height of 6.5 feet NGVD. The roosting island will result in a footprint of 4,047 square feet area of Bay fill and will provide 500 square feet of shorebird roosting habitat above Mean Sea Level (Amendment No. Twelve); and

e. **Surface Sediments.** Place approximately 10,000 cubic yards of sediments, deemed appropriate for the reestablishment of eelgrass pursuant to special conditions of this amended permit, following removal of the temporary marine access trestle at Coast Guard Cove on the southeast side of YBI and restore the area to appropriate elevations to support the reestablishment of eelgrass (Amendment No. Six).

5. **Demolition of the ~~Existing~~ Former East Span.** Remove the former SFOBB East Span to approximately minus 1.5 feet below the existing mud line and dispose or recycle the bridge debris at an approved location outside the Commission's jurisdiction, except as authorized in Items I-A-5-d, e, f, g, and h below. Demolition shall include the following:

   a. Remove, dispose and/or recycle approximately 12.5 acres of mostly high-level suspended fill comprised of painted steel, concrete, and other materials for the bridge deck and superstructure;

   b. Remove, dispose and/or recycle approximately 74,144 cubic yards of submerged fill comprised of concrete and other materials for the bridge piers and footing piles;

   c. Remove and dispose approximately 4,685 cubic yards of solid fill for pier fenders comprised of treated wood and other materials;

   d. Dispose approximately 5,600 cubic yards of inert, non-toxic material (e.g., concrete and steel rebar) from the demolition of the Pier E3 pile cap into the interior of the Pier E3 caisson. It is expected that the demolition debris placed inside the interior of the caisson will land approximately -175 feet below the mud line in the hollow interior of the caisson, occupying approximately 3,345 square feet of the Bay floor. Because the debris is completely contained within the caisson, it will not displace additional Bay volume or cover additional Bay area (Amendment No. Thirty-Nine);

   e. Remove Pier E3 with controlled charges (Pier E3, because it was constructed prior to the Commission's jurisdiction, is considered to be within the 100-foot shoreline band though in the seconds following the implosion, the area occupied by the pier will become part of the Bay), imploding the pier into its open cellular chambers below the mudline, and resulting in the placement of demolition debris below the Bay bottom. Approximately one week before the actual implosion, conduct a much smaller test blast to test monitoring equipment (Material Amendment No. Thirty-Eight);

   f. Temporarily (for approximately one month) install and within three weeks after the implosion, remove, a Blast Attenuation System (BAS or bubble curtain) to minimize the implosion's impacts to biological resources in the Bay (Material Amendment No. Thirty-Eight);

g. For seven days around the implosion, place up to 12 fish cages, each cage containing from 0 to approximately 50 juvenile salmon (four to six inches long), at stations of varying distances from Pier E3 to assess the blast effects on live fish (Material Amendment No. Thirty-Eight);

h. Following the implosion, place up to 16,104 cubic yards of concrete and steel debris from the former Pier E3 within the cellular chambers of the pier to no higher than five feet below the mudline (Material Amendment No. Thirty-Eight); and

i. Remove all concrete and steel debris that falls outside the Pier's footprint, cannot be placed within the Pier's cellular voids, or extends higher than five feet below the mudline to an authorized upland location outside the Commission's (Material Amendment No. Thirty-Eight);

6. **Temporary Fill for Dismantling the Existing East Span (Material Amendment No. Thirty-Two)**. Place, temporarily use, maintain in-kind, and, at project completion, remove:

   a. **The YBI Access Trestle**. An approximately 7,000-square-foot (0.16 acres), temporary, pile-supported trestle on the southeast side of YBI to facilitate hauling materials resulting from dismantling of the cantilever superstructure and to mobilize equipment and personnel (Material Amendment No. Thirty-Two);

   b. **The Oakland Trestle**. An approximately 96,000-square-foot (2.2 acres), temporary, pile-supported trestle at the southwest side of the East Span extending from the City of Oakland shoreline (potentially as far as Pier E9 of the existing East Span) with "fingers" extending underneath the East Span to facilitate dismantling of the superstructure (Material Amendment No. Thirty-Two); and

   c. **Trestle Piles and Temporary Supports**. (1) Place up to 7,461 cubic yards of solid fill associated with 2,540, twenty-four-inch-in-diameter temporary support piles, or up to 9,704 cubic yards of solid fill associated with 1,560, thirty-six-inch-in-diameter temporary support piles including: (i) up to 100 H-piles for falsework to assist in dismantling at the west end of the cantilever; (ii) up to 700 piles for the Oakland Trestle; and (iii) up to 1,590 piles over a maximum area of approximately 6,323 square feet (0.15 acres) for falsework to support bridge segments until adjoining structures are dismantled; and install up to 150 piles for spuds, fenders, mooring, access and other dismantling activities over a maximum area of approximately 1,065 square feet area (0.02 acres) (Material Amendment No. Thirty-Two); and (2) Place, use and remove upon project completion up to 36, 14-inch-in-diameter H-piles resulting in the placement of 8.5 square feet of Bay fill and displacing 5 cubic yards of Bay volume to facilitate demolition of the west end of the cantilever at the eastern end of YBI (Amendment No. Thirty-Four).

d. **Temporary Access Trestle-YBI to the Main Tower of the SAS.** Retain a 10-square-foot portion of the temporary access trestle (authorized under Amendment No. 25) to be used throughout the duration of dismantling activities and install 564 square feet of associated timber mats and plywood to prevent debris from entering the Bay (Amendment No. Thirty-Seven).

7. **Repair, Replace and Maintain Improvements**. Repair, replace and maintain on an in-kind basis only, all improvements authorized in the Bay to the plans and specifications approved by or on behalf of the Commission.

8. **Off-Site Eelgrass Restoration, Phase I.** Conduct a three year-long pilot eelgrass restoration study within the Eastshore State Park, at the North Basin, in the City of Berkeley. The study will include the following activities: (a) place an earth reinforcement mattress and engineering fabric over an approximately 48,500-square-foot area of the Bay floor to aid in displacing the weight of the fill material and to provide a stable surface for construction equipment; (b) place 3,900 cubic yards of appropriate fill material (e.g., coarse sand) over the approximately 48,500-square-foot area to establish an eelgrass plateau; (c) add transects that are parallel to the shore; (d) plant the plateau with donor eelgrass plugs obtained at nearby locations; and (e) monitor the pilot site through Summer 2008 (Amendment No. Twelve).

9. **Off-Site Eelgrass Restoration, Phase II.** Use all unused funding from the eelgrass restoration fund (approximately $1.5 million plus all accrued interest remaining in the $2.5 million fund for shallow water habitat improvements at Eastshore State Park required in Special Condition II-F-10-b) for a Bay-wide eelgrass research and restoration program that gives priority to East Bay restoration projects, which will be implemented by the National Marine Fisheries Service under contract with the permittee (Amendment Nos. Twenty-Six and Thirty-One).

Within the 100-foot shoreline band:

1. **Temporary Shoreline Band Structures.** Place, use, maintain and, at project completion, remove a total of approximately 2.03 acres of temporary structures to construct portions of a new 2.18 mile-long replacement bridge for the East Span of the SFOBB including:

   a. **YBI Transition/Suspension Span.** Place, use, maintain and, at project completion, remove: (1) approximately 65 square feet for portions of a temporary, pile-supported construction access trestle to serve as a construction platform and small boat dock to facilitate moving construction materials, equipment, and personnel; (2) approximately 1.40 acres (the original permit authorized 0.13 acres) and Amendment No. 14 authorized an additional 1.27 acres of falsework) of temporary, high-level suspended structures for portions of falsework to support bridge segments until adjoining structures are completed; (3) 420 square feet for temporary falsework piers; (4) 7,793 square feet of armor rock as part of constructing a temporary coffercell system (Amendment No. Twenty); (5) 0.09 acres for a temporary construction staging area 0.02 acres of which is associated with the U.S. Coast Guard (USCG)

employee shuttle turn-around on YBI (Amendment No. Eleven); (6) 0.16 acres to temporarily relocate a portion of the USCG Road; (7) 0.15 acres to temporarily relocate a portion of the Torpedo Factory Road; (8) approximately 0.75 acre of a temporary, land-based skid rail structure that will allow the temporary east tie-intruss to be moved from a barge utilizing the access trestle to the falsework below the existing bridge, and may be also be used for dismantling of the existing bridge (Amendment No. Six); (9) as part of the thermal cooling operation at Clipper Cove, connect the pipes placed on rafts on the Bay with two, twelve-inch-diameter pipes that will run along 100 feet of the shoreline (Amendment No. Seven); (10) construct a 222-square-foot wooden staircase on the slope adjacent to the Torpedo Building on YBI to provide access to the work area at Pier T1 (Amendment No. Eleven); (11) place, use and maintain temporary equipment associated with construction of the east span replacement, such as but not limited to lighting, generators, storage boxes, etc., on Yerba Buena Island, and remove all such equipment from the Commission's jurisdiction upon completion of the replacement span (Amendment No. Fifteen); (12) approximately 16,445 square feet (0.38 acres) consisting of 12,240 square feet of low level, pile supported fill and 4,196 square feet of solid fill for two access ramps to construct a crane runway platform just east of Coast Guard Cove on the southeast side of YBI that will support the construction of the temporary East Tie-In decks of the South-South Detour (SSD) bridge, the temporary skid rail structure and perform the Roll Out/Roll In operation. A section of the existing East Span bridge decks east of Pier E-1 will be disconnected from the existing bridge and rolled-out along a temporary skid rail structure to temporary towers on the north-side of the existing East Span. The new temporary East Tie-In bridge decks will then be rolled-in along the skid rail structure. This work is tentatively scheduled to take place during the Labor Day 2009 weekend when the SFOBB will be closed to perform the Roll-out/Roll-In operation (Amendment No. Twenty-Two); (13) part of the temporary construction access trestle at the eastern end of Yerba Buena Island, connecting Yerba Buena Island to the main tower of the Self-Anchored Suspension Span (SAS), Tower (T1), install a 64-square-foot timber sill and a 250-square-foot earthen access ramp that will provide access to the temporary trestle (Amendment No. Twenty-Five); and (14) retain the abutment and ramp (approximately 314 square feet) associated with the temporary construction access trestle at the eastern end of YBI and authorized under Amendment No Twenty-Five (Items I-A-"Within the 100-foot Shoreline Band"-1-a, above) for the duration of dismantling activities and remove the structures upon completion of dismantling activities or by December 31, 2019, whichever is earlier (Amendment No. Thirty-Seven).

b. **Oakland Touchdown Structures and Approaches.** Construct, use, maintain and, at project completion, remove: (1) approximately 0.16 acres for portions of temporary falsework piers; (2) approximately 344 square feet for portions of cofferdams; and (3) temporary construction staging areas, at Pier 7 and Berth 9 at the Port of Oakland and the former Oakland Army Base;

c. **Geofill.** Construct, use, maintain and, at project completion, remove: (1) approximately 527 square feet for portions of an approximately 1,970-foot-long, geotube to temporarily protect the work area from tidal and wave action and to facilitate installation of wick drains and the placement of fill for the westbound roadway; and

d. **Post-Construction Stormwater Treatment.** As part of the overall stormwater treatment system that will collect and treat stormwater runoff from approximately 143.3 acres (five catchment groups) of existing Caltrans right-of-way from the Oakland Touchdown in the City of Oakland to Temescal Creek in the City of Emeryville along the northside of Highway 80, install, use, maintain and remove, at project completion, to a location outside of the Commission's jurisdiction: (1) approximately 1,568 linear feet of 32-inch-high K-rail for the health and safety of the traveling public and construction workers; and (2) approximately 7,915 linear feet of environmentally sensitive area/ exclusionary fencing to protect clapper rail and the salt marsh harvest mouse from the instruction of construction equipment and personnel into sensitive habitat (Amendment No. Fifteen).

e. **Wildlife Exclusion Fence.** Until February 1, 2012, install, use, and maintain approximately 2,800 feet of three-foot-high, black polyvinyl temporary fencing along the southern boundary of the Oakland-Emeryville Wildlife Priority Land Use Area (San Francisco Bay Plan), to minimize movement of Canadian geese onto the I-80 roadway between Temescal Creek and 500 feet west of the HOV on-ramp at the SFOBB toll plaza (Amendment No. Twenty-Four).

2. **Temporary Shoreline Band Structures Associated With the Demolition of the East Span Structure.**

a. Place, use and remove, upon project completion, a total of 12, 14-inch-in-diameter H-piles covering 3 square feet that will be used to facilitate demolition of the west end of the cantilever (Amendment No. Thirty-Four); and

b. **Temporary Access Trestle-YBI to the Main Tower of the SAS.** Retain the abutment and ramp (approximately 314 square feet) associated with the temporary access trestle (authorized under Amendment No. Twenty-Five) for the duration of dismantling activities (Amendment No. Thirty-Seven).

3. **Permanent Shoreline Band Structures.** Place, use and maintain a total of approximately 8.17 acres of new, permanent structures for portions of a new 2.18 mile-long replacement bridge for the East Span of the SFOBB including:

a. **YBI Transition/Suspension Span.** Construct, use and maintain: (1) approximately 452 square feet for permanent support piers, footing piles and footing pile caps; (2) approximately 1.01 acres of permanent high-level, suspended structures for the self-anchored, asymmetrical suspension bridge and cast-in-place, pre-stressed concrete bridge approaches, electrical service platforms, lighting and safety barriers; (3) approximately 0.10 acres of permanent high-level suspended structures for portions of a bicycle and

pedestrian path and safety railings; (4) repair, retrofit, replace and/or relocate, existing drainage outfalls, drainage facilities and utilities and install new outfalls as approved by the RWQCB; and (5) Restore the hillside slope at the locations of Temporary Foundations A1 and B1 of the self-anchored suspension span by installing an 899-square-foot, sculpted, shotcrete wall (361 square feet at location A1 and 538 square feet at location B1) that shall be constructed to simulate the appearance of rock and stained to match surrounding rock colors (Amendment No. Thirty-Five); and

b. **Oakland Touchdown Structures and Approaches.** Construct, use and maintain: (1) approximately 334 square feet of permanent support piers, footing piles and pile caps; (2) approximately 1.31 acres of permanent low and high-level suspended structures for portions of a cast-in-place, pre-stressed, concrete box-girder bridge, electrical service platforms, lighting and safety barriers; (3) approximately 0.19 acres of permanent low and high-level suspended structures for portions of a bicycle and pedestrian path and safety railings; (4) approximately 2.46 acres of pavement for the at-grade westbound roadway and approximately 0.61 of pavement for the at-grade eastbound roadway; (5) repair, retrofit, replace and/or relocate, existing drainage outfalls, drainage facilities and utilities and install new outfalls as approved by the RWQCB; (6) approximately 0.84 acres of pavement for the at-grade Caltrans maintenance road; and (7) place pavement, retaining structures, and safety barriers on the fill for the westbound roadway and relocate the Caltrans maintenance road.

c. **Future Site of Gateway Park.** Construct, use and maintain an approximately 3,668-square-foot portion of a bus turn-around located southeast of a temporary 43-stall, public access parking lot in accord with the plan entitled, "Gateway Park, Bus Turn Around", prepared by Caltrans and received in BCDC's office on March 3, 2010 (Amendment No. Twenty-Seven).

d. **Repairs to Burma Road.** To maintain access during the construction and use of the Oakland Touchdown Detour (OTD), repave and temporarily use (until December 31, 2014), a 0.5 mile long, 34- to 38-foot-wide segment of Burma Road of which a 0.125 mile section is located within the Commission's 100-foot shoreline band; and install a temporary 6-foot-high, 0.5 mile chain link fence, (0.125 mile is located within the Commission's shoreline band) 3 to 6 feet south of the southern edge of Burma Road, and remove the fence by December 31, 2014 (Amendment No. Twenty-Nine).

e. **U.S. Coast Guard Base at Yerba Buena Island**. Install, use, and maintain 4,385-square-foot portion of a 6,339 basketball/volleyball court, 5,243 square feet of associated pathways, resurface an existing 9,695-square-foot parking lot with asphalt and install, use, and maintain a 12-foot-high, 187-foot-long black vinyl chain link fence enclosing the court, three removable bollards, landscaping and a retractable vehicular barrier (Amendment No. Thirty-Three).

4. **Post-Construction Stormwater Treatment.** As part of the overall stormwater treatment system that will collect and treat stormwater runoff from approximately 143.3 acres (five catchment groups) of existing Caltrans right-of-way from the Oakland Touchdown in the City of Oakland to Temescal Creek in the City of Emeryville along the north side of Highway 80, install, use and maintain: (a) approximately 9,095 linear feet of 24-inch-diameter drainage pipe that will be placed below grade by trenching and pipe jacking and associated drop inlets and manholes totaling 132 square feet; (b) four pump stations and four electrical cabinets at four maintenance vehicle pullout out areas all totaling approximately 10,721 square feet; (c) existing utilities; and (d) approximately two new outfalls covering 10,851 square feet and one drainage basin. Project activities will temporarily impact approximately 91,912 square feet (approximately 2.11 acres) of upland transition habitat located in a wildlife priority use area (Bay Plan Map No. 4) (Amendment No. Fifteen authorizes approximately 26,834 square feet (0.62 acre) of these temporary impacts within the wildlife priority use area. Amendment No. Eighteen authorizes an additional approximately 64,904 square feet (1.49 acres) of these temporary impacts and permanent impacts to 3,897 square feet (0.09 acre) of upland transition habitat also located in a wildlife priority use area. In addition, project activities will temporarily impact approximately 17,424 square feet (approximately 0.40 acre) of area that was required as mitigation under BCDC Permit No. 1993.011.00 for the Cypress (Amendment No. Fifteen authorizes approximately 3,101 square feet (0.07 acres) of these temporary impacts and Amendment No. Eighteen authorizes approximately 14,375 square feet (0.33 acre) of these temporary impacts) within the Cypress Mitigation area and permanently impact 1,539 square feet (0.04 acre) of area that was required as mitigation under BCDC Permit No. 1993.011.00. Further, the project activities will temporarily impact approximately 131 square feet (0.003 acre) of upland transition habitat within the 100-foot shoreline band but outside the wildlife priority use area and the area required as mitigation under BCDC Permit No. 1993.011.00 (Amendment Nos. Fifteen and Eighteen as corrected).

5. **On-Site Restoration.** Restore and repair, in-kind and, as needed, areas disturbed by construction activities including, but not limited to, natural features such as landscaping, shoreline slopes, beaches, and constructed features such as buildings, utilities, roadways and other structures.

6. **Repair, Replace and Maintain Improvements.** Repair, replace and maintain on an in-kind basis only, all authorized improvements to the plans and specifications approved by or on behalf of the Commission.

B. **Application Dates.** This amended authority is generally pursuant to and limited by the application filed on October 17, 2001; Caltran's letter dated March 7, 2002, requesting Amendment No. One; the letter dated April 10, 2002, requesting Amendment No. Two; the letter dated May 28, 2002, requesting Amendment No Three; the letter dated June 25, 2002, requesting Amendment No. Four; the letter dated September 10, 2002, requesting Amendment No. Five; the letter dated July 8, 2003, requesting Amendment No. Six; the letters dated November 24, 2003, and January 16, 2004, requesting

Amendment No Seven; the letter dated October 15, 2003, requesting Amendment No. Eight; the letter dated February 24, 2004, requesting Amendment No. Nine; the letters dated April 22, 2004 and June 3, 2004, requesting Amendment No. Ten; the letters dated October 8, 2004 and October 22, 2004 requesting Amendment No. Eleven; the emails dated March 17, 2005 and March 22, 2005 requesting Amendment No. Twelve; the letter dated May 31, 2005, requesting Amendment No. Thirteen; the letter dated October 13, 2005, requesting Amendment No. Fourteen; the letter dated March 8, 2006, requesting Amendment No. Fifteen; the letter dated May 12, 2006, requesting Amendment No. Sixteen; the letter dated June 11, 2007, requesting Amendment No. Seventeen, the letter dated September 6, 2007, requesting Amendment No. Eighteen; the letter dated February 22, 2008, requesting Amendment No. Nineteen (withdrawn by the letter dated September 3, 2008); the letter dated April 16, 2008, requesting Amendment No. Twenty; the letter dated June 16, 2008, requesting Amendment No. Twenty-One; the letter dated September 11, 2008, requesting Amendment No. 22 (erroneously labeled Amendment No. Nineteen); the letter dated September 18, 2008 requesting Amendment No. Twenty-Three (withdrawn); the letter dated December 15, 2008 requesting Amendment No. Twenty-Four; the letter dated July 8, 2009, requesting Amendment No. Twenty-Five; the letter dated October 1, 2009, requesting Amendment No. Twenty-Six; the letter dated January 5, 2010, requesting Amendment No. Twenty-Seven; the letter dated March 10, 2010, requesting Amendment No. Twenty-Eight; the letter dated December 1, 2010, requesting Amendment No. Twenty-Nine; the letter dated May 24, 2011 requesting Amendment No. Thirty; the letter dated September 7, 2011, requesting Amendment No. Thirty-One, the letter dated October 19, 2011, requesting Material Amendment No. Thirty-Two, the letter dated February 12, 2013, requesting Amendment No. Thirty-Three, the letter dated January 17, 2014 requesting Amendment No. Thirty-Four, the letter dated March 13, 2014, requesting Amendment No. Thirty-Five, the letter dated June 26, 2014, requesting Amendment No. Thirty-Seven, ~~and~~ the letter dated June 3, 2015, requesting Amendment No. Thirty-Nine, <u>and the letters dated March 30, 2015 and June 25, 2015 requesting Material Amendment No. Thirty-Eight,</u> including all accompanying and subsequently submitted correspondence and exhibits and all conditions of this amended permit. Amendment No. Thirty-Seven was issued exclusive of Amendment No. Thirty-Six. Amendment No. Thirty-Nine was issued exclusive of Amendment Nos. Thirty-Six and Thirty-Eight.

C. **Deadlines for Commencing and Completing Authorized Work**. The original work authorized herein was required to commence prior to January 1, 2003, or this amended permit will lapse and become null and void. All work was also required to be diligently pursued to completion, and must be completed by January 1, 2014, unless an extension of time is granted by a further amendment of this amended permit. The post-construction stormwater treatment system authorized under Amendment No. Fifteen was to commence no later than December 31, 2006, unless an extension of time was granted by further amendment of this amended permit. Such work was also to be diligently pursued to completion and completed within two years of commencement or by December 31, 2008, whichever is earlier, unless an extension of time was granted by further amendment of this amended permit. The coffer-cell system on the east side of

YBI authorized under Amendment No. Twenty was to be pursued to completion and completed by November 30, 2008, unless an extension of time was granted by further amendment of this amended permit. Amendment No. Twenty-Two authorized a time extension, until August 1, 2010, to commence demolition at Skaggs Island (a part of the approved project's mitigation) and, until July 1, 2012, to begin wetland restoration activities at Skaggs Island, a requirement contained in Special Condition II-F-10-a of this amended permit and thus, did not result in changes to the overall construction time frame for the SFOBB. Amendment No. Twenty-Four authorized the installation of a temporary wildlife fence along the I-80 adjacent to the Emeryville Crescent and thus, did not result in changes to the overall construction time frame for the SFOBB contained in Section I-B. Work authorized under Amendment No. Twenty-Five (construction of the temporary access trestle to SAS T1 at the eastern end of Yerba Buena Island) shall commence prior to July 1, 2010, or this amended permit will lapse and become null and void. Such work must also be diligently pursued to completion and completed by December 1, 2010, unless an extension of time is granted by further amendment of this amended permit. Work authorized under Amendment No. Twenty-Six involves revising language contained under Special Condition II-F-10 regarding the use of money set aside for eelgrass mitigation and does not result in changes to the construction commencement and completion dates contained herein. The bus turn-around authorized under Amendment No. Twenty-Seven shall be constructed and completed within one year of the opening of the replacement bridge to vehicular traffic. Amendment No. Twenty-Seven extends the date for the permittee to guarantee required public access improvements at the Oakland touchdown and Yerba Buena Island. Amendment No. Twenty-Eight extends the removal date for a crane platform that was previously authorized and does not result in revisions to the overall construction commencement and completion dates required herein. The maintenance road improvements and fence relocation along Burma Road authorized under Amendment No. Twenty-Nine shall commence no later than December 31, 2011, or the authorization for the Burma Road improvements and fence relocation will lapse and become null and void. Such work must also be diligently pursued to completion and completed by March 1, 2012 unless an extension of time is granted by further amendment of this amended permit. The construction of the temporary trestles and falsework associated with demolition of the East Span authorized under Material Amendment No. Thirty-Two shall commence no later than December 31, 2013, or the authorization for these temporary structures will lapse and become null and void. Such work must also be diligently pursued to completion and completed by March 1, 2020 unless an extension of time is granted by further amendment of this amended permit. The transfer of mitigation funds for off-site restoration that is authorized by Amendment No. Thirty-One shall be completed by no later than May 31, 2013. The work authorized under Amendment No. Thirty-Three must commence prior to December 1, 2013, or this amended permit will lapse and become null and void. Such work must also be diligently pursued to completion and completed by December 1, 2014, unless an extension of time is granted by further amendment of this amended permit. The work authorized under Amendment No. Thirty-Four must commence prior to June 30, 2014, or this amended permit will lapse and become null and void. Such

work must also be diligently pursued to completion and completed by March 1, 2020 unless an extension of time is granted by further amendment of this amended permit. The work authorized under Amendment No. Thirty-Five must commence by May 1, 2014, or this amended permit will lapse and become null and void. Such work must also be diligently pursued to completion and completed by August 1, 2014 unless an extension of time is granted by further amendment of this amended permit. The work authorized under Amendment No. Thirty-Seven consists of retaining small sections of a construction trestle for use in dismantling the former east span, and modifying sections of the trestles for such use. Work associated with Amendment No. Thirty-Seven shall commence prior to October 31, 2014, and be completed by December 31, 2014, unless extension of time is granted through further amendment of this amended permit. The work authorized under Amendment No. Thirty-Nine (placement of inert, non-toxic, Pier E3 pile cap demolition debris in the interior of the Pier E3 caisson) shall commence no later than September 30, 2015, or this amended authorization shall lapse and become null and void. Such work must also be diligently pursued to completion and completed by December 31, 2015, unless additional time is granted by further amendment of this amended authorization. The work authorized by Material Amendment No. Thirty-Eight, the implosion of Pier E3, shall only occur in November 2015 or in November 2016. The installation of the bubble curtain, the removal, sorting and placement of concrete and steel demolition debris from the implosion, the removal of the bubble curtain, and monitoring shall commence by October 15 of either 2015 or 2016, whichever year the implosion occurs, and shall be completed within three months of the implosion and diligently pursued to completion unless additional time is granted by further amendment of this amended authorization.

D. **Project Summary**. The project authorized herein will result in approximately 46.05 acres of new Bay fill for the bridge and bridge approaches, of which approximately 41.93 acres is high level, suspended fill that will have minimal impacts on Bay resources. The net increase in Bay fill after removing the existing bridge will be approximately 33 acres. However, because the new support footings and pilings will be significantly smaller than the existing bridge footings, the project will result in a net decrease of 173,806 cubic yards in the Bay's volume. The project includes a number of mitigation measures to offset the impacts of the solid and pile-supported fill, as well as the impacts of construction activity. These mitigation measures include, among other things: (a) removing the 1936 East Span, (b) restoring the approximately 1.73-acre barge access channel used to construct the replacement bridge to its pre-construction bathymetry, if Commission policy is changed to allow such restoration; and (c) providing no more than $10.5 million to implement a wetlands restoration program that is being developed, but which may be applied toward the restoration of approximately 3,298 acres of habitat at Skaggs Island in Sonoma County and providing the maximum amount of these remaining funds as possible, but no less than $2.5 million, toward the restoration, enhancement or creation of new aquatic, wetland, or wetland transitional habitat.

Additional fill associated with mitigation activities to offset fill authorized herein will result from the project. The fill consists of placing material over an approximately 48,500-square-foot area to establish eelgrass plateaus at the North Basin for the eelgrass pilot project and placing rock and fabric over a 4,047-square-foot area to create 500 square feet of shorebird roosting habitat above Mean Sea Level (Amendment No. Twelve). The project authorized by Material Amendment No. Thirty-Two will result in the temporary placement of approximately 108,431 to 110,388 square feet (2.49 to 2.53 acres) of temporary pile-supported Bay fill for two temporary demolition trestles and the temporary supports for falsework, all of which will be removed upon completion of the project (Material Amendment No. Thirty-Two).

Amendment No. Thirty-Nine will result in the placement of approximately 5,600 cubic yards of Bay fill (debris from demolition of the Pier 3 pile cap) within the hollow interior of the Pier 3 caisson, approximately 175 feet below the Bay floor. Material Amendment No. Thirty-Eight will result in the placement of an additional 16,104 cubic yards of Bay fill (debris from demolition of the remainder of Pier E3) within the hollow interior of the Pier E3 caisson. The debris from the work authorized in both Amendments No. Thirty-Eight and Thirty-Nine will cover approximately 3,345 square feet of the Bay floor located within the Pier E3 caisson. The fill associated with Amendments No. Thirty-Eight and Thirty-Nine will be completely contained within the hollow voids of the pier caisson and will thus not occupy additional Bay volume or Bay area (Amendments No. Thirty-Eight and Thirty-Nine).

In addition, the project will provide approximately 9.6 acres of new public access, 5.05 acres of which is not required by this amended permit, including a 15.5-foot-wide pedestrian and bicycle lane across the new structure, and a total of six belvederes. Public access required by this permit includes a 0.05-acre terminus at the YBI end of the pedestrian and bicycle trail across the bridge, 4.5 acres of public access at the Oakland Touchdown that includes a 0.86-acre interim parking lot within the permittee's 4.2-acre parcel that will be incorporated into an area known as Gateway Park, and a 0.166-acre trail connecting the bridge trail to a 0.134-acre landing area (Amendment No. Thirty).

II. Special Conditions

The amended authorization made herein shall be subject to the following special conditions, in addition to the standard conditions in Part IV:

A. Specific Plans and Plan Review

1. **Plan Review.** Work authorized herein may be completed under multiple construction contracts. No work shall commence under an individual construction contract until final precise grading, drainage, mobilization, staging, site, engineering, architectural, landscaping, public access and shoreline clean-up plans and other relevant criteria, specifications, and plan information for that portion of the work, for each specific contract, have been submitted to, reviewed, and approved in writing by or on behalf of the Commission for work within the Commission's jurisdiction or for required public access either within or outside the Commission's jurisdiction (Amendment No. Three). The specific drawings and information required will be determined by the Commission staff. To save time,

preliminary drawings should be submitted and approved prior to final drawings. No changes to the design of the project shall be made without the prior written approval by or on behalf of the Commission.

a. **Work Authorized in Amendment No. Thirty-Three.** Work authorized in Amendment No. Thirty-Three at the U.S. Coast Guard Base (USCG) shall conform to the plans entitled, "Attachment A-(USCG Base Design Layout)", Figures 1 through 7, prepared by Caltrans and dated July 16, 2012. No further plan review for the USCG Base improvements authorized under Amendment No. Thirty-Three is required. However, public access improvements at Yerba Buena Island shall require plan approval by or on behalf of the Commission.

b. **Work Authorized in Amendment No. Thirty-Five.** Work authorized in Amendment No. Thirty-Five at YBI shall conform to the plans entitled, "Tower Foundation B1 Hillside Restoration" and "Tower Foundation A1 Hillside Restoration," Sheets SC-002 and SC-004, respectively, prepared by American Bridge/FLUOR and Klohn Crippen Berger, and dated November 2013.

c. **Work Authorized in Amendment No. Thirty-Nine**. Work authorized in Amendment No. Thirty-Nine shall conform to the plan entitled, "Pier E3 Removal-Pier E3 Details, Figure 2. Draft Plan Sheets of Pier E3 Caisson Showing Elevations, Dimensions and Limits of Removal", prepared by the State of California, Department of Transportation, undated and received on April 28, 2015.

2. **Grading, Drainage, Mobilization, Staging, Site, Architectural, Landscaping, and Public Access Plans.** Site, architectural, landscaping and public access plans shall include and clearly label the mean high tide line, or, in areas with marsh vegetation, the line 5.0 feet above mean sea level, the line 100 feet inland of the mean high tide line or the 5.0 feet above mean sea level, property lines, the boundaries of all areas to be reserved for public access purposes and open space, details showing the location, types, dimensions, and materials to be used for all structures, irrigation, landscaping, drainage, erosion control, seating, parking, signs, lighting, fences, paths, trash containers, utilities and other proposed improvements;

   a. **Engineering Plans.** Engineering plans shall include a complete set of contract drawings and specifications and design criteria. The design criteria shall be appropriate to the nature of the project, the use of any structures, soil and foundation conditions at the site, and potential earthquake-induced forces. Final plans shall be signed by the professionals of record and be accompanied by:

      (1) Evidence that the project design complies with all applicable Caltrans design standards and all other applicable codes; and

      (2) Evidence that an independent or in-house peer review panel has reviewed the project (except that such evidence may be waived by the staff, upon consultation with the Chair of the Engineering Criteria Review Board (ECRB), if peer review is determined not to be necessary).

3. **Final Plans for the Temporary Trestles for the Dismantling Work**. The final plans submitted shall generally conform with the plans entitled "San Francisco-Oakland Bay Bridge East Span Seismic Safety Project – Existing East Span Dismantling", prepared by Caltrans and submitted to the Commission as part of the application for Material Amendment No. 32. Final plans for both the YBI and Oakland temporary trestles shall be prepared and submitted for Commission staff review as described below. No changes to the design of the project shall be made without the prior written approval of the Commission staff.

4. **Plan Requirements.** Plans submitted shall be accompanied by a letter requesting plan approval, identifying the type of plans submitted, the portion of the project involved, and indicating whether the plans are final or preliminary. Approval or disapproval shall be based upon:

   a. Completeness and accuracy of the plans in showing the features required above, particularly the mean high tide line or the line 5.0 feet above mean sea level, property lines, and the line 100 feet inland of the mean high tide line or the +5.0 contour line mean sea level, and any other criteria required by this authorization;

   b. Consistency of the plans with the terms and conditions of this authorization;

   c. The provision of the amount and quality of public access to and along the shoreline and in and through the project to the shoreline required by this authorization;

   d. Consistency with legal instruments reserving public access and open space areas;

   e. Assuring that any fill in the Bay does not exceed this authorization and will consist of appropriate shoreline protection materials as determined by or on behalf of the Commission;

   f. Consistency of the plans with the recommendations of the Design Review Board, as applicable;

   g. Consistency of the plans with the recommendations of the Engineering Criteria Review Board; and

   h. Assuring that appropriate provisions have been incorporated for safety in case of a seismic event.

   Plans submitted for review shall be reviewed by or on behalf of the Commission as soon as possible, and shall be completed within 45 days after receipt of the plans to be reviewed.

5. **Conformity with Final Approved Plans.** All work, improvements, and uses shall substantially conform to the final approved plans. Prior to any public use of the facilities authorized herein, the appropriate design professional(s) of record shall certify in writing that, through personal knowledge, the work covered by the authorization has been performed in accordance with the approved design criteria and in substantial conformance with the approved plans. No noticeable changes

shall be made thereafter to any final plans or to the exterior of any outside fixture, railing lighting, landscaping, signage, parking area, public access amenities, or shoreline protection work without first obtaining written approval of the change(s) by or on behalf of the Commission.

6. **Discrepancies between Approved Plans and Special Conditions.** In case of any discrepancy between final approved plans and special conditions of this authorization or legal instruments approved pursuant to this authorization, the special conditions or the legal instrument shall prevail. The permittee is responsible for assuring that all plans accurately and fully reflect the special conditions of this authorization and any legal instruments submitted pursuant to this authorization.

B. **Public Access**

1. **Area.** The permittee shall make the following areas, totaling 4.55 acres, available exclusively to the public for unrestricted public access for walking, bicycling, sitting, viewing, and other related purposes, as revised by Amendment No. Thirty and shown on Exhibit A. If the permittee wishes to use the public access area for other than public access purposes, it must obtain prior written approval by or on behalf of the Commission.

   a. **Oakland Touchdown.** The permittee shall provide 4.5 acres of public access at the Oakland Touchdown consisting of: (1) a 4.2-acre parcel located south of the new bridge touchdown that shall become part of the East Bay Regional Park District's Gateway Park and an 0.86-acre (37,470-square-foot) area public access parking lot; and (2) a 0.3-acre area that shall include a 0.166-acre (7,064-square-foot) trail connecting the bridge trail to a 0.134-acre (5,837-sqaure-foot) public access landing. Use of the 4.2 acres for Gateway Park shall be subject to Caltrans' existing and future operational and maintenance needs, as may be approved by or on behalf of the Commission, such as providing stormwater. Best Management Practices (BMPs) to treat stormwater runoff, providing continuous access to serve and install and maintain, and necessary future utilities, and providing access to maintain the new East Span and at-grade roadways. New utilities and stormwater facilities shall be designed to be consistent with recreation and public access uses in the area.

   b. **YBI Connector, Terminus and Trail Along Southgate Road.** The permittee shall provide, use and maintain a 2,260-square-foot area (0.05-acre) connector and terminus at YBI connecting the bridge trail with public streets on YBI and a 8,450-square-foot public access trail along Southgate Road.

2. **Guarantee.** Prior to completing the dismantling of the existing East Span, but in no case later than August 13, 2015 (Amendment No. Twenty-Seven), the permittee shall, by instrument or instruments acceptable to counsel for the Commission, dedicate to a public agency or otherwise guarantee such rights for the public for so long as the improvements authorized herein remain in place, the approximately 4.5 acre public access area at the Oakland Touchdown and the 0.05-acre trail landing at YBI. The instrument(s) shall create rights in favor of the public, which shall

commence no later than after completion of construction of any public access improvements required by this authorization and prior to the use of the replacement bridge authorized herein. Such instrument(s) shall be in a form that meets recordation requirements of either Alameda or San Francisco County, as applicable, and shall include a legal description of the property being restricted for public access and a map that clearly shows and labels the mean high tide line or the +5.0 foot contour line above mean sea level in marshlands, and other appropriate landmarks and topographic features of the site, such as location and elevation of the top bank of any levees, any significant elevation changes, and the location of the nearest public street and adjacent public access areas. Approval or disapproval of the instrument(s) shall occur within 30 days after submittal for approval and shall be based on the following:

a. Sufficiency of the instrument to create legally enforceable rights and duties to provide the public access area required by this authorization;

b. Inclusion of an exhibit to the instrument that clearly shows the area to be reserved with a legally sufficient description of the boundaries of such area; and

c. Sufficiency of the instrument to create legal rights in favor of the public for public access that will run with the land and be binding on any subsequent purchasers, licensees, and users.

3. **Recordation of the Instrument(s).** Within 30 days after approval of the instrument(s), the permittee shall record the instrument(s) in each relevant County and shall provide evidence of recording to the Commission. No changes shall be made to the instrument(s) after approval without the express written consent by or on behalf of the Commission.

4. **Improvements Within the Total Public Access Area**

a. **Oakland Touchdown.** Within one year of opening the replacement bridge to vehicular traffic, Caltrans shall obtain approval for final construction plans pursuant to Special Condition II.A and complete the following public access improvements and comply with the following:

(1) **Parking Lot.** An approximately 43-stall, 0.86 acre paved parking lot that includes 0.182 acres of sidewalk and landscaping, and a vehicle turn-around. These improvements may be made permanent if desired to be retained as part of Gateway Park, or may be completely removed if no longer needed, as determined by or on behalf of the Commission, in consultation with the East Bay Regional Park District;

(2) **Bridge Connector Path and Landing.** A 15.5-foot-wide, 466-foot-long paved trail and a 0.134-acre landing with a seating area, connecting the new bridge trail with the parking lot and the trail system leading to Emeryville and Oakland, as required by BCDC Permit No. 1993.011.08. For ADA compliance and to delineate the pathway to Emeryville from the rest of the landing, a three-foot-wide row of truncated domes shall be installed across the landing adjacent to the east-bound trail. Placement of bollards shall be limited to

the parking lot entrances. If the temporary parking lot is removed or altered in the future, the landing area may be redesigned to better serve the needs of Gateway Park and the cyclists and pedestrians using the east/west trail system, as determined and approved in writing by or on behalf of the Commission;

(3) **Use of the Maintenance Road.** The permittee shall limit vehicular access to the maintenance road entrances by installing keyed gates or bollards at all vehicle entrance points, to which only Caltrans-authorized entities may have access. Gates or bollards shall not be located on the public access pathway itself without written approval by or on behalf of the Commission, and the public access trail shall be designed so as to maintain a continuous, open and inviting bicycle and pedestrian facility. All vehicles authorized to use the maintenance road shall yield to public access users at all times.

(4) **Maintenance Road Impacts on Public Access.** If vehicle traffic or other activities not related to public access purposes are found to have a significant adverse impact on the safety or quality of the public access trail, as determined by the Commission's Executive Director, the permittee shall propose a plan for revising the signage, striping, or design of the public access and maintenance road interface to resolve the conflict. A permanent redesign shall be installed within 12 months after staff notifies the permittee in writing of the nature of the problem and the extent of needed changes. If staff determines that temporary measures are reasonable and feasible, the permittee shall install such measures within 30 days of being notified. The design changes shall be approved pursuant to Special Condition II.A.

(5) **Landscaping.** Irrigation and native, drought tolerant landscaping within the approximately 4.2-acre public access area, around the parking lot, in the stormwater retention basins to the extent feasible, and adjacent to the public access path, and other public access areas, in accordance with a plan submitted to, reviewed by, and approved by or on behalf of the Commission in accord with Special Condition II-A. The plan and program shall contain the following: (a) a topographic map of the site in half meter or one-foot contours and a conversion into imperial units if metric units are used (Amendment No. Three) (all elevations shall be relative to National Geodetic Vertical Datum (NGVD)); (b) proposed plant species along the contour lines according to their expected zone of growth (for the stormwater Best Management Practices (BMPs) only); (c) a safe, attractive, and obvious path system connecting the public access on the bridge with public access to the nearest public thoroughfare (the Caltrans maintenance road or Burma Road) as required by Special Condition II-B-9 and by BCDC Permit No. 1993.011.00; (d) a management program for water and vegetation in the stormwater BMPs that integrates treating stormwater runoff with providing habitat and attractive public access landscaping; and (e) a schedule indicating when planting will occur. The permittee may maintain any BMP's including those

that are vegetated, to ensure effective and efficient conveyance and treatment of stormwater runoff in accord with a plan approved pursuant to Special Condition II-A; and

(6) **Public Access Signs.** The number and location of public access signage, including Bay Trail signs, shall be prepared in a signage plan to be submitted and approved by or on behalf of the Commission. The appropriate number, location and appearance of the public access signs shall be based on the interim and final design of the public access areas and shall be consistent with the Commission's policies as well as Bay Trail policies (Amendment No. Three). The number, type, and locations of the signs shall be approved by or on behalf of the Commission pursuant to Special Condition II-A above.

b. **YBI Connector and Terminus.** The approximate 2,260-square-foot (0.05 acres) public access area at the YBI Connector and Terminus shall be designed to provide both a terminus for the bicycle/pedestrian path on the new East Span and for its eventual connection to public trails on YBI and shall be built in conformance with the plans entitled, "Attachment B-Bicycle/Pedestrian Terminus and Connector Area," Figures 1 through 3, undated, received in the Commission's office on February 13, 2013, and prepared by Caltrans (Amendment No. Thirty-Three). This area shall include the following improvements:

(1) **YBI Path Terminus.** A pedestrian and bicycle terminus at YBI to be used as the western-most end of the public access path across the new East Span, including a 15.5-foot-wide paved and separated bicycle/pedestrian path;

(2) **Landscaping.** Irrigation and native and drought resistant landscaping adjacent to the public access path and terminus;

(3) **Public Signs.** No fewer than three public access and, where appropriate, Bay Trail signs, one located at the entrance to the YBI path terminus, one at the entrance of the public access path entrance located near the YBI path terminus and connector, one located near the public access path adjoining the bridge at the YBI path connector ramp directing the public to the bicycle and pedestrian path. The number, type, and locations of the signs shall be approved by or on behalf of the commission pursuant to Special Condition II-A above; and

(4) **Amenities.** Two benches, one trash receptacle and four lighting posts shall be installed, the style and location of these amenities shall be approved by or on behalf of the Commission pursuant to Special Condition II-A, above.

c. **New East Span.** The new East Span shall be designed to provide six (6) viewing platforms (belvederes) adjacent to the 15.5-foot-wide pedestrian and bicycle path located on the new bridge. This span shall include the following improvements:

(1) A total of five (5), approximately 158-square-foot belvederes, each with a total of approximately 16 to 24 linear feet of light-weight seating elements, located along the Skyway portion of the new bridge; and

(2) One (1) approximately 263-square-foot belvedere with a total of approximately 24 to 36 linear feet of light-weight seating elements, located on the suspension portion of the new bridge.

5. **Maintenance.** The areas and improvements within all of the new public access areas required or authorized herein, including the YBI terminus, the Oakland Touchdown, and the belvederes and path on the new East Span, totaling approximately 9.6 acres, shall be maintained by and at the expense of the permittee or its assignee for so long as the improvements authorized herein remain in place. In addition, to ensure the fill authorized for the bicycle and pedestrian pathway is retained for such use, such pathway shall also be maintained by and at the expense of the permittee or its assignee for so long as the fill authorized herein remains in place. Such maintenance shall include, but is not limited to, repairs to all path surfaces, replacement of any trees or other plant materials that die or become unkempt, repairs or replacement as needed of any public access amenities such as pathways, signs, benches, trash containers and lights; periodic cleanup of litter and other materials deposited within the access areas, removal of any encroachments into the access areas, removal of graffiti; and assuring that the public access and Bay Trail signs remain in place and visible. Within 60 days after notification by staff, the permittee shall correct any maintenance deficiency noted in a staff inspection of the site.

6. **Assignment.** The permittee may transfer maintenance responsibility to a public agency or another party acceptable to the Commission at such time as the property transfers to a new party in interest but only provided that the transferee agrees in writing, acceptable to counsel for the Commission, to be bound by all terms and conditions of this permit.

7. **Reasonable Rules and Restrictions.** The permittee may impose reasonable rules and restrictions for the use of the public access areas required pursuant to Special Condition II-B-2 above to correct particular problems that may arise<u>, or to address safety concerns, such as the implosion of Pier E3, which may close the public access path on the new East Span for up to three days</u>. Other such limitations, rules, and restrictions shall have first been approved by or on behalf of the Commission upon a finding that the proposed rules would not significantly affect the public nature of the area, would not unduly interfere with reasonable public use of the public access areas, and would tend to correct a specific problem that Caltrans has both identified and substantiated.

8. **Handicapped Accessible.** All public access facilities authorized or required herein shall be designed and built so that they are handicapped accessible.

9. **Public Access Connections.** Within one year of the commencement of construction on any future public access areas and shoreline paths on the adjacent shoreline properties at either end of the new East Span, the permittee shall complete

installation of shoreline paths to connect the new shoreline paths and public access areas on the adjacent properties to the paths and public access areas required herein. The permittee shall reasonably coordinate design, construction, and maintenance with the owners and/or project sponsors of the adjacent properties to connect the public access areas and shoreline paths required herein with any future public access areas and shoreline paths proposed on the adjacent properties to create a continuous public access area. The exact type and locations of the connector paths shall be approved by or on behalf of the Commission pursuant to Special Condition II-A.

C. **Bridge Railings.** The new concrete safety barriers along vehicular travel lanes on the new East Span shall not exceed 32 inches in height. The new bridge railing along the Bay side of the new pedestrian/bicycle path shall not exceed 55 inches in height. Bridge railings shall be designed to provide motorists with the maximum feasible views of the Bay. The design of the bridge railings must be reviewed by or on behalf of the Commission to ensure this objective is achieved and shall not be installed until the design is approved in writing.

D. **Dredging**

1. **Water Quality Approvals.** At least 45 days prior to the commencement of any dredging episode authorized herein, the permittee shall submit to the Executive Director the water quality certification and waste discharge requirements, and/or any other required approvals from the California Regional Water Quality Control Board, San Francisco Bay Region, for that episode. Failure to obtain such certification prior to the commencement of the dredging episode shall terminate the Commission's authorization for that dredging episode. The Executive Director may, upon review of the Regional Board approval, either: (a) approve the dredging episode(s) as consistent with this authorization; or (b) amend the Commission approval to modify existing or include additional conditions related to water quality. If the Executive Director amends the permit to change or add permit conditions, this permit shall become null and void unless the permittee agrees to amend this authorization in a manner specified by or on behalf of the Commission.

2. **Eight Year Permit for the Remaining Dredging Work Associated with the Dismantling of the Existing East Span.** At the time of issuance of Material Amendment No. Thirty, the permittee has completed the dredging work associated with the construction of the new East Span, as authorized under Authorization Sections I-A(1)(a) and I-A(1)(b). The approximately 213,404 cubic yards or less of remaining dredging, for the creation of a temporary demolition barge access channel and the removal of the marine foundations of the existing East Span, as authorized by Authorization Sections I-A(1)(c) and I-A(1)(d) of this permit shall be completed within eight years of the date of issuance of Material Amendment No. Thirty-Two or by March 1, 2020 whichever is earlier. No further dredging is authorized by this permit (Material Amendment No. Thirty-Two).

3. **Dredging Report**

   a. **Prior Notice of Episode.** The permittee shall notify the staff by telephone or in writing at least seven (7) days prior to undertaking any dredging episode. The permittee shall permit the Commission staff or representatives of other state or federal agencies to come aboard the dredge or barge associated with the dredging or disposal episode and observe the operation to ensure that the dredging or disposal activity is consistent with the dredging report required herein and the other terms and conditions of this amended permit.

   b. **Dredging Report.** Within thirty (30) days of completion of each dredging episode of the dredging authorized by this permit, the permittee shall submit to the Commission a report which contains: (1) a bathymetric map showing (a) the location of all areas authorized to be dredged and the authorized depth based on Mean Lower Low Water (MLLW); and (b) the actual areas, and the depth dredged based on MLLW, and any dredging that occurred outside the area authorized to be dredged or below the authorized depths; (2) a vicinity map showing the disposal site; and (3) the actual volume of the material dredged and disposed. The Commis-sion reserves the right to have such report inspected by a reliable third party familiar with bathymetric mapping in order to verify the contents of the report. If a third party selected by or on behalf of the Commission indicates that the report is inaccurate, the Commission reserves the right to require the permittee to submit a revised report that meets the requirements of this condition. If the Commission determines that the contents of the dredging report indicate that work has occurred beyond that authorized by the permit, such violation may result in the initiation of enforcement action by or on behalf of the Commission.

   c. **Dredging Updates.** Every ninety (90) days after the start of dredging operations, the permittee shall submit to the Executive Director updates of the dredging operation plan which describe the dredging activities that occurred within the previous reporting period, including: (1) the location of all areas authorized to be dredged and to what depth based on Mean Lower Low Water (MLLW); (2) the actual areas dredged and to what depth based on MLLW, and any dredging that occurred outside the area authorized to be dredged or below authorized depths; (3) a vicinity map showing the disposal sites; (4) the actual volume of the material dredged and disposed; and (5) the volume of the material disposed of in the Bay. In addition, the updates of the dredging operation plan required herein shall include a plan, as described in Special Condition II-D-3, for the proposed dredging activities to occur during the next reporting period.

   d. **Final Dredging Reports.** Within thirty (30) days of completion of each dredging episode of the new dredging authorized by this permit, the permittee shall submit to the Commission a report which contains a bathymetric map showing: (1) the location of all areas authorized to be dredged and to what depth based on Mean Lower Low Water (MLLW); (2) the actual areas dredged and to what

depth based on MLLW, and any dredging that occurred outside the area authorized to be dredged or below authorized depths; (3) a vicinity map showing the disposal sites; (4) the actual volume of the material dredged and disposed; and (5) the volume of the material disposed of in the Bay. The Commission reserves the right to have such a report inspected by a reliable third party familiar with bathymetric mapping in order to verify the contents of the report. If a third party selected by or on behalf of the Commission indicates that the report is inaccurate, the Commission reserves the right to require the permittee to submit a revised report that meets the requirements of this condition. If the Commission determines that the contents of the dredging report indicate that work has occurred beyond that authorized by the permit, such violation may result in the initiation of an enforcement action against the permittee by or on behalf of the Commission.

4. **Herring.** To protect important fisheries or migrating anadromous fish species, approval of any dredging activities between December 1 and March 31 of any year shall be made by or on behalf of the Commission only upon the finding that: (a) a dredging or disposal operation which was begun prior to December 1 of any year could not be completed by the December 1 deadline due to unforeseen delays; (b) a professional biologist, or other individual sufficiently competent to identify herring spawning activity, is at the project site during all dredging operations; and (c) if herring spawning is detected at or within 200 meters of the dredging operations by the permittee's on-site biologist or qualified staff person, Department of Fish and Game personnel, or the Commission staff, all dredging within 200 meters of the herring spawn (Amendment No. Three) will cease within eight hours of notification of the project engineer for a minimum of 14 days or until it can be determined that the herring hatch has been completed and larval herring concentrations have left the site. To facilitate rapid and efficient communication under these circumstances, the permittee shall provide the Commission staff and Department of Fish and Game personnel with all necessary telephone, FAX, and pager numbers of the Resident Engineer. Dredging may be resumed thereafter at the sole discretion of the permittee and the Commission staff, but shall be terminated no later than December 31 of that year, or if further spawning takes place at the site.

5. **Barge Overflow Sampling and Testing.** Results of any effluent water quality or other testing required by the San Francisco Bay Regional Water Quality Control Board shall be submitted in writing to the Commission's office at the same time that such testing is submitted to the Regional Board.

6. **In-Bay Disposal.** At least 45 days prior to the commencement of any disposal episode authorized herein, the permittee shall submit a written statement to the Executive Director that contains all of the following: (a) the dates within which the dredging and disposal episode is proposed; (b) the total volume of material proposed to be dredged and location of the proposed disposal in the Bay; (c) an explanation as to why ocean or upland disposal of the material is infeasible; (d) an explanation as to how the proposed disposal is consistent with the

U. S. Army Corps of Engineers' management of the disposal site so as to maintain adequate site capacity; and (e) results of chemical and biological testing of material proposed for disposal. The authorization for the dredging and disposal episode shall become effective only when either: (a) the Executive Director informs the permittee in writing that he or she has determined that the episode is consistent with the authorization provided herein, that there is no feasible upland alternative available for the dredged material, that sufficient capacity exists at the disposal site consistent with the long-term management of the disposal site, and that the material is suitable for in-Bay disposal; or (b) the Executive Director does not respond to the permittee's written statement within 30 days of its receipt. If the Executive Director either: (a) determines that ocean or upland disposal of the material is feasible; (b) determines that the material is unsuitable for in-Bay disposal; or (c) is informed by the U. S. Army Corps of Engineers that the proposed disposal would unacceptably reduce disposal site capacity, then such determination shall terminate the Commission's authorization for in-Bay disposal as part of that dredging episode.

7. **Eelgrass Test Plateaus Program.** The permittee may beneficially use sand dredged pursuant to an existing BCDC permit and place minor amounts of sand fill, not to exceed approximately 1,200 cubic yards, to create plateaus at suitable locations and elevations for the planting and establishment of eelgrass at the Emeryville Flats. Dredged sand material shall be tested and determined to be suitable prior to placement in the Bay. The permittee shall provide to the Commission monitoring reports pursuant to Special Condition II-F-5 (Amendment Nos. One, Two, Four, and Five).

8. **Upland Disposal of Material Unsuitable for Aquatic Disposal.** Any dredged material that is determined to be unsuitable for aquatic disposal or for use in marsh restoration at Hamilton or Montezuma or similar site by the Dredged Materials Management Office and the Regional Water Quality Control Board shall be disposed of in an appropriate manner at an upland location outside the Commission's jurisdiction. Prior to the disposal of any such material, the permittee shall submit to the Commission documentation which contains the proposed date and location for the disposal of this material. After the disposal, the permittee shall submit evidence that the material was disposed in an appropriate manner.

9. **Upland Reuse of Dredged Material.** The permittee shall make every effort to dispose as much dredged material as possible that is suitable for such use at upland reuse sites, or at marsh restoration sites, such as Hamilton or Montezuma.

10. **Seasonal Limitations.** No dredging or disposal work inconsistent with the time and location limits contained in Tables F-1 and F-2 of Appendix F, "In-Bay Disposal and Dredging" of the *Long-Term Management Strategy (LTMS) Management Plan* may be conducted without the written approval of the Executive Director, provided that such approval may only be issued after (1) BCDC consults with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the California Department of Fish and Game or any combination thereof, as determined by the

Executive Director; and (2) any required consultation with the appropriate resource agencies pursuant to state or federal endangered species acts has been completed. Such approval, if granted, shall not affect the permittee's obligation to comply with all applicable federal and state laws.

11. **Dredged Material Management Office (DMMO).** Prior to the commencement of dredging and disposal of dredged material for removal of the existing bridge the permittee shall:

    a. Submit a sediment analysis plan to the DMMO for its review;

    b. Adequately characterize the sediment to be dredged and disposed; and

    c. Submit to the DMMO for its review the test results and findings of the material to be dredged and disposed so that a subsequent suitability determination can be made.

E. **Riprap**

1. **Riprap Material.** Riprap material shall be either quarry rock or specially cast or carefully selected concrete pieces free of reinforcing steel and other extraneous material and conforming to quality requirements for specific gravity, absorption, and durability specified by the California Department of Transportation or the U. S. Army Corps of Engineers. The material shall be generally spheroid-shaped. The overall thickness of the slope protection shall be no more than three feet measured perpendicular to the slope. Use of small concrete rubble, concrete pieces with exposed rebar, large and odd shaped pieces of concrete, and asphalt concrete as riprap is prohibited. The permittee may salvage and re-use existing riprap as part of the shoreline protection work at the Oakland Touchdown.

2. **Riprap Placement.** Riprap material shall be placed so that a permanent shoreline with a minimum amount of fill is established by means of an engineered slope not steeper than two (horizontal) to one (vertical). The slope shall be created by the placement of a filter layer protected by riprap material of sufficient size to withstand wind and wave generated forces at the site.

3. **Riprap Plans**

    a. **Design.** Professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes, should participate in the design of the shoreline protection improvements authorized herein.

    b. **Plan Review.** No work whatsoever shall be commenced on the shoreline protection improvements authorized herein until final riprap plans have been submitted to, reviewed, and approved in writing by or on behalf of the Commission pursuant to Special Condition II-A. The plans shall consist of appropriate diagrams and cross-sections that: (1) show and clearly label the mean high tide line, or a line five feet above Mean Sea Level in marshland, property lines, grading limits, and details showing the location, types, and dimensions of all materials to be used; (2) indicate the source of all materials to be used; and (3) indicate who designed the proposed shoreline protection

improvements and their background in coastal engineering and familiarity with the Commission's concerns. Approval or disapproval of the plans shall be based upon: (1) completeness and accuracy of the plans in showing the features required above; (2) consistency of the plans with the terms and conditions of this permit; (3) assuring that the proposed fill material does not exceed this permit; (4) the appropriateness of the types of fill material and their proposed manner of placement; and (5) the preparation of the plans by professionals knowledgeable of the Commission's concerns, such as civil engineers experienced in coastal processes. All improvements constructed pursuant to this permit shall conform to the final approved plans. No changes shall be made thereafter to any final plans or to the constructed shoreline protection improvements without first obtaining written approval of the change(s) by or on behalf of the Commission.

4. **Maintenance.** The shoreline protection improvements authorized herein shall be regularly maintained by, and at the expense of the permittee, any assignee, lessee, sublessee, or other successor in interest to the project. Maintenance shall include, but not be limited to, collecting any riprap materials that become dislodged and repositioning them in appropriate locations within the riprap covered areas, replacing in-kind riprap material that is lost, repairing the required filter fabric as needed, and removing debris that collects on top of the riprap. Within 30 days after notification by the staff of the Commission, the permittee or any successor or assignee shall correct any maintenance deficiency noted by the staff.

F. **Mitigation for Fill Impacts.** The permittee shall fully complete the following mitigation measures to minimize Bay fill and offset the adverse impacts of the project authorized herein on Bay-related resources and endangered species:

1. **Removal of the Existing East Span of the SFOBB.** Within seven years or by March 1, 2020 of opening the eastbound roadway of the new East Span to vehicular traffic, the permittee shall completely remove the existing East Span of the SFOBB covering approximately 12.5 acres of high-level suspended fill for the bridge deck, trusses and girders and approximately 78,829 cubic yards of solid fill of the support piers and footings and pier fenders. All material from the existing East Span shall be removed and disposed of at an authorized location outside of the Commission's jurisdiction, except for the approximately 5,600 cubic yards of material generated from the mechanical, above water-line demolition of the Pier E3 pile cap which shall be placed within the Pier E3 caisson approximately -175 feet below the mud line (Amendment No. Thirty-Nine).

   The permittee shall remove all pilings, support piers and footings to at least 1.5 feet below the existing mudline. Prior to removal of the existing East Span, the permittee shall prepare and submit a removal plan to be approved by or on behalf of the Commission to ensure that the removal plan does not adversely impact Bay-related resources, endangered species, navigation and public health and safety and that sufficient safeguards are included to protect human safety and capture all demolition debris and related substances.

2. **Removal of Temporary Structures Associated with the Construction of the New East Span.** Within one year of opening the eastbound roadway of the new East Span to vehicular traffic, the permittee shall remove approximately 55,669 cubic yards of pile-supported fill covering approximately 14.81 acres (Amendment Nos. Six, Eight, Eleven, Twenty, Twenty-Two and Twenty-Five) of Bay surface area for the temporary access trestles, cofferdams, and falsework, and the 17,500 cubic yards of solid fill for the temporary geotube, which is temporary fill associated with the construction of the new East Span, and shall dispose of all material at authorized locations outside the Commission's jurisdiction. All temporary pilings shall be removed to at least 1.5 feet below the existing mudline.
3. **Marsh and Upland Plant Protection During Construction.** The work authorized by this amended permit shall be performed in a manner that will prevent, avoid, or minimize to the extent possible any significant adverse impact on any tidal marsh, other sensitive wetland resources, and existing native upland vegetation. If any unforeseen adverse impacts occur to any such areas as a result of the activities authorized herein, the permittee shall restore the area to its previous condition, including returning the disturbed area to its original elevation and soil composition and, if the area does not revegetate to its former condition within one year, the permittee shall seed all disturbed areas with appropriate vegetation consistent with plans approved by or on behalf of the Commission. The permittee shall employ mitigation measures to minimize impacts to wetland areas, such as: (1) minimizing all traffic in marsh, mudflat and sandflat areas; (2) fencing environmentally sensitive areas during construction to prevent intrusion into such areas; and (3) carefully removing, storing, and replacing wetland vegetation that has been removed or "peeled back" from construction areas as soon as possible following construction.
4. **Revegetation at the Oakland Touchdown.** Within one year of removing the existing East Span, the permittee shall revegetate the approximately 4.2-acre area at the Oakland Touchdown, required under Special Condition II-B and all shoreline areas impacted by the project, to the extent that such areas fall within the Commission's jurisdiction. The permittee shall coordinate its design of all landscape plans with local city agencies and any other government entity that have an interest in the project and shall strive to use native, drought tolerant landscaping that is appropriate to the micro-climatic conditions of the Central Bay. The permittee shall also work with the East Bay Regional Park District, the Oakland Army Base Reuse Authority, the Port of Oakland, the City of Oakland, the Regional Water Quality Control Board, and all other interested agencies to develop a plan for the treatment of the approximately 4.2-acre area, which East Bay Regional Park District will develop and manage as a portion of Gateway Park. The plans for revegetation of disturbed areas and the disposition of the approximately 4.2-acre area shall be approved by or on behalf of the Commission pursuant to Special Condition II-A.

5. **On-site Eelgrass Bed and Sand Flat Restoration.** Prior to dredging the barge access channel that currently supports eelgrass, the permittee shall harvest eelgrass from approximately 0.55 acres of the barge access channel footprint and transplant to adjacent areas currently supporting stands of eelgrass at the Emeryville Flats and at Albany Beach and/or Brickyard Cove within the Eastshore State Park, or to areas where test plot plateaus have been constructed at elevations suitable for the establishment of eelgrass at the Emeryville Flats. As part of this effort, the permittee shall, in consultation with the Department of Fish and Game and the National Marine Fisheries Service, develop an experimental transplanting program to determine critical factors to the success of transplanting, growing, and sustaining eelgrass. Such a program shall be approved by or on behalf of the Commission, pursuant to Special Condition II-A, and shall include an annual monitoring report for a period of fifteen years that identifies any adverse conditions affecting the success of the transplanting program, any corrective action taken to address these adverse conditions, the relative success of transplants under a variety of conditions as compared to nearby reference sites, successful procedures that promote the establishment and long-term success of eelgrass, coordination with the Port of Oakland's Middle Harbor Eelgrass program, etc. In addition, a separate monitoring program and reporting process shall be established for the portion of the experimental eelgrass transplant program involving the creation of test plot plateaus. The monitoring shall be conducted at intervals of 4, 8, 12, 24 and 48 weeks following the creation of the test plateaus (Amendment No. Nine). On June 18, 2002 the Commission adopted *San Francisco Bay Plan Amendment 1-01* which allows (Amendment Nos. One, Two and Four) amendment of this authorization to restore the bathymetry and soil composition of the barge access channel area to its original condition prior to construction, and transplant eelgrass to the restored channel. In addition, all sand flats temporarily affected at the project site shall be fully restored to their pre-construction conditions and soil conditions existing prior to disturbance or fill placement. A geotextile fabric shall be placed prior to any fill placement for the geotube to facilitate its removal and site restoration.

6. **Coordination with Appropriate Wildlife Agencies to Minimize Impacts to Birds.** Prior to any construction authorized herein proposed in areas that the U. S. Fish and Wildlife Service has determined may impact listed bird species, the permittee shall submit for review and concurrence by or on behalf of the Commission evidence, such as a contract and/or agreement with the U. S. Fish and Wildlife Service, the UC. Santa Cruz Predatory Bird Research Group and/or the Point Reyes Bird Observatory, that will ensure compliance with the terms of the Biological Opinion issued by the U.S. Fish and Wildlife Service with respect to the California least tern and the brown pelican.

   In addition, prior to any construction activities authorized herein proposed in areas that the California Department of Fish and Game has determined may impact listed bird species, the permittee shall submit for review and concurrence by or on behalf of the Commission, evidence that a plan designed to minimize adverse impacts,

such as monitoring procedures approved by the California Department of Fish and Game, in consultation with the Point Reyes Bird Observatory, to the double-crested cormorant *(Phalacrocorax auritus)* colony which exists on the support beams and scaffolding underneath the existing bridge and other migratory bird nesting and breeding on the structure is in place. Such evidence shall include the name and phone number of the individual(s) at the California Department of Fish and Game and the Point Reyes Bird Observatory, and the parties responsible for ensuring that the monitoring procedures are followed.

7. **Creation of Bird Roosting Habitat.** Prior to opening the eastbound roadway of the new East Span to vehicular traffic, the permittee shall develop and implement a plan in consultation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service and local Audubon chapters, and approved by or on behalf of the Commission pursuant to Special Condition II-A, to create approximately 500 square feet of shorebird roosting habitat in the Emeryville Crescent and at other suitable areas near the Oakland Touchdown. The shorebird roosting plan shall include provisions for monitoring and submitting reports to the Commission of shorebird use of the created roosting habitat (monthly bird counts at appropriate tidal stages between September and April for a three-year period), for maintaining sites free of vegetation and, for removing such habitat if it deteriorates sufficiently to create a potential safety or navigation problem, as determined by the Executive Director. Such shorebird roosting habitat may consist of pilings, pile-supported or floating docks, unvegetated beach and riprap areas, etc.

8. **Coordination with Appropriate Wildlife Agencies to Minimize Impacts to Eelgrass Beds.** Prior to any construction authorized within areas that contain eelgrass beds to be transplanted, the permittee shall submit for review and concurrence by or on behalf of the Commission, pursuant to Special Condition II-A, a plan designed to minimize adverse impacts to the existing eelgrass *(Zostera marina)* beds that has been reviewed and approved by the National Marine Fisheries Service, the California Department of Fish and Game, and/or the U. S. Fish and Wildlife Service. The approved plan shall include pre- and post-monitoring surveys of the existing eelgrass beds, silt curtains and operational limitations to minimize turbidity in eelgrass beds and an experimental transplanting and relocation program if determined necessary by the wildlife agencies. Such evidence shall include the name and phone number of the individual(s) at the National Marine Fisheries Service, the California Department of Fish and Game or the U. S. Fish and Wildlife Service responsible for reviewing and approving the plan and the parties responsible for ensuring that the plan is adhered to. Any monitoring reports prepared pursuant to the approved plan shall be sent to the Commission, as well as the final report which assesses the results of the eelgrass mitigation measures.

9. **Coordination with Appropriate Wildlife Agencies to Minimize Impacts to Fish During Pile-Driving.** Prior to any construction activities in the Bay associated with the pile driving authorized herein, the permittee shall submit for review and concurrence by or on behalf of the Commission, pursuant to Special Condition II-A, a plan that has been reviewed and approved by the National Marine Fisheries

Service, the California Department of Fish and Game, and/or the U. S. Fish and Wildlife Service designed to minimize the adverse impacts to fish during pile-driving activities. Caltrans shall adhere to the conditions of the Biological Opinion for this project, which requires that funds totaling $4 million will be placed into an escrow account and expenditures from the account will be made at the discretion of National Marine Fisheries Services and Department of Fish and Game, in consultation with Caltrans and Federal Highway Administration, for the restoration of federal- and state- listed salmonid habitat in central and south Bay. This restoration fund will be used for off-site, out-of-kind mitigation to offset construction-related injury and mortality of listed salmonid. A portion of this fund, up to $500,000, shall be made available by Caltrans, prior to the initiation of construction activities associated with pile driving on the East Span Project for monitoring fisheries impacts, sound pressure levels, and other environmental conditions associated with these activities. Additional mitigation for fish, developed in consultation with the National Marine Fisheries Service and the California Department of Fish and Game, shall be required if monitoring indicates that fish kills are occurring that are related to pile-driving activities. Within one month of expending funds for fish mitigation, Caltrans shall report in writing to the Commission on the mitigation measures to be implemented.

10. **Off-Site Mitigation Program.** Prior to August 31, 2002, the permittee shall create a mitigation fund and deposit the sum of $10.5 million in an interest-bearing account to be dispersed, in its entirety, including principal and interest, as approved by or on behalf of the Commission, after consultation with the California Department of Fish and Game, Regional Water Quality Control Board, U. S. Army Corps of Engineers, U. S. EPA, U. S. Fish and Wildlife Service, and National Marine Fisheries Service, solely to restore Bay shallow water submerged land and wetland habitat. The initial sum of $10.5 million dollars that is required for off-site mitigation is to offset the impacts of the project authorized in the original permit. Any additional temporary or permanent impacts resulting from new work associated with the East Span Replacement Project of the San Francisco-Oakland Bay Bridge and that were not initially authorized, may require additional mitigation or monies for mitigation as determined by the Commission (Amendment Nos. One, Two and Four).

    Preference for using the funds set aside for mitigation shall be: (a) Skaggs Island, consisting of the removal of structures and hazardous materials contained therein to facilitate the transfer of the Navy-owned portion of the site (approximately 3,289 acres) to the State or to the U.S. Fish and Wildlife Service so as to restore it to tidal marsh; and (b) Eastshore State Park sites in the Central Bay, including but not limited to Radio Beach, Brickyard Cove, Albany Beach and Hoffman Marsh or a combination thereof. The mitigation funds required above shall be dispersed in the following manner:

    a. **Skaggs Island.** A total of $8 million will be made available for efforts at Skaggs Island, such that $6 million of the funds including accrued interest, shall be used to remove structures and hazardous materials and $2 million shall be used for work associated with and needed to implement the restoration and long-term

management of Skaggs Island (Amendment Nos. One, Two and Four). Revisions to this allocation may only be approved by the Commission, after consultation with the agencies noted above.

A portion of the fund specified above ($6 million) may be used to remove structures and hazardous materials on Skaggs Island only if: (1) the money is used to remove the structures and hazardous materials therein in a timely manner; (2) $6 million of the funds, plus accrued interest, is used to remove structures and hazardous materials and $2 million is used for work associated with and needed to implement the restoration and long-term management of Skaggs Island (any remaining funds of the $6 million allocated for site clean-up that is not spent cleaning up the site shall be added to the $2 million to be used for work associated with and needed to implement the restoration and long-term management of Skaggs Island including site planning, design and environmental review) and (3) removal and remediation facilitates the restoration of Skaggs Island to tidal and seasonal wetlands as part of an approved restoration plan and schedule.

The $6 million may be provided to the U. S. Navy or a public agency approved by or on behalf of the Commission prior to the transfer of the property to the State or the U. S. Fish and Wildlife Service only if sufficient evidence has been submitted to the Commission that transfer documents to the State or the U.S. Fish and Wildlife Service have been executed by the Navy and placed into escrow and that there are sufficient funds to complete the remediation project.

If, however, the removal of buildings and hazardous material contained therein at Skaggs Island has not commenced by August 1, 2010, the earmarked funds shall be returned to the mitigation fund and Caltrans shall identify other potential mitigation site(s) for approval by or on behalf of the Commission, after consultation with the agencies noted above (Amendment No. Seventeen). If, the Skaggs Island wetland restoration project has not commenced by July 1, 2012, any funds remaining from the initial allocation shall be returned to the mitigation fund and Caltrans shall identify other potential mitigation site(s) for approval by or on behalf of the Commission, after consultation with the agencies noted above. Revisions to these timeframes may be approved by or on behalf of the Commission, after consultation with the agencies listed above. Preference for reallocation of the returned funds will be given to projects involving sandflat and eelgrass restoration in Central San Francisco Bay, including at Eastshore State Park, or projects that provide significant natural resource benefits to the entire Bay.

b. **Eastshore State Park.** As required by the original permit, a total of $2.5 million was made available for Eastshore State Park habitat restoration projects at locations noted above. Any revisions to this allocation were to be approved by the Commission, after consultation with the agencies noted above. Approximately $1.0 million was used~~,~~ between 2005 and 2008 to design and implement a pilot project for creating an eelgrass bed in the City of Berkeley's North Basin. The

pilot project demonstrated that the site was not appropriate for a full-scale eelgrass restoration project. Subsequently, Amendment No. Twenty-Six authorized the remaining funds (approximately $1.5 million plus all accrued interest) to be transferred to the National Marine Fisheries Service (NMFS) for Bay-wide eelgrass research and restoration, with priority given to East-bay sites, as described below (Amendment No. Thirty-One).

1) **Pilot Project**. In the original authorization, the Eastshore State Park sites included restoration of no less than 5.0 acres of sand flats (a 1:1 replacement ratio of affected sandflat habitat) and 10.8 acres of eelgrass beds (a 3 to 1 replacement ratio of affected eelgrass habitat to achieve 3.6 acres of eelgrass) so as to offset the damage caused by the project authorized herein. Eelgrass beds restored at the project site (i.e., within the barge access channel that currently support eelgrass if the Commission's policies regarding in-Bay use of dredged material for habitat restoration is amended) could be included in the overall eelgrass mitigation requirement. Revisions to this formula were to be approved by or on behalf of the Commission, after consultation with the agencies listed above. Before the funds were dispersed to any proposed mitigation site, Caltrans would, after consultation with the entity proposing to restore one of the mitigation sites described above, develop a mitigation plan that conforms to the requirements of Special Condition II-F-11 below. If, however, the habitat restoration projects at Eastshore State Park did not commence~~d~~ by July 1, 2005, the earmarked funds for those projects would be returned to the mitigation fund and Caltrans was required to identify other potential mitigation site(s) for approval by or on behalf of the Commission, after consultation with the agencies noted above. Revisions to the timeframe were to be approved by or on behalf of the Commission, after consultation with the agencies listed above. Preference for reallocation of the returned funds would be given to projects involving sandflat and eelgrass restoration in Central San Francisco Bay, or projects that provide significant natural resource benefits to the entire Bay.

In an attempt to inform the proposed full-scale 15.8-acre eelgrass sand flat restoration effort, the permittee conducted a three year-long pilot study at the North Basin in Berkeley, in general accord with the plan entitled, "North Basin Mitigation Pilot Program Work Plan", dated February 1, 2005. The plan was transmitted with the e-mail from Melissa Barrow of Caltrans, dated March 17, 2005, requesting Amendment No. Twelve to BCDC Permit No. 8-01. This pilot project involved placing approximately 3,900 cubic yards of fill material creating approximately 54,000 square feet of plateaus at elevations expected to support eelgrass. The plateaus were monitored through summer 2008 pursuant to the monitoring protocol described in the work plan and in the permittee's request for Amendment No. 17, dated June 11, 2007, and results of the monitoring were used in assessing the feasibility of implementing the full-scale eelgrass restoration project at the site (Amendment Nos. Twelve and Seventeen).

2) **Mitigation Fund Transfer for Comprehensive Eel Grass Program.** Because eelgrass establishment was sparse and intermittent at the end of the pilot project's monitoring period, the Commission has modified this special condition to allow use of the funds in other ways that would promote eelgrass restoration in the Bay. Specifically, by June 1, 2013, Caltrans shall transfer all remaining funds (approximately $1.5 million plus all accrued interest), to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS). The funds shall be used for a Bay-wide, comprehensive eelgrass restoration program, with priority given to East Bay restoration. Prior to the transfer of funds, the permittee shall submit for BCDC review Cooperative Agreement No. 4-2304 and all of its accompanying exhibits proposed for execution between NMFS and Caltrans, all of which shall be substantially the same as the draft agreement submitted to BCDC on May 31, 2012. The agreement and Exhibit A to the agreement define a five-year Scope of Work for the NMFS eelgrass program and the Technical Review Panel that shall provide the framework and mechanism for BCDC and all relevant resource agencies and stakeholders to provide guidance for the expenditure of the funds on individual projects. If any portion of the mitigation funds remains after the five-year program is completed, restoration activities shall continue with direction provided by the Technical Review Panel. All of the mitigation funds, including interest, shall be expended for the approved program(s) by June 1, 2021 or within eight years of the execution of the cooperative agreement, whichever occurs first, or the remaining funds shall revert to the permittee to explore other ways of disbursing the funds (Amendment Nos. Twenty-Six and Thirty-One).

11. **Marsh Restoration Work and Plans.** Any project that receives money from the mitigation fund shall include a marsh restoration plan and program, to be approved by or behalf of the Commission, for the eventual restoration of the site, and shall contain the following:

    a. **Site Conditions and Modifications.** A topographic map of the site at one-foot contour intervals and a topographic map showing any proposed site modifications. All elevations shall be relative to National Geodetic Vertical Datum (NGVD). The map shall include typical cross-sections showing the proposed marsh plain elevations, any channels, and any high spots. The map shall show: (1) figures for the ratios of typical horizontal to vertical slopes for existing and proposed marsh surface, channels, and sloughs; (2) proposed plant species along the cross-sections according to their expected zone of growth; (3) the elevation of adjacent surrounding properties; and (4) figures for the estimated tidal range related to Mean Higher High Water, Mean High Water, Mean Lower Low Water, Mean Sea Level, the maximum predicted tide, and the 100-year tide. To promote natural sedimentation and colonization of the site, constructed elevations shall generally be six to twelve inches lower than target elevations.

b. **Soil Information.** The program shall include a report identifying the type of soils found at the site, at a nearby reference site, and the soil type of any fill to be imported to the site. Information shall be provided on the quantitative soil measurements of soil texture and dry density for soils at the site, at the reference site, and for all imported soils. All imported soils must be within 10% of the range of values found at the reference marsh for soil qualities such as grain size, organic content, salinity, and pH.

c. **Planting and Seeding Plan.** The restoration plan shall include a list of the vegetation proposed to be planted, an irrigation plan for watering upland and transitional plants until they are established, and a maintenance plan. Such plans shall include a program for eliminating non-native or invasive vegetation and preventing the establishment of non-native or invasive vegetation at the site.

d. **Schedule.** The program shall include a schedule indicating when excavation, fill, and grading will occur, the time to be allowed for settlement, and the time when planting will occur. For Skaggs Island, the schedule should provide a time-line for the actions needed before the site will be returned to tidal action, and the objectives and measures that can be implemented in the interim to enhance the site's natural resource functions.

e. **Identification of a Suitable Reference Site.** The program shall identify nearby reference sites that shall be evaluated as part of the monitoring program and shall provide a reference for evaluating the progress of the restoration site.

f. **MOA/MOU.** The plan and program shall include all executed MOA's/MOU's and cost agreements that establish the responsibilities between the permittee, and any other government entity implementing the mitigation work for the permittee, including designing, constructing and monitoring any mitigation work.

g. **Monitoring.** Every year, starting October 1 of the year following the return of the site to tidal action for a fifteen-year period, or until those portions of the restoration site subject to tidal action are approximately 95% vegetated as compared with nearby reference marshes (or eelgrass beds), or for sandflats, until benthic sampling indicates similar biomass, whichever occurs first, the permittee shall report to the Commission on the effects of the project in restoring the target habitat (tidal marsh or transitional habitat or eelgrass beds or sandflats) at the restoration site. The report shall include measuring sedimentation rates, percentage of the site revegetated, plant survival, approximate percentage representation of different plant species, and a qualitative assessment of plant growth rates for the tidal restoration area, including adjacent transitional and upland habitats. Undesirable exotic plant species such as pepperweed (*Lepidium latifolium*), *Spartina alterniflora*, broom, or star thistle shall be reasonably controlled (coverage of less than 5 percent of their expected zone of growth) during the fifteen-year monitoring period.

Should adverse conditions be identified during the fifteen-year monitoring period, the permittee shall take corrective action as specified by or on behalf of the Commission.

G. **Mitigation for Pier E3 Implosion Impacts.** The permittee shall implement the following mitigation measures to assess the impacts of the implosion of Pier E3 authorized in I-A-5-e, above:

1. **Blast Attenuation System** (BAS or Bubble Curtain). Prior to any implosion of Pier E3, a fully operational bubble curtain shall be installed 25 feet to 40 feet from the outside edge of Pier E3 to reduce sound pressure waves and noise generated from the controlled explosion to minimize impacts to fish, marine mammals and birds. The bubble curtain shall provide a minimum of 80% attenuation of the blast. All elements of the bubble curtain shall be removed from the Bay within four weeks of the implosion (Material Amendment No. Thirty-Eight).

2. **Timing of Implosion.** The implosion shall only occur in November of any calendar year, the time when the fewest number of animal species are likely to be present, to minimize the implosion's biological impacts (Material Amendment No. Thirty-Eight).

3. **Animal Observers**. Prior to the implosion, observers shall be stationed around Pier E3 with binoculars, fish finding equipment, hydrophones, and sonar to monitor the presence of large schools of fish, marine mammals, and diving birds. Fish monitors shall observe the area with sonar in the weeks before the blast to establish a general baseline for fish densities around Pier E3. To determine potential impacts to fish, monitors shall observe the location around Pier E3 immediately after the controlled blast for bird predation and attempt to retrieve any perished fish. The implosion shall be delayed if the animal observers detect the following:

   a. **Marine Mammal Monitors**. If marine mammal monitors observe a marine mammal within the Marine Mammal Exclusion Zone (i.e., 1,160 feet from Pier E3), the blast shall be delayed until such time that the marine mammal is observed outside the Marine Mammal Exclusion Zone, or for 30 minutes if it is not observed swimming outside the Mammal Exclusion Zone.

   b. **Bird Monitors**. If bird monitors observe any listed birds (i.e., Brown Pelican, California least tern, peregrine falcon) diving within 500 feet of Pier E3, the blast shall be delayed until the birds are no longer in the water within 500 feet of Pier E3.

   The animal observers shall also haze animals moving toward the exclusion zone around Pier E3 to deter animals from entering areas where they may be killed or injured. Hazing techniques may include noise, light, or laser deterrents (Material Amendment No. Thirty-Eight).

4. **Purchase of Mitigation Site**. Prior to the implosion, as required by the California Department of Fish and Wildlife, Caltrans shall assure funding for the purchase of four acres of mitigation credit for longfin smelt. Caltrans shall provide a description of the longfin smelt mitigation site to be purchased and the provisions for

monitoring, maintaining, and reporting about the success of the site in providing longfin smelt habitat for approval by or on behalf of the Commission pursuant to Special Condition II-A (plan review) (Material Amendment No. Thirty-Eight).

5. **Monitoring**. Following the implosion, the permittee shall conduct monitoring of a number of biological and physical parameters to determine the effect of the blast, including the following:

   a. **Fish Trawls.** Perform as many oblique and otter trawls as possible with three trawl boats in the hour following the implosion to assess potential project related mortality on longfin smelt. Necropsies to determine the cause of death will be performed on all collected perished covered species, particularly longfin smelt, and representative samples of any collected species where large numbers of that species have perished from the blast. Caltrans will work with BCDC staff on how best to assess the effects of the blast on species where significant numbers of perished individuals are collected during the post-implosion trawling. This assessment will come through necropsies of perished individuals retained during the trawls (Material Amendment No. Thirty-Eight).

   b. **Bird Monitoring.** Perform bird predation monitoring (e.g., increased feeding activity by birds immediately after the explosion) as an indicator of fish mortality and collect any fish floating on the surface (Material Amendment No. Thirty-Eight).

   c. **Hydroacoustic Monitoring**. Place approximately 18 pressure transducers and hydrophones around Pier E3 to measure pressure sound waves generated by the blast. The sensors shall be suspended to an approximate depth of 20 feet or at mid-depth for shallower locations and will be placed both within and outside the bubble curtain. Data from the sensors shall be compared with the expected sound pressure waves that models have predicted for the blast (Material Amendment No. Thirty-Eight).

   d. **Test Charge**. A very small test charge shall be set off approximately one week before the scheduled implosion to assure that the hydroacoustic monitoring array is functioning properly and to assure the collection of data useful in determining whether controlled explosions have applicability for future pier demolitions (Material Amendment No. Thirty-Eight).

   e. **Water Quality**. Caltrans shall map the plume predicted by the three-dimensional hydrodynamic and sediment transport modeling, bathymetry of the Pier 3 area and anticipated tidal conditions. The plume shall be monitored using a vessel equipped with continuous monitoring sensors for pH, turbidity, dissolved oxygen, temperature, depth, and an Acoustic Doppler Current Profiler that are integrated with a global positioning system and data acquisition system. Plume mapping shall occur for six to ten hours following the implosion. In addition, a second vessel shall collect grab samples for six to ten hours after the implosion from within the plume as it moves and disperses with the tides. Grab samples shall be analyzed for suspended sediment concentrations, plus total and dissolved metals. In addition, five buoys shall be deployed adjacent to

nearby eelgrass beds to verify the prediction that the plume will not impact water quality in the vicinity of the eel grass beds. The buoys shall monitor turbidity, pH, dissolved oxygen, temperature, and conductivity. The buoys shall monitor these water quality parameters for up to 60 hours following the implosion or until the data collected at the buoys is the same as background levels for the Bay for a period of 48 hours, whichever is longer (Material Amendment No. Thirty-Eight).

f. **Rubble Management**. Report on the quantity of rubble that falls within the cellular voids of Pier E3 with the implosion, how much rubble fell outside the pier footprint and over what area, how much rubble was collected, sorted and disposed within the pier footprint, how much rubble was disposed outside the Commission's jurisdiction, and how long rubble management operations were conducted.

g. **Monitoring Report**. Within three months following the implosion or by February 15, 2016, whichever is earlier, provide a written report to Commission staff summarizing the results of the various monitoring observations and data collection, detailing the location of monitoring stations, summarizing collected data, describing how much rubble fell outside the Pier E3 footprint and the final elevation of the deposited rubble within the Pier, suggesting possible improvements to impact minimization measures, recommending possible improvements to the monitoring program, and describing lessons learned. The report shall also evaluate whether implosions are appropriate for the demolition of other SFOBB marine piers.

h. **Commission Presentation**. Within two months of submitting the written monitoring report, brief the Commission on the reports findings, conclusions, and recommendations.

~~G.~~ H. **Horizontal Control Points.** As shown on the plans required by Special Condition II-A, the permittee shall install a minimum of four permanent horizontal control points of the type and at specific locations at the East Span of the San Francisco-Oakland Bay Bridge (SFOBB) site approved by or on behalf of the Commission. The permittee shall place these control points under the supervision of a registered civil engineer or land surveyor, and shall be accurately located and mapped in relation to each other, to the closest known existing control point or other acceptable fixed point in the project area, and to the limits of any proposed fill in the Bay. The permittee shall locate these control points to facilitate field checking, with simple equipment, of the limits of the fill authorized pursuant to this authorization. Such fill limits shall be dimensioned form these control points, or, if the scale of the drawing is adequate, it shall carry a note stating that the field dimensions may be scaled from the drawing and the accuracy of such scaling, e.g., "Field dimensions to an accuracy of +/- may be scaled from the drawing." The permittee shall clearly show these control point locations on all plans submitted pursuant to the Special Condition II-A.

~~H.~~ I. **Temporary Construction and Demolition Access.** Except for the coffercell system authorized for use at the temporary towers "C" on the east side of Yerba Buena Island as authorized by Amendment No. Twenty, any fill placed for construction and/or demolition access and work platforms shall be pile-supported or floating only, and shall be approved by or on behalf of the Commission prior to their installation pursuant to Special Condition II-A. The permittee is strictly prohibited from using solid fill in the Bay for construction and/or demolition access and work platform purposes with the exception of the minimum amounts necessary of earthen fill to create the minimum necessary grade transitions from the land to pile-supported work platforms, and install the geotube to construct the westbound roadway, and the tidal berm for the Caltrans maintenance road. Amendment No. Twenty-Two authorizes the construction of a crane runway platform supported by piles and two access ramps composed of solid fill for installing a detour bypass structure within the Commission's 100-foot shoreline band on the southeast side of Yerba Buena Island north of Coast Guard Cove. Filter fabric shall be installed under crane pads and shall overlap as necessary to cover the entire crane runway platform surface to control sedimentation and ensure that water quality is not adversely affected by construction activities. A 12-foot oil pan shall be suspended under the crane to provide secondary containment. All construction work associated with the crane runway platform shall be land-based, occur above mean high tide, and be conducted at low tide to eliminate the potential of any sediment run-off into the Bay from construction activities, and minimize the potential for sound energy wave impacts to fish and other marine organisms during pile driving. The crane runway platform and access ramps shall be completely removed by July 31, 2010 (Amendment No. Twenty-Eight).

~~I.~~ J. **Debris Removal.** All construction debris shall be removed to a location outside the jurisdiction of the Commission. In the event that any such material is placed in any area within the Commission's jurisdiction, the permittee, its assignees, or successors in interest, or the owner of the improvements, shall remove such material, at its expense, within ten days after it has been notified by the Executive Director of such placement.

~~J.~~ K. **Hazardous Materials Removal and Remediation.** The permittee shall ensure that it performs any removal, remediation, encapsulation or disposal of hazardous or toxic materials, such as lead-based paint, consistent with the requirements of the U. S. Environmental Protection Agency and any applicable local, state and federal laws.

~~K.~~ L. **Non-Point Source Pollution Control.** The permittee shall implement all appropriate and necessary best management practices (BMP's) to minimize the discharge of non-point source pollutants to the Bay during and after construction. The BMP's shall be consistent with applicable local, state and federal laws and any required waste discharge requirements, National Pollutant Discharge Elimination System (NPDES) permits and stormwater pollution prevention plans and shall be shown on the plans required under Special Condition II-A.

~~L.~~ M. **Construction and Maintenance Operations.** All construction operations and ongoing repair and maintenance activities shall be performed to prevent construction materials from falling into the Bay. In the event that such material escapes or is placed in an area subject to tidal action of the Bay, the permittee shall immediately retrieve and remove such material at its expense.

~~M.~~ N. **Creosote Treated Wood.** No pilings or other wood structures that have been pressure treated with creosote shall be used in any area subject to tidal action in the Bay or any certain waterway, in any salt pond, or in any managed wetland within the Commission's jurisdiction as part of the project authorized herein.

~~N.~~ O. **Placement and Use of the Construction Barges and Coordination with the U.S. Coast Guard.** Prior to the use of any barges in the Bay, the permittee shall first submit evidence that their use complies with the U.S. Coast Guard Checklist and the Dredging Operation Plan and updates required pursuant to Special Condition II-D.

~~O.~~ P. **Mud Waves.** The permittee shall implement reasonable measures to prevent the creation of mud waves as a result of project construction. Should the project result in the formation of a mud wave, the permittee shall remove the mud wave and, after review and approval by or on behalf of the Commission pursuant to Special Condition II-A, implement measures to correct the conditions that led to mud wave formation.

~~P.~~ Q. **Certification of Contractor Review.** Prior to commencing any grading, demolition, or construction, the general contractor or contractors in charge of that portion of the work shall submit written certification that s/he has reviewed and understands the requirements of the permit and the final BCDC-approved plans, particularly as they pertain to any public access or open space required herein, or environmentally sensitive areas (Material Amendment No. Thirty-Two).

~~Q.~~ R. **Commission Jurisdiction Over Fill Area.** Notice is hereby given that, under the McAteer-Petris Act, the area of the approved project that is within the Commission's jurisdiction under Section 66610(a) remains within that jurisdiction even after fill or substantial change in use, authorized by the Commission, may have changed the character of the area; so that the permittee or the permittee's successors in interest will require further action by or on behalf of the Commission prior to any future change of use or work within areas filled pursuant to this authorization.

~~R.~~ S. **Recording.** The permittee shall record this document or a notice specifically referring to this document with the City and County of San Francisco and Alameda County within 30 days after execution of the permit issued pursuant to this authorization and shall, within 30 days after recordation, provide evidence of recordation to the Commission.

~~S.~~ T. **New Buildings.** To minimize intrusion in proposed public access and recreational areas, and to maximize visual access to the Bay, any new buildings proposed in the Oakland Touchdown area as part of this new East Span shall be designed and located to be compatible with existing buildings in the area, and to be clustered with them, to the maximum extent feasible.

~~T.~~ U. **Maintenance Road Landscaping.** Landscaping for the maintenance road in the Oakland Touchdown, particularly where the road separates west and eastbound travel lanes, shall be submitted and approved in accord with Special Condition II-A. Such landscaping plan shall clearly denote the end of the bridge and the beginning of dry land, and serve as a gateway to the East Bay.

~~U.~~ V. **Conformity with State Historic Preservation Requirements.** The permittee shall fully comply with all requirements of the State Historic Preservation Office regarding the historical preservation and/or interpretation of the existing East Span of the Bay Bridge and any other existing buildings south of the bridge approach at the Oakland Touchdown.

~~V.~~ W. **Placement of Demolition Debris Within Pier Caissons.** All construction debris from the demolition of the existing bridge that is determined to be inert, non-hazardous, and non-toxic may be deposited within the footings of the existing bridge up to but no higher than an elevation of minus 10-feet below the pre-construction mudline elevation with express, written approval by or on behalf of the Commission. Any construction debris that is placed within footings of the former bridge shall be fully contained within the pier walls and shall not leach into the existing water column.

1. **Amendment No. Thirty-Nine.** Approximately 5,600 cubic yards of debris from the demolition of the Pier E3 pile cap shall be placed within the Pier E3 caisson. The demolition debris will land approximately -175 feet below the mud line and will occupy 3,345 square feet of the Bay floor that is completely contained within the pier caisson.

All construction debris from the demolition of the existing bridge that is determined to be hazardous, toxic, or deleterious to the environment shall be removed to a location outside the jurisdiction of the Commission. In the event that any such material is placed in any area within the Commission's jurisdiction, the permittee, its assignees, or successors in interest, or the owner of the improvements, shall remove such material, at its expense, within ten days after it has been notified by the Executive Director of such placement. After the disposal, the permittee shall submit evidence that the material was disposed in an appropriate manner.

~~W.~~ X. **Post-construction Stormwater Treatment.** By December 31, 2008, the permittee shall install post construction stormwater treatment facilities as required by the Regional Water Quality Control Board and subject to the following (Amendment Nos. Fifteen and Eighteen):

1. **Plan Review.** All post construction stormwater treatment measures shall be reviewed and approved by or on behalf of the Commission pursuant to Special Condition II-A.

2. **Environmentally Sensitive Area Fencing.** Environmentally sensitive areas (ESA's) shall be delineated in the field with fencing to protect the California clapper rail, the salt marsh harvest mouse and other sensitive wildlife habitat, and to prevent construction activity from occurring outside of the construction zones. The environmentally sensitive area fencing shall be installed pursuant to the plans entitled,

"Attachment E, ESA, Mouse and Goose Fence Maps, SFOBB Stormwater Project," Sheets 1 through 4, and the plan entitled, "Construction Details, Temporary Mouse Fence," all prepared by Caltrans and received in the Commission's office on April 19, 2006.

3. **Mitigation**

   a. **Temporary Impacts:**

      (1) All areas temporarily affected by installation of stormwater treatment facilities that are located in the Bay and within the 100-foot shoreline band including those areas located within the wildlife priority land use area and the Cypress Mitigation Area (BCDC Permit No. 1993.011.00) shall be restored to pre-project conditions, and where appropriate re-vegetated with a native plant palette consistent with the Emeryville Crescent. The actual area of temporary impacts is delineated in the permittee's submittal entitled, "Attachment A, East Bay Bridge Storm Water Basin Project Impacts, Map 1-5 August 2007," submitted with the request for Amendment No. Eighteen. Prior to replanting, any cypress trees damaged by construction shall be pruned under the direction of a licensed arborist, as needed, to promote health and improve appearance. Also, all gravel installed for construction access purposes shall be removed and, thereafter, all soil in the construction zone shall be cultivated to a depth of six to twelve inches and receive two inches of soil amendment. The replanting project shall provide transitional and upland habitat contiguous with the existing vegetation. All replanting shall conform to the planting plans approved by this amended permit, submitted as Attachment D to the request for Amendment No. Eighteen on September 6, 2007.

      (2) To compensate for the temporal loss of 2.55 acres of habitat (0.69 acres by Amendment No. Fifteen and 1.86 acres after-the-fact by Amendment No. Eighteen) that will result from the installation of the stormwater treatment facilities in the wildlife priority use area, Cypress Mitigation Area (BCDC Permit No. 1993.011.00), the 100-foot shoreline band, and additional in Bay impacts, the permittee shall provide, by no later than October 15, 2008, an in-lieu fee to the Commission or directly to the California State Coastal Conservancy, if the Commission staff so directs, in the total amount of $893,813 ($109,900 by Amendment No. Fifteen and $783,913 by Amendment No. Eighteen). The in-lieu fee shall be used by the East Bay Regional Park District (EBRPD), California State Parks or the California State Coastal Conservancy to improve upland habitat in the Eastshore State Park preferably along the Emeryville Crescent, subject to approval by or on behalf of the Commission.

   b. **Permanent Impacts.** The permittee shall mitigate for permanent impacts from installation of stormwater treatment facilities located in the wildlife priority land use area and areas outside the wildlife priority land use area that were required for mitigation under BCDC Permit No. 1993.011.00 (a total of a 3:1

ratio for a 0.39 acre area). Compensation shall be provided by no later than October 15, 2008, in the form of an in-lieu fee to the Commission or to the California State Coastal Conservancy if the Commission staff so directs in the amount of $75,810. The in-lieu feel may be used by the East Bay Regional Park District, California State Parks and/or the California Coastal Conservancy to improve upland habitat in the Eastshore State Park preferably along the Emeryville Crescent, subject to approval by or on behalf of the Commission.

4. **Mitigation Monitoring within the Wildlife Priority Land Use Area and the Cypress Mitigation Area.** The permittee shall monitor all revegetated areas in the Bay and within the wildlife priority land use area and the Cypress Mitigation Area every other year for a total of three monitoring events to determine success. An annual monitoring report shall be submitted to the Commission, every other year beginning December 31, 2008, for the duration of the five-year monitoring period. Within 90 days of the issuance of Amendment No. Eighteen, the permittee shall submit a monitoring plan for staff review and approval. The plan shall describe methods for determining habitat quality and whether the following success criteria are met: (a) replanted areas must achieve 60% cover by native plant species, except for the "failed areas" of the Cypress Mitigation that will be replanted (see Permit No. 1993.011.06) and the grass seeded areas under the dense cover of Monterey Cypress trees; (b) pampas grass, fennel, broom, and ice plant must be eradicated from replanted areas for the duration of monitoring; (c) Asian mustard, pepperweed, velvet grass and bermuda grass must cumulatively not exceed 5% of cover for the duration of the monitoring; and (d) unsuccessful areas with little or no cover must be identified and adaptive measures to promote vegetation success determined. If the success criteria are not met by the fifth-year monitoring report, the permittee shall propose corrective actions and obtain approval of the measures by or on behalf of the Commission.
5. **Amendment to BCDC Permit No. 1993.011.00.** Within two months of executing Amendment No. Fifteen to BCDC Permit No. 8-01 or by September 1, 2006, whichever is earlier, the permittee shall submit a "fileable" amendment request to the Commission to amend BCDC Permit No. 1993.011.00. The amendment request shall address the impacts of the post-construction stormwater treatment measures to the wildlife priority use area and the Cypress Mitigation Area.
6. **Revised Open Space Instrument BCDC Permit No. 1993.011.00.** By no later than September 30, 2008, the permittee shall revise and record the open space agreement required under BCDC Permit No. 1993.011.00. The revisions shall account for any new permanent improvements, such as maintenance vehicle pullout areas, that will fall within those portions of the wildlife priority land use area that were dedicated for open space.

~~X.~~ Y. **Installation and Removal of Utility Vaults Associated with Relocation of the U.S. Navy Submarine Cable Authorized Under Amendment No. Two to BCDC Consistency Determination No. CN 4-89 (Amendment No. Fifteen)**

1. **Removal of Utility Vault.** Within one year of dismantling the existing span of the San Francisco/Oakland East Span of the Bay Bridge or by July 1, 2013, whichever is earlier, the permittee shall submit and receive Commission approval of plans to remove an existing 80-square-foot utility vault on the Oakland Mole.

2. **New Vault** (associated with U.S. Navy Cable relocation). The plans described above shall include landscaping to screen the new vault authorized under Amendment No. Two to Consistency Determination No. 4-98 from future park uses, if deemed appropriate by the Commission, in consultation with the East Bay Regional Park District.

~~Y.~~ Z. **Removal of Filter Fabric**. The coffercell system authorized herein shall utilize the placement of a filter layer and silt curtains. This filter layer shall serve to demarcate the limit of temporary fill in addition to serving its technical purpose. All filter fabric, silt curtains and material used for the installation of the coffercell system on the east side of Yerba Buena Island shall be removed by November 30, 2008. The shoreline area affected by the construction of the coffercell system shall be returned to its pre-existing conditions by this date. The footprint area of the temporary tower foundations will be returned to its pre-existing conditions when the temporary towers are removed upon completion of the Self-Anchored Suspension Span (Amendment No. Twenty).

~~Z.~~ AA. **Installation and Removal of temporary wildlife exclusion fence adjacent to the Oakland-Emeryville Wildlife Priority Land Use Area (Amendment No. Twenty-Four)**

1. On a three-year-trial basis or until February 1, 2012, whichever is sooner, the permittee may use the three-foot-high polyvinyl fencing to restrict the movement of Canadian geese onto I-80 as precisely described in its September 18, 2008 letter requesting Amendment No. Twenty-Four. The installation of this fence must be complete by no later than February 1, 2009, in compliance with state and federal resource agency reviews of potential impacts to special status species.

2. By no later than February 1, 2009, the permittee shall entirely remove all components of the existing temporary fencing, located bayward of the new temporary fence alignment.

3. If vehicle crash-recovery or other events cause damage to any portion(s) of the new temporary fence, the permittee shall, within 30 days of notification from Commission staff, repair the fence and submit evidence (photographs) that the fence has been restored it to its original condition.

4. By no later than February 1, 2012, the permittee shall entirely remove all components of the new temporary fence from the Commission's jurisdiction, unless prior to that date the permittee has obtained authorization by or on behalf of the Commission that this fence, or some other fence, may be erected permanently, based on the following criteria: (a) the permittee can demonstrate that the fence design and location is effective for the stated purpose and is necessary; (b) the

BCDC staff concurs that the design has no aesthetic impacts, including those related to fence damage and durability; (c) prior to July 1, 2011, the permittee submits a proposal for a permanent fence and receives a favorable recommendation from the Design Review Board, consistent with the requirements for visual access in BCDC Permit No. 1993.011.00, Special Condition II-D.

~~AA.~~ BB. **Minimizing Impacts of Pile-Driving on Aquatic Species During Construction of the Temporary Access Trestle and Incidental Take Permit (Amendment No. Twenty-Five).**

1. The following measures shall be employed during pile driving activities to minimize impacts to aquatic species:

   (1) A bubble-curtain shall be employed during construction of the temporary access trestle authorized under Amendment No. Twenty-Five for 18 of the 22 piles, which will be located off-shore;

   (2) All pile-driving activities shall be restricted to June 1st through November 30th of any given year;

   (3) Pile-driving activities shall be restricted to daylight hours; and

   (4) Hydroacoustic and bird predation monitoring shall be conducted during pile driving activities pursuant to the "Final Hydroacoustic Monitoring Plan for Driving of Temporary Piles for the Self-Anchored Suspension Bridge" (May 2008).

2. **Incidental Take Permit (ITP).** No work shall commence until the permittee provides the Commission with an approved California Department of Fish and Game Incidental Take Permit for construction of the temporary trestle. The permittee shall incorporate all required mitigation measures in the ITP into its construction practices and amend this BCDC authorization if necessary to include authorization of these mitigation measures.

~~BB.~~ CC. **Minimizing Impacts of Pile-Driving During Construction of the YBI and Oakland Trestles and the Temporary Supports for Dismantling the East Span (Material Amendment No. Thirty-Two).**

1. **Final Biological Opinion for the NOAA National Marine Fisheries Service (NFMS).** No work shall commence until the permittee provides a copy of a final Biological Opinion (BO) from the NOAA National Marine Fisheries Service (NMFS) for the work associated with Material Amendment No. Thirty-Two. Should the final BO require changes to the authorized improvements or special conditions, prior to commencement of work authorized herein in Amendment No. Thirty-Two, the permittee shall apply for and receive Commission authorization for any required changes.

2. **Mitigation Measures During Pile-Driving**. To ensure that pile-driving activities will not adversely impact fish within the project area, the permittee shall incorporate all required mitigation measures specified by the final BO issued by NMFS, including the following:

(a) Steel pipe pile sizes will be limited to 0.91 meter (36 inches) in diameter or smaller.

(b) Pile driving will occur only during daylight hours from one hour after sunrise to one hour before sunset during the peak seasonal salmonid and green sturgeon migration periods (December 1 to May 31). Pile driving operations occurring outside the peak seasonal salmonid and green sturgeon migration period (June 1 to November 30) shall direct illumination away from the water.

(c) All pipe piles will be installed with a vibratory hammer. The vibratory hammer will be used to drive the majority of the total pile lengths. The remainder of the pile may be impact-driven with the use of a marine pile driving energy attenuator *(i.e.,* air bubble curtain system), or other equally effective sound attenuation method.

(d) In the event a pipe pile is entirely installed with a vibratory hammer, it will be subject to final "proofing" with an impact hammer (a limited number of blows with an impact hammer intended to test integrity and seating of the pile).

(e) Use of a marine pile driving energy attenuator (*e.g.,* bubble curtain) will be required during impact driving of all pipe piles, with the exception of pile proofing.

(f) A maximum of 10% of the piles installed completely with a vibratory hammer may be proofed with an impact hammer, without the use of a marine pile driving energy attenuator.

(g) Proofing of piles will be limited to a maximum of two piles per day, for less than 1 minute per pile, administering a maximum of twenty blows per pile.

(h) Impact pile driving (with the exception of pile proofing) will be restricted to the period between June 1 and November 30 to avoid the peak migration period for salmonids and spawning adult green sturgeon.

(i) When construction activity occurs within 1,000 meters (3,200 feet) of an eelgrass bed or sand flat, measures will be taken to ensure, to the extent practical, that turbidity generated by these activities does not exceed 50 Nephelometric Turbidity Units (NTU) or result in incremental increase greater than 10% of the background NTU at a distance greater than 30 meters (100 feet) from the activity (Amendment No. Thirty-Two).

3. **Monitoring During Pile-Driving**. The permittee shall submit a final NMFS- and RWQCB-approved hydro-acoustic monitoring and reporting program to the Commission prior to starting impact pile driving. This program shall provide daily summaries and monthly reports on hydroacoustic monitoring results, data on the total number and frequency of impact hammer strikes per day, observations of bird predation and behavior, and evaluate fish mortality and injury rates as determined through visual observations and collections during pile driving events. The program shall document the extent of the underwater sound footprint during pile driving activities, including the number, location, distances, and depths of hydrophones

and associated monitoring equipment. If underwater sound exceeds levels safe to fish (as established by NMFS), NMFS and the Commission must be contacted within 24 hours before continuing to drive additional piles.

4. **Incidental Take Permit (ITP).** No work shall commence until the permittee provides the Commission with an approved California Department of Fish and Game Incidental Take Permit for the construction of the temporary trestles and support piles. The permittee shall incorporate all required project revisions or mitigation measures identified in the ITP into its construction practices and amend the subject amended permit, if necessary, to include authorization of these mitigation measures (Material Amendment No. Thirty-Two).

5. **Eelgrass Monitoring**. The permittee shall conduct annual, project-wide eelgrass surveys at both YBI and Oakland, during the growing season, in all years in which in-water work occurs. Surveys shall be consistent with prior eelgrass surveys performed for this project from 1999 to 2007, and annual reports shall be provided to the Commission by April 1 of the following calendar year (Material Amendment No. Thirty-Two).

~~CC.~~ DD. **Best Management Practices to Protect Water Quality During Demolition (Material Amendment No. Thirty-Two).** No work shall commence until the permittee provides a final set of construction Best Management Practices to contain debris from bridge dismantling that have been approved by the RWQCB. Measures should include containing lead paint and asbestos and demolition debris and preventing these materials from entering the Bay. The permittee shall also perform turbidity monitoring during activities with the potential to produce turbidity and suspended sediment (as outlined in the Water Quality Self-Monitoring Program required by RWQCB Order No. R2-2002-0011), and ensure, to the extent practical, that turbidity generated by construction activities does not exceed thresholds that could adversely impact eelgrass, as established by the RWQCB (Material Amendment No. Thirty-Two).

III. Findings and Declarations

This amended permit is issued on the basis of the Commission's findings and declarations that the work authorized herein is consistent with the McAteer-Petris Act, the *San Francisco Bay Plan* (Bay Plan), the California Environmental Quality Act, and the Commission's amended coastal zone management program for San Francisco Bay for the following reasons:

A. **Bay Fill.** Section 66605 of the McAteer-Petris Act states that further filling of San Francisco Bay should be authorized only when public benefits from fill clearly exceed public detriment from the loss of water areas and should be limited to water-oriented uses, including bridges. In addition, the Commission should authorize fill only when no alternative upland location is available, the fill is the minimum amount necessary, and the nature, location and extent of fill minimizes the harmful effects to the Bay. The project will replace the existing East Span of the Bay Bridge, constructed in 1936, with a replacement bridge that will meet current seismic design criteria.

1. **Public Benefits v. Public Detriment.** The major public benefit of this project is to seismically upgrade the East Span of the Bay Bridge. The replacement bridge will be designed as a lifeline structure (constructed to a higher standard to provide necessary post-disaster functionality), built to withstand a major earthquake, thereby improving public safety and reducing economic disruption during a large earthquake. Failure of the bridge would not only lead to likely loss of life, but would severely disrupt emergency response efforts, and subsequent economic recovery of the Bay region. The new span will also greatly enhance views of the Bay from the bridge and will reduce congestion by providing ten-foot-wide shoulders on the inside and outside of the traveled way for each traffic direction, thereby providing safer access for disabled vehicles and making this Interstate highway current with AASHTO and other highway design and safety codes. The bridge replacement will also provide public access where none has previously existed and will include significant public benefits through the mitigation package.
2. **Use.** The McAteer-Petris Act and the *San Francisco Bay Plan* identify bridges as water-oriented use for which some fill can be authorized.
3. **Alternative Upland Location.** There is no practical alternative upland location for the replacement bridge as it provides a vital east-west link from Oakland to the West Span of the Bay Bridge and ultimately to the City of San Francisco. Retrofitting the existing bridge has already been found by the Commission to be an infeasible option because a retrofitted bridge, during a seismic event, would be more likely to fail than a new replacement bridge. In addition, a retrofitted bridge would have a more limited lifespan than a new bridge. Thus, a replacement bridge provides significant economic and safety benefits over retrofitting the existing East Span.
4. **Minimum Fill.** This project involves placing a total of approximately 104,453 cubic yards of permanent solid fill in the Bay which will cover approximately 46.05 acres of Bay surface area. Approximately 41.93 acres of this fill will be pile-supported or suspended high above the Bay. Such fill typically has relatively few impacts to Bay-related resources. Approximately 3.03 acres of the authorized fill will consist of solid or earth fill for the westbound roadway and the Caltrans maintenance road and, in addition, approximately 0.52 acres of sand fill for beneficial use will be placed to create test plot plateaus in the Emeryville Flats for the experimental eelgrass transplant program. Caltrans will: (a) remove the existing East Span, including all footings to 1.5 feet below the mudline; (b) remove temporary pilings associated with construction trestles and falsework to at least 1.5 feet below the mudline; (c) remove any temporary cofferdams to at least 1.5 feet below the mudline; and (d) by November 30, 2008, remove all rock and items associated with the temporary coffercell systems. Because the existing East Span has a greater number of footings than the new bridge, footings which are also larger than the new bridge footings, the project will result in a net increase of 173,806 cubic yards in the Bay's volume.

In an effort to reduce the fill associated with the new bridge, Caltrans evaluated a number of project alternatives and project modifications. For example, the existing Bay Bridge contains two roadways in a double deck structure with westbound traffic on the top deck and eastbound traffic on the lower deck. While resulting in less Bay fill, this configuration is not as seismically reliable as two parallel roadbeds. Moreover, a parallel roadbed configuration will give the bridge a more slender visual profile and will provide eastbound motorists with sweeping views of Oakland, Berkeley and the East Bay hills. Although a replacement structure with parallel roadways will approximately double the amount of the Bay covered by the bridge, the bulk of this coverage will be high above the Bay and cause limited environmental impacts.

An alignment built immediately south of the existing East Span could possibly result in less Bay fill, but would potentially reduce the amount of space available for future park uses south of the Bay Bridge toll plaza and would impact Coast Guard operations at YBI. Also, the new northern alignment provides better views for motorists.

A pile-supported, eastern touchdown would also result in less Bay fill compared to the solid fill for the touchdown. However, the Engineering Design Advisory Panel (EDAP), which included all the members of the Commission's Engineering Criteria Review Board (ECRB) and the Design Review Board (DRB), concluded that in the event of a major earthquake, the solid fill option would provide a greater degree of safety over the pile-supported fill option. Additionally, the modes of failure of a pile-supported fill structure make it less easily and quickly repaired than solid fill, which even if it cracks or settles, may only require additional overlays to repair. A pile-supported fill structure may need to be torn down completely and rebuilt (or require a substantial retrofit in and near the Bay) depending on the damage that occurs.

Caltrans' evaluation of these and other alternatives was aided by EDAP. As various alternatives were being evaluated, the Commission was asked for guidance on some of the alternatives being considered. At the Commission meeting of June 18, 1998, the Commission was briefed and voted to support EDAP's recommendations that the replacement structure should be a single-tower, self-anchored suspension bridge joined to the East Bay shoreline by a causeway, and that a bicycle and pedestrian path should be provided along the south side of the new bridge. At the Commission meeting of November 4, 1999, the Commission was briefed and voted to support EDAP's recommendation that the Oakland Touchdown area should be built on solid fill rather than be pile-supported.

Some fill could possibly be eliminated by reducing the size of the maintenance road at the Oakland Touchdown, or by narrowing the space between the two parallel roadways as they land at the Oakland Touchdown. Caltrans originally proposed to use an approximately 48-foot-wide separation between the east and westbound structures for the majority of the alignment. The structure separation narrows down to approximately 40 feet as it approaches the Oakland Touchdown and this

alignment is maintained on the solid fill approach. Caltrans stated that the American Association of Street and Highway Transportation Official's (AASHTO) criteria were used for this design separation width. Both the Commission's ECRB and DRB recommended that a constant "clear distance" be maintained throughout the majority of the replacement bridge. A 40-foot-wide separation between the two roadways will allow construction of a maintenance road with two twelve-foot lanes, two shoulders and a median that will be designed to the minimum recommended criteria. Caltrans believes that the size of the maintenance road cannot be further reduced because: (a) the maintenance road will be located between the westbound and eastbound roadways and is critical for emergency and service vehicle access. The maintenance road will serve as the primary access route for emergency vehicles responding to accidents on the bridge as well as the primary circulation road for accessing the median toll facility from the current maintenance facility to the south of eastbound I-80 in the future. However, it is uncertain how effective the shoulders and medians will be for emergency purposes since conceptual landscaping plans indicate planting of these areas; (b) reducing the width of the maintenance road and its median and shoulders would be less than the minimum criteria specified by AASHTO's *Policy on Geometric Design of Highways and Streets* for a road of this intended purpose. AASHTO design criteria are guidelines that are typically less restrictive with regard to driver comfort and safety than Caltrans' design guidelines, as embodied in the Caltrans *Highway Design Manual*. The design section widths specified above will provide the minimum space for the operation of emergency service vehicles while also providing sufficient room for passing disabled vehicles. This is an important design feature as the response time of emergency vehicles is key to realizing the intended use of the maintenance road and ensuring public safety; thus, it would be very undesirable for the maintenance road to be narrowed at this location; (c) given the restrictive geometric configuration at the westbound alignment where the minimum separation is present, reversing curves will be required to bring the westbound alignment closer to the maintenance road and eastbound alignment. Because reversing curves are required, the westbound roadway cannot be shifted by a uniform distance. Due to the short distance within which the reversing curves will occur, an alternative alignment will not be able to meet Caltran's minimum requirements for curve lengths and central angles; and (d) if the alignment were to be changed at the Oakland Touchdown to reduce Bay fill, there would be additional costs associated with the redesign of this location and potential delays to the construction schedule.

Finally, there could be some potential to reduce the size, amount or the impacts of the temporary fill to facilitate construction of the bridge. Caltrans will place a total of approximately 55,453 cubic yards (Amendment Nos. Six, Eight, Eleven, and Twenty) of temporary fill in the Bay for temporary pile-supported structures such as docks, falsework, access trestles and/or temporary cofferdams and coffercell systems covering approximately 14.53 acres (Amendment Nos. Six, Eight, Eleven, and Twenty) of Bay surface area. Of the temporary fill, approximately 0.8 acres of temporary solid fill may also be placed to protect and isolate construction areas.

Caltrans has identified a likely construction scenario that the contractor may implement to construct the new bridge. This includes the use of a temporary barge dock at YBI and construction access trestles for the main span, the skyway, and the Oakland approach. According to Caltrans, "these structures would be designed using the minimum fill necessary that would allow for construction access, transportation and the use of large construction equipment, such as cranes and pile drivers, and safe working platforms for personnel." However, it is possible that the contractor may choose to utilize a different size, configuration and/or siting of docks and access trestles. The size of the falsework, falsework piers, cofferdams and coffercell systems are a function of the bridge size itself. It is Caltrans' opinion that the temporary fill associated with these structures cannot be further minimized unless the diameter of the piles and pile caps and the cross-section of the bridge deck are also reduced, which would affect seismic safety and traffic capacity. The construction methodology for the Oakland Approach and the Skyway portion of the new bridge will allow the contractor with the lowest qualified bid some latitude between the pre-cast segmental alternative and the cast-in-place alternative only through a cost reduction incentive proposal.

Thus, while a double-deck bridge would result in less fill than two parallel spans. The East Span bridge replacement will: (a) improve public safety by replacing the 1936 span with a new structure that meets current seismic design and traffic safety standards and will provide a lifeline connection that will provide post-earthquake access to link major population centers, emergency relief routes, emergency supply and staging centers; (b) provide the minimum amount of permanent fill that will accommodate EDAP, DRB and ECRB recommendations for seismic safety; (c) provide the minimum amount of permanent fill to construct a maintenance road, that will meet current design codes, allow access to the median toll facility and facilitate emergency vehicle response to access the bridge; (d) provide the minimum amount of temporary fill during the construction phase of this project; and (e) provide a net increase of 173,806 cubic yards in the Bay's volume through removal of existing bridge footings.

The Commission finds that Special Condition II-F included in this authorization is necessary to ensure that the Bay fill will not adversely impact Bay-related resources and endangered species. Therefore, as conditioned herein, the Commission finds the public benefits of the project outweigh the detriments caused by the Bay fill, and that the fill is consistent with Section 66605 of the McAteer-Petris Act in accordance with the Commission's laws and policies on the manner and purpose of placing fill in San Francisco Bay.

B. **Mitigation.** In part, the Bay Plan policies on mitigation state that mitigation for the unavoidable adverse environmental impacts of any Bay fill should be considered by the Commission in determining whether the public benefits of a fill project outweigh the public detriment from the loss of water areas due to the fill. Whenever mitigation is necessary, the mitigation program should assure: (1) that the benefits from the mitigation will be commensurate with the adverse impacts on Bay resources and consist of providing area and enhancement resulting in characteristics and values

similar to the characters and values adversely affected; (2) that the mitigation will be at the project site or as close as possible; (3) that the mitigation measures will be carefully planned, reviewed and approved by or on behalf of the Commission, and subject to reasonable controls to ensure success, permanence and long-term maintenance; and (4) that the mitigation will, to the extent possible, be provided concurrently with those parts of the project causing adverse impacts.

Generally, the adverse impacts associated with bridge construction will include: (1) the disruption, displacement, excavation, and burying of existing benthic communities; (2) the creation of shade, which can affect water and soil temperature and influence an area's plant and animal communities; (3) the modification of existing hydraulic characteristics of the surroundings by altering shorelines, or the placement of bridge support structures in the Bay, which can result in the dampening of wave energy, the creation of eddies, the altering of water circulation thus potentially increasing the rate of sedimentation or erosion in adjacent areas; (4) the creation of barriers to animal use of an area and animal movement between areas; and (5) construction noise which can disrupt animal communication, stun, or kill nearby fish.

More specifically, the project will impact approximately 8.59 acres of shallow water habitat (less than 10 feet deep) including eelgrass beds and sandflats. State and federal resource agencies have identified a number of federally and state listed endangered species that are known to occur in the area, including the Winter and Spring-run Chinook Salmon, and the Steelhead Trout.

For the majority of bridge projects, the Commission has required mitigation for the adverse impacts of associated fill by requiring the permittee to: (1) enhance habitat values in existing degraded tidal marshes by excavating channels and improving tidal circulation. Such enhancement projects always involve improvements to significantly larger areas than that covered by a bridge; (2) contribute funds on a pro-rata basis to a mitigation bank where the amount of the contribution is directly related to the cost of acquiring, restoring, monitoring and maintaining an area as tidal wetland habitat; and/or (3) excavate an adjoining upland to create a tidal marsh equal or greater in size to the area of the Bay covered by the proposed bridge.

Caltrans will mitigate for the project's environmental impacts through a combination of mitigation measures. Some of these mitigation measures are designed to avoid and minimize potential impacts at the site. Some of these measures, such as placing dredged material and sand in subtidal areas to restore the bathymetry of the areas disturbed in dredging the barge access channel to construct the replacement bridge, are intended to support the reestablishment of eelgrass beds in areas disturbed during construction. When the permit was originally authorized this mitigation measure was inconsistent with the Commission's former Bay Plan dredging policies, which stated that "to ensure protection of Bay habitats, the Commission should not authorize dredged material disposal projects in the Bay and certain waterways for habitat creation, enhancement or restoration, with the exception of a single pilot project at a site designated by the Commission and used in a manner consistent with the regulation designating the site, until: (1) the Bay Plan Marshes and Mudflats and Fish and Wildlife

policies have been updated and any additional objective and scientific studies have been carried out to evaluate the advisability of disposal of dredged material in the Bay and certain waterways for habitat creation, enhancement and restoration. Those additional studies should address the following: (a) the Baywide need for in-Bay habitat creation, enhancement and restoration, in the context of maintaining appropriate amounts of all habitat types within the Bay, especially for support and recovery of endangered species; and (b) the need to use dredged materials to improve Bay habitat, the appropriate characteristics of locations in the Bay for such projects, and the potential short-term and cumulative impacts of such projects; (2) the Commission has adopted additional Baywide policies governing disposal of dredged material in the Bay and certain waterways for the creation, enhancement and restoration of Bay habitat, which narratively establish the necessary biological, hydrological, physical and locational characteristics of candidate sites; and (3) the pilot project authorized under this section, if undertaken, is completed successfully." However, this Bay Plan language has subsequently been amended. The current dredging policies state that "[a] project that uses dredged material to create, restore, or enhance Bay or certain waterway natural resources should be approved only if…[t]he project would use only clean material suitable for aquatic disposal and the Commission has solicited the advice of the San Francisco Bay Regional Water Quality Board, the Dredged Material Management Office and other appropriate agencies on the suitability of the dredged material….To ensure protection of the Bay habitats, the Commission should not authorize dredged material disposal projects in the Bay and certain waterways for habitat creation, enhancement or restoration, except for projects using a minor amount of dredged material…." Thus, placing minor amounts of dredged material to restore the bathymetry of the barge access channel and to create test plot plateaus for eelgrass transplants is now consistent with the Bay Plan. On June 25, 2002, and September 10, 2002, the permittee requested an amendment to this authorization to allow such minor fill for test plot plateaus as a first step toward restoring the barge access channel to its pre-project condition (Amendment Nos. One, Two, Four, and Five).

Some of the mitigation measures are intended to create habitat functions in areas where the project will otherwise provide limited resource values. In particular, Caltrans will create shorebird roosting habitat in an area where shorebirds are currently roosting on structures which are decaying and will eventually wash away.

Caltrans will also offset the project's adverse impacts and the unavoidable loss of habitat by contributing a total of $10.5 million toward the restoration of Skaggs Island and for the restoration of several potential sites in Eastshore State Park (Amendment No. Twenty-Six raises the language specific to restoration in Eastshore State Park, see Section III-U). A portion of this contribution is expected to fund the removal of contaminated buildings and allow the transfer of the approximately 3,298-acre Navy-owned portion of Skaggs Island to the United States Fish and Wildlife Service (USFWS). Caltrans believes that restoring Skaggs Island will more than offset the habitat lost as a result of constructing the new bridge. However, Caltrans' contribution will only be the first step in a series of steps that must occur before Skaggs Island is restored as habitat.

Other steps that will need to take place before Skaggs Island can be restored to tidal action include: either acquiring an adjoining property so that the entire island can be restored, or maintaining a levee between the adjacent property and the Navy-owned portion to prevent the adjoining parcel from flooding with the return of tidal action to the Navy-owned portion of Skaggs Island; developing a restoration program; and assessing other potential contamination on-site. Such a process will likely take years before any significant wetland habitat is created at Skaggs Island, which appears to be inconsistent with the Commission's policy stating that mitigation should be provided concurrently with those parts of the project causing adverse impacts. Restoration of Skaggs Island will most likely result in the creation of a tidal brackish marsh and seasonal wetlands, a very different habitat than the eelgrass beds and sandflats that will be adversely impacted by this proposed project, and thus would normally be inconsistent with the Commission's mitigation policy stating that the benefits from the mitigation be commensurate with the adverse impacts on the Bay's resources. However, the restoration of Skaggs Island will undoubtedly create significant Bay resources on an ecosystem level that will benefit many Bay plants and animals including the endangered California clapper rail and the salt marsh harvest mouse.

This amended authorization is conditioned to allow up to $8.0 million to be used to remove structure and hazardous materials at Skaggs Island provided that: (1) the money is used to remove the structures and hazardous materials in a timely manner (i.e., within two and a half years); (2) that only that amount of funds needed to remove the structures and hazardous materials is expended, with the remaining funds available for Central Bay restoration; and (3) that removal facilitates the restoration of Skaggs Island to a tidal wetland as part of an approved restoration plan and schedule. Because of the significant benefits to the Bay that will result from restoring Skaggs Island, and as conditioned to assure that the money is used to jump-start the restoration, the Commission finds that the Skaggs Island portion of the mitigation program is consistent with the Commission's mitigation policy.

Pursuant to Amendment No. Sixteen of this amended permit, Caltrans was required to provide $8.0 million dollars to be used for the removal of hazardous materials and infrastructure at Skaggs Island by August 1, 2007, in an effort to facilitate the transfer of the Navy-owned portion of the approximately 3,289-acre site to the State or to the U. S. Fish and Wildlife Service for tidal marsh restoration. According to Caltrans, revised estimates of clean-up costs and liability issues have delayed the transfer and subsequent clean-up of Skaggs Island, which has resulted in numerous time extensions to this amended permit as requested by Caltrans and granted by the Commission pursuant to Amendment Nos. Ten, Thirteen, Fifteen, and Sixteen, as discussed further below. To resolve the impasse between the Navy and the USFWS, the California Wildlife Conservation Board has been negotiating to obtain the property from the Navy. However, prior to the State's acceptance of the property, all contamination was to be cleaned up to comply with requirements specified by the Department of Toxic Substances Control. The USFWS began preparing a scope of work and cost estimate for the clean-up activities, which, according to Caltrans, would facilitate the commencement of removal and cleanup activities at Skaggs Island by August 1, 2008.

Consequently, the permittee requested a fifth time extension to comply with Special Condition II-F-10 of this amended permit that allows it to commence removal and clean-up activities at Skaggs Island by August 1, 2008, pursuant to revised Special Condition II-F-10. On July 1, 2008, Caltrans requested a sixth time extension of two years based on a stalemate regarding the transfer of the Skaggs Island property. However, Congresswoman Lynn Woolsey (6th District, D-Petaluma) facilitated discussions between the USFWS and the Navy that resulted in agreement between the parties to a Memorandum of Understanding (MOU.) Congresswoman Lynn Woolsey subsequently introduced legislation (HR 5658) on April 17, 2008, to require the Secretary of the Navy and the Secretary of the Interior to negotiate a MOU that stipulates conditions of the transfer of Skaggs Island to the USFWS for inclusion in the National Wildlife Refuge System. The bill would also authorize the Navy to accept donations, including contributions from the State of California and other entities, to cover the costs of demolishing and removing the structures on the property and to facilitate future environmental restoration of Skaggs Island. Caltrans stated that these recent developments moved the parties closer to the goals described by the requirements of the BCDC Permit No. 8-01. Therefore, Caltrans requested a two-year time extension to August 1, 2010, for commencing the building demolition and a two-year time extension to July 1, 2012, for beginning wetland restoration activities (Amendment Twenty-One). The amendment request was listed with the Commission to provide it and the public notice of the proposed extension, and an opportunity to express any concerns with another time extension for using a portion of the mitigation funds toward the restoration of Skaggs Island. The Commission agreed to the extension of time request. The extension of the time requirements contained in Special Condition II-F-10 does not result in a material amendment to the originally authorized project contained in this amended authorization, consistent with Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the Bay Plan for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10711 (Amendment No. Seventeen and Twenty-One).

The remaining mitigation funds will be used to restore wetland habitat in Central San Francisco Bay. This will provide habitat improvements to such areas including but not limited to Radio Beach, Brickyard Cove, Albany Beach or Hoffman Marsh in the proposed Eastshore State Park. Funds will be provided to the National Marine Fisheries Service to “restore, enhance, or create new aquatic habitat and transitional uplands within the central Bay or to fund research that will promote such restoration.” Mitigation in Central San Francisco Bay is more consistent with the Commission’s and other resource agency policies. However, suitable restoration sites in Central San Francisco Bay are in short supply. Caltrans has spent several years investigating, and eventually, eliminating several potential Central Bay mitigation sites. The high cost of land and the existence of contamination at many of the sites make any sizable restoration in Central San Francisco Bay problematic. Still, it is Central San Francisco Bay that will be impacted by the project, and the relative scarcity of wetlands in the Central Bay makes any Central Bay wetland restoration highly desirable. While restoration in Central San Francisco Bay is likely to result in relatively small areas being

restored to wetlands, because of the value of such wetlands to Central Bay resources, and because such restoration is consistent with the Commission's mitigation policies giving preference to mitigation occurring as close to the impacted sites as possible, the Commission finds that any effort to restore Central Bay sites as part of this project is highly desirable and consistent with the Commission's mitigation policies.

In its letter dated April 10, 2002 requesting Amendment No. Two, Caltrans requested that this permit be clarified to reflect that under the terms of the amended permit, Caltrans be responsible for contributing no more than $10.5 million for all off-site mitigation required of the project. The Commission anticipated that up to $8 million dollars of the mitigation money would be applied to demolishing structures and contaminated materials at Skaggs Island to facilitate transfer of the government-owned portion of Skaggs Island to the USFWS so that it could be restored for wildlife habitat. However, Commissioners also supported a minimum of $2.5 million be set aside for Central Bay mitigation projects, with any funds left over from the Skaggs Island remediation being applied to the approved Central Bay mitigation projects. In addition, the mitigation approved by the Commission was only for those impacts identified at the time Caltrans applied for the original permit. Since issuance of the original permit, a number of changes have been made in project construction leading to impacts not anticipated when the permit was first authorized. To date, while the additional impacts have exceeded those originally anticipated, in the Commission's opinion, the additional impacts have been fully mitigated by the project's original mitigation program. However, should a project change lead to significant additional impacts, or if the Commission determines that the cumulative effect of a number of small project changes has exceeded the impacts that the Commission determined were fully mitigated in the original authorization, the Commission may require additional mitigation (Amendment Nos. One, Two, Three and Four).

C. **Maximum Feasible Public Access.** Section 66602 of the McAteer-Petris Act states that existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided. In part, the Bay Plan policies on public access state that whenever public access to the Bay is provided as a condition of development, on fill or on the shoreline, the access should be permanently guaranteed, should be consistent with the project and the physical environment, and should provide for the public's safety and convenience. In addition, public access should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for the physically handicapped to the maximum feasible extent, should include an ongoing maintenance program and should be identified with appropriate signs. In considering whether a project provides the maximum feasible public access, the Commission should consider physical and visual access to the Bay shoreline, as well as the appearance and design of shoreline structures.

1. **Physical Access.** Currently, there is no pedestrian or bicycle access on the bridge. There is also limited physical access to the Oakland Touchdown area. Fishermen use the beach on the north side of the Oakland Touchdown and public access is authorized at Radio Beach. However, areas within Caltrans existing right-of-way are signed no trespassing and public access is not authorized.

   To address the Commission's public access requirements, Caltrans will construct approximately 9.6 acres of new public access areas including: (a) a 2.18-mile-long, 15.5-foot-wide bicycle and pedestrian lane on the new bridge with six belvederes to provide viewing and resting opportunities for trail users, bicycle and pedestrian access that, when coupled with public access required as part of the Cypress project (BCDC Permit No. 1993.011.00), will eventually connect the Oakland Touchdown with Emeryville; (b) a 4.2-acre parcel within the existing bridge approach to improve public access and treat storm water runoff as part of the proposed Gateway Park, including a temporary public access parking lot near the Oakland Touchdown located south of the Eastbound lanes; and (c) a public access path terminus located on Yerba Buena Island (YBI). All of the public access improvements will be accessible to the disabled and will be maintained and guaranteed for so long as the improvements authorized herein remain in place. Because the new East Span alignment and the 4.2-acre parcel for Gateway Park will eliminate the area where some of the improvements required by Permit No. 1993.011.00 would have been constructed, Permit No. 1993.011.00 was amended to require Caltrans to provide $1.1 million to compensate for the loss of two overlooks at the north and south side of the bridge, associated roadways, parking lot, and landscaping. The $1.1 million in-lieu fee will be distributed by the California Coastal Commission to support EBRPD's effort to develop Gateway Park at the Oakland Touchdown, or to support other public access in the City of Oakland.

   This amended authorization also requires that Caltrans develop the land, for a stormwater retention basin and public park, directly south of the Oakland Touchdown that is currently occupied by the existing East Span, but will be made available when the East Span is moved to the north. When the East Span is realigned to the north and the existing bridge is removed, this land will be made available primarily for the construction of a new park but other uses will be authorized such as: (a) treatment of stormwater runoff; (b) existing and future utilities; and (c) access to maintain the new East Span which may involve some at-grade roadway. All such uses that serve the bridge replacement project (Amendment No. Three). Caltrans is concerned that there is a reversionary clause for this land that requires that the land revert to the Port Of Oakland when it is no longer needed for highway purposes. However, the Regional Water Quality Control Board has indicated that it will likely require that a portion of this land be used to treat stormwater runoff from the toll plaza as part of the Board's waste discharge requirements for the new East Span. The Commission finds that this land is also needed to mitigate the public access impacts of losing the areas north of the Oakland Touchdown for public access improvements required in BCDC Permit No. 1993.011.00 for the Cypress improvements. This amended authorization

requires that this land be developed for both required uses (stormwater BMPs, existing and future utilities, access for bridge and roadway maintenance and public access), through the use of thoughtful design and landscaping. This authorization requires that the land south of the touchdown shall be planned, developed and maintained for landscaping, open space, and recreational facilities, compatible with the "Gateway Park," to be approved by or on behalf of the Commission in consultation with the EBRPD, the Oakland Base Reuse Authority, the Port of Oakland and the City of Oakland. Only through such design can the Commission find that this portion of the public access program is consistent with the Commission's public access policies.

With respect to future public access connections to the West Span of the Bay Bridge and ultimately to the City of San Francisco, legislators provided that the Metropolitan Transportation Commission (MTC) could use bridge tolls under AB 2038 to design and construct a bicycle and pedestrian path on the West Span of the SFOBB for continuous access across the bridge. A Caltrans study determined that while it is feasible to construct a bicycle and pedestrian path on the West Span, it would cost between $160 million to $387 million, depending upon the alternative chosen. To date, no funding is available to continue the path across the West Span. However, this authorization is conditioned to require that Caltrans design the YBI terminus in such a manner to facilitate such a future connection, while serving as a terminus for the East Span bicycle/pedestrian path initially.

The DRB recommended that Caltrans provide more than the six belvederes that Caltrans originally proposed at 0.2 mile intervals along the bridge (beginning approximately 0.65 miles from the YBI terminus and the interim parking located at the Oakland Touchdown). The DRB felt that additional belvederes were necessary for the comfort and safety of trail users and that six belvederes would be too widely spaced to provide sufficient resting areas. Caltrans, however, believes that six belvederes are sufficient and that the project cannot support the cost of additional belvederes. Because of the project's significant cost overruns, and because of the high price tag for each belvedere, the Commission finds that although additional belvederes would be far preferable, the six required herein are a reasonable compromise between providing an important public access benefit and respecting the high cost of the public access improvements provided, particularly the bicycle/pedestrian path across the East Span and the belvederes.

The DRB also recommended that Caltrans provide seating at the belvederes. Caltrans contends that seating at the belvederes cannot be provided because of excessive loads associated with the addition of seating and lack of funding limitations. This authorization requires lightweight-benches at each of the belvederes, located near the edge of the pedestrian path and facing the Bay, to provide seating opportunities for trail users. The Commission finds that such seating elements will be relatively low cost, can be safely incorporated into the belvedere design, and will provide an important public access amenity.

The DRB suggested that Caltrans consider different alternatives for separating cyclists from pedestrians along the path. Due to budgetary constraints, design considerations, and safety concerns, however, Caltrans chose to address this last concern through the use of "visual cues" such as different colored surfaces differentiating the pedestrian portion of the path from the bicycle lanes and lane lines rather than a safety barrier. Initially, no speed limit will be imposed on bicyclists and a safety review will be implemented at a later date to monitor the effectiveness of the proposed safety delineation on the bicycle and pedestrian path. Caltrans designed the bicycle and pedestrian path with input from the Bay Bridge Bicycle and Pedestrian Advisory Committee (BBBPAC). BBBPAC believed that a physical separation, such as a barrier, between pedestrians and bicyclists may cause more accidents than would be prevented. The Commission concurs that, at least initially, this is a reasonable approach for separating potentially conflicting uses, pending future review of problems that may occur.

Finally, Senate Bill 60 (SB 60) prohibits the Commission from requiring Caltrans to develop a public access pathway with the replacement of the East Span. However, subsequent legislation provided funding for the bicycle/pedestrian path across the East Span and such a path is specifically authorized herein. This authorization also requires that the path be maintained by the permittee in a clean and safe manner, and that the path connect to other required public access areas, or be designed to allow such connections in the future. The Commission finds that such requirements are consistent, with the Commission's public access policies, Assembly Bill 2038 (AB 2038) which allowed funding for the bicycle/pedestrian path across the bridge, and Senate Bill 60 (SB 60). The Commission finds that, as conditioned, the physical public access program required and authorized herein is the maximum feasible consistent with the project.

2. **Visual Access**. Caltrans worked with the Commission's DRB to maximize visual access on the new structure. The items of particular concern to the DRB were the bridge barrier railing and the railings located along the pedestrian path.

   The existing safety barriers on the existing East Span are solid steel and approximately 39.5 inches high (1-meter-high). As a result, they impair views to the Bay for many motorists. Caltrans proposed to use a modified Type 732 bridge barrier railing that would be 32 inches high. The lower height will improve views of the Bay for all motorists. The barriers will be smooth on both the inside and outside faces with no articulation. The majority of the proposed safety barrier will be concrete, except a portion of the skyway and the entire main span, which will be steel.

   Several possible railings were evaluated for the bridge. Because this is a scenic roadway, where superb views of the Central Bay are possible, BCDC staff and the DRB recommended that Caltrans evaluate more transparent barriers, such as the California Type 80 safety barrier or an Alaska Barrier. Since some views through the bridge barriers will be impaired by the adjacent parallel superstructure or the elevated bicycle and pedestrian path, such transparent barrier railings would

primarily provide clearer views along the north side of the westbound structure. However, Caltrans intends to locate utilities in the barriers, a common practice that would be less feasible in the more transparent barriers because of the reduction in the space available for such utilities. In addition, Caltrans states that crash tests of these barriers had not been completed during the design phase of “see through” barriers on bridge decks like those proposed for the East Span. Since then, crash tests have been completed and both the California Type 80 and Alaska barrier have been approved for use by Caltrans. However, Caltrans contended that the need for accommodating utilities in the railing, and the need to avoid delays in constructing the project that would likely have occurred with design revisions, supported its proposal for a solid barrier. Because of the critical importance of this bridge to the Bay Area’s health, safety, welfare and economy, and because of the importance of replacing the existing structure as soon as possible with a structure much less likely to fail in a major seismic event, the Commission reluctantly concurred.

The project will include a 55-inch railing height for the bicycle/pedestrian path. The DRB recommended lowering the path railing from 55 inches to 48 inches to expand views of the Bay, enhance public access and improve the pedestrian scale of the path. The DRB requested that Caltrans provide it with empirical data showing the lowest possible safety railing that would provide enough protection for pedestrians and bicyclists. More specifically, the DRB requested that Caltrans provide evidence that a 48-inch railing height would not provide the needed safety for the public.

Caltrans provided recommendations and guidelines from AASHTO and Caltrans’ standards established to provide safe conditions for the public. AASHTO establishes nationwide policies and standards. AASHTO standards require that the minimum height of a railing on structures must be 54 inches. The 54-inch rail height was one of several standards adopted by Caltrans in 1978 as part of its development of the Planning and Design Criteria for Bikeways in California. Caltrans formed a committee, composed of engineers, bicyclists (League of American Wheelmen, California Association of Bicycling Organizations), public agencies and safety experts, to establish design standards to facilitate the development of bicycle facilities in California. This committee used its expertise to study and develop bicycle facility design guidelines. With respect to bridge railings, the committee developed an estimated center of gravity for an assumed large bicycle with a tall rider, added a safety factor to deal with high impact or broadside accidents, and concluded that 54 inches was an appropriate rail height to insure bicycle rider safety. To date, the work done by the committee remains the only study of the issue. As a result this authorization allows the rail adjacent to the bike path to be a maximum height of 55 inches. Unless other studies of the height of rails necessary to assure bicycle/pedestrian safety are completed within the time frame where revisions to the rail are possible, the Commission concurs that safety should be the primary concern of rail height. Thus, because the only extant study determined 54 inches was the appropriate, safe height, the Commission finds that such a height is consistent with its public access policies.

3. **Appearance and Design**. The Bay Plan's policies on appearance, design, and scenic views, which are largely advisory, states that "maximum efforts should be made to provide, enhance, or preserve views of the Bay and shoreline, especially from public areas." As a result of the East Span Replacement Project, there will be several significant visual changes along this corridor. The project will introduce a new suspension bridge and skyway bridge north of the existing bridge, and will remove the existing superstructure, towers and foundations following construction completion. Caltrans has incorporated the recommendations of the Commission to achieve design consistency between the superstructure and the approach structures, to bring the design details of the towers down to the railings and other bridge elements, and to maximize motorist and pedestrian views from the bridge. The steel pedestrian railings will have bollards that are spaced approximately 33-feet-apart on the main span and approximately 26.2-feet-apart on the skyway with some variation. The bollard placement and design are integral to the cantilever beams that support the path. The railings will be further divided by angle posts spaced every 11 feet apart and square pickets spaced 4-inches apart. The DRB was concerned that the railing design did not share enough of the architectural vocabulary of the tower, piers and other bridge elements and Caltrans attempted to address the DRB's concerns to the extent practicable. Due to cost, maintenance, and structural constraints, Caltrans concluded that it could not accommodate all of the Board's recommendations.

   Since Caltrans' last presentation to the DRB, there have been a number of design changes. These changes affect the appearance and design of the outer railings on the pedestrian and bicycle path. The railings have been re-designed to simplify the railing and to address concerns regarding the ability to clean and paint the interior surfaces of the posts. The bollard design has not changed in size, but has changed in its appearance due to engineering constraints associated with the expansion and contraction of the steel bike path segment. In addition, the design of the bollards has changed such that the top rail is continuous at one side of the bollard and the post design was modified to be square tube steel set at right angles to the bridge in response to previous EDAP direction to simplify the design. The original DRB design recommendation of the bollard was to unify the railing with the structure of the bike path and to provide a visual rhythm along the pathway. The aesthetic recommendations may be compromised by the fact that the proposed design of the bollard segment will appear asymmetrical.

   The DRB also requested a more detailed description of the lighting and specifically asked for an explanation of the methods of lighting the main span and the reasons for varying the height of the light standards. Consistent with EDAP's recommendation, the replacement bridge will be illuminated exclusively (except for bollard lighting) with metal halide fixtures to produce a cool white light rather than the warm yellow tones of the low-pressure sodium lights found on a typical freeway. The roadway lighting will result in a constant level of light for the entire length of the bridge and from a distance there will be a rising line of white lights punctuated by the main tower.

The Commission would have preferred for Caltrans to return to the DRB, as the DRB requested, and discuss the changes to the project that had been made in response to the DRB's concerns, and the reasons other requested changes could not be made. However, because these are advisory policies that Caltrans largely attempted to meet within its budgetary constraints, and because Caltrans modified those portions of the design that will not have adverse effects on safety, maintenance and budget, the Commission finds that the project is generally consistent with Bay Plan policies on Public Access, Visual Access and Appearance and Design to the extent practicable.

4. **Transportation**. In part, the Bay Plan policies on transportation state that "if a route must be located across a waterway, the following provisions should apply: (a) the crossing should be placed on a bridge or in a tunnel, not solid fill; (b) structures should provide adequate clearance for commercial ships, Navy ships, and pleasure boats to have uninterrupted passage at all times; (c) toll plazas, service yards, or other ancillary features should not be located on new fill; and (d) to provide maximum ultimate capacity on any new route that is allowed over or under a waterway (and thus to minimize the number that have to be allowed in the Bay), the design of the route should, if feasible, accommodate future mass transit facilities and subsequent installation automatic power and guidance elements for vehicles."

   The East Span replacement crossing will be a steel suspension bridge connected by a cast-in-place or pre-cast, post tensioned concrete "skyway" and cast-in-place prestressed approach structures. Approximately 45,572 cubic yards of fill covering approximately 3.6 acres of Bay surface area at the Oakland Approach will be part of the Bridge.

   a. **New Bay Crossings**. The new East Span will be a pile-supported bridge, designed to minimize fill impacts, and thus, the Commission finds it to be consistent with this requirement of the Bay Plan's transportation policies.

   b. **Adequate Navigational Clearance**. The U.S. Coast Guard (USCG) has determined that the replacement bridge will not impact marine traffic, and thus, the Commission finds it to be consistent with this requirement of the Bay Plan's transportation policies.

   c. **Toll Plaza and Ancillary Features.** The existing toll plaza, which is mostly located outside of the Commission's jurisdiction, will not be affected by the replacement project, and thus, the Commission finds it to be consistent with this requirement of the Bay Plan's transportation policies.

   d. **Light Rail (LRT) and Heavy Rail on the Replacement Bridge.** With the cooperation of local and regional transportation agencies, Caltrans evaluated the constraints and opportunities for providing heavy and light rail transit (LRT) as part of the East Bay Bridge Replacement Project. Caltrans has also considered the studies and recommendations given by various planning organizations, such as the MTC, and it has prepared its own studies to consider multi-modal transportation, HOV lanes and other transportation improvement strategies.

Due to various constraints, which primarily are budgetary, and due to the nature of the costs to retrofit the West Bay Bridge, Caltrans determined that design allowances for heavy rail on the new structure are not a viable option at this time. However, the existing West Bay Bridge originally was designed for light rail transit traffic and the costs associated with retrofitting this bridge should be substantially less than for heavy rail. Caltrans has also designed loading on the East Span to accommodate future LRT. Heavier vehicles, such as high-speed rail or commuter heavy rail similar to BART, could also be accommodated but would require substantial modifications to the current design or a future retrofit to this structure. Caltrans also estimated the cost and other requirements of accommodating rail transit across the structure in both LRT and heavy rail configurations and made a determination that one travel lane and one shoulder in each direction would have to be converted, therefore reducing the capacity of the East Span to four vehicular lanes, and some structural modifications would be necessary. Since multi-modal strategies would reduce the number of mixed flow traffic lanes, the selected strategy would have to capture an amount of ridership that matches the loss in mixed-flow vehicular capacity on the SFOBB and its approaches. The accommodation of rail and five lanes of traffic would require significant modifications to the current design and is not within the current scope or budget of this project. Caltrans and other transit agencies have not identified any project funding to accommodate a future rail transit connection across a replacement bridge other than the LRT provisions included in the East Span Replacement Project. The decision to implement any other rail accommodation option will be based on funding, on a selected strategy that would have to capture an amount of ridership that matches the loss in mixed-flow vehicular capacity, and on the time required to accomplish the necessary design and construction activities. Finally, a replacement structure is not a new route across the Bay, as used in the Bay Plan's transportation policies. In addition, SB 60 prohibits local and state permitting authorities from imposing any requirements that a mass transit facility be constructed on a replacement bridge for the East Span as a condition of any permit. For all these reasons, the Commission finds that additional transit facilities need not be provided on the new span in order for the East Span Replacement Project to be consistent with this portion of the Bay Plan's Transportation Policies.

e. **High Occupancy Vehicle (HOV) Lanes on a New Span.** AC Transit had requested that Caltrans study an HOV lane on the SFOBB. Caltrans evaluated such a facility in October 1994. The "MTC SFOBB Rail Feasibility Study" identified preliminary estimates on the cost of SFOBB rail, structural modifications to the East and West Spans, and possible service operating scenarios. The study did not estimate potential ridership or identify environmental constraints.

Unfortunately, no funding currently exists or is likely in the immediate future, to support construction of an HOV lane on the new East Span. None of the previous planning studies identified an HOV lane on the SFOBB as a preferred strategy. It has not been included in the MTC's 1994 Regional Transportation Plan (RTP) or its 1996 and 1998 updates, including a 1999 amendment. The planning horizon for the RTP is 20 years. MTC could include the multi-modal strategies in future RTPs if the projects are consistent with local and regional objectives and strategies for congestion management, but the bridge will already be constructed by then. In addition, neither multi-modal option was included in a recently enacted statewide funding package for transportation improvements (Governor's Traffic Congestion Relief Program, July 2000). Finally, SB 60 prohibits local and state permitting authorities from imposing any requirements that a mass transit facility be constructed on a replacement bridge for the East Span as a condition of any permit.

Because no funding is available for HOV lanes on the East Span now or in the foreseeable future, the Commission finds that the East Span Replace project is consistent with the Commission's transportation policies to the maximum practicable extent.

5. **Dredging.** In part, the Bay Plan policies on dredging state in part that dredging should be authorized when the Commission can find that: "(a) the applicant has demonstrated that dredging is needed to serve a water-oriented use or other public purpose; (b) the materials to be dredged meet the water quality requirements of the RWQCB; and (c) important fisheries and Bay natural resources would be protected." In addition, the policies state that the disposal of dredged materials should be encouraged in non-tidal areas where the materials can be used beneficially, or in the ocean.

   Caltrans will dredge a total of 616,721 (Amendment No. Six) cubic yards of material over a 99-acre area to construct the new bridge and remove the existing bridge. The replacement bridge is a water-oriented use under the McAteer-Petris Act and the *San Francisco Bay Plan* and is necessary to meet current seismic and traffic safety requirements. Some dredging will be required for the temporary access trestles and cofferdams. Caltrans performed testing and analysis of the dredge sediments under the requirements of the Dredge Materials Management Office. Caltrans completed the Investigation Report (Amended Sampling and Analysis Plan) in June of 2000. Although the report concludes that the materials will be appropriate for disposal at the approved Deep Ocean Disposal Site (DODS) and SF-11 disposal site, Caltrans will dispose some of the materials at an approved upland site consistent with the RWQCB's Section 401 permit. Caltrans received its 401 permit from the RWQCB on October 17, 2001, the day before the Commission's public hearing on the project. Caltrans will retain some excavated material from dismantling dredging for reuse in restoring the construction barge access channel near the Oakland Touchdown, if the Commission authorizes such disposal.

The U. S. Army Corps of Engineers (USACE) is currently processing Caltrans' Section 401 (Clean Water Act) permit. In conjunction with its 401 permit, Caltrans has concluded its consultation with the USFWS but has not concluded its formal consultation with the U. S. National Marine Fisheries Service (NMFS). Caltrans is currently working with NMFS to establish, in accordance with Section 7 of the Endangered Species Act, appropriate mitigation to address potential fish kills due to pile driving operations. NMFS is also very concerned about the project's potential impacts to existing eelgrass beds, which are important fishery habitat. In addition, NMFS is critical of the mitigation for eelgrass habitat and believes the mitigation program should specifically provide for in-kind offset to these impacts.

Special Condition II-F-9 requires Caltrans to continue to coordinate with appropriate wildlife agencies to minimize impacts to fish during construction activity and to provide additional mitigation if monitoring indicates that fish kills are occurring that are related to pile-driving activities. In addition, Special Condition II-D-4 requires that dredging should not occur between December 1 and March 3 of any year to avoid potential disturbance of herring spawning in the area. The project, in consultation with the National Marine Fisheries Service and the California Department of Fish and Game, also includes a number of mitigation measures, such as using a bubble curtain to reduce fish kills from pile-driving activity, and creating a mitigation fund for salmonids. For all these reasons, the Commission finds that the project is consistent with the Bay Plan's requirements that dredging and construction activities be conducted in such a manner as to protect important Bay fisheries.

Caltrans will dispose approximately a third of the dredged material at SF-11 (Alcatraz), a third at the federally-approved deep ocean disposal site, and a third at either Hamilton or Montezuma Wetland Restoration sites, if those sites are available, and to deep ocean if they are not. Disposal of dredged materials associated with dismantling the existing bridge will be reconsidered in a few years when the Hamilton or Montezuma sites may be ready to receive materials. Disposal of the dredged materials at landfills for use as daily cover will be avoided as it would generate multiple trips to these sites with smaller volumes of dredged materials, resulting in significantly higher costs and traffic and air quality impacts.

In addition, Special Condition II-F-8 requiring that Caltrans make every effort to dispose as much dredged material as possible that is suitable for such use at upland reuse sites. Because disposal of dredged material will occur at upland sites wherever and whenever possible, or at the Ocean disposal site, the Commission finds that the disposal of dredged materials generated by the project is consistent with the Commission's Long Term Management Plan for Dredged Material.

Finally, while using dredged materials to fill the barge access channel at project completion and planting the channel with eelgrass is currently inconsistent with the Commission's dredging policy, this authorization specifically recognizes that Caltrans may amend this permit to allow such use of dredged material should the Commission amend its dredging policy to allow such use.

6. **Consistency with YBI Park Priority Use Designation.** Yerba Buena Island (YBI) is designated as a park priority use area in Bay Plan Map No. 4. It is important to recognize that the existing bridge extends over and has footings and piers within the park priority use area. Because the new bridge would replace the existing double deck bridge with two parallel spans, each slightly wider (because of shoulders and the public access path) than the existing span, the new bridge would cover a greater portion of the park priority use area on YBI.

   Because this authorization requires Caltrans to provide a trail terminus for the bicycle/pedestrian bridge on the East Span, because the existing span over the island will be removed and the new span will not cause an appreciably larger impact on the Island, and because the bridge will cover as little of YBI as possible because of the Commission's minimum fill requirements, the Commission finds that the East Span Replacement Project is consistent with the park priority use designation for YBI.

D. **Amendments**

1. **Amendment No. Six.** Amendment No. Six authorized the installation and use of a temporary, double-decked, south-south detour at Yerba Buena Island (YBI). Originally, Caltrans proposed to use a north-south, single-decked structure that would be used to route traffic on to YBI during replacement span construction activities. However, Caltrans developed an alternative to the north-south detour that would accelerate the overall construction schedule for the replacement span by 1 to 1.5 years. This alternative, the south-south detour, is a double-decked bypass structure that will connect the existing East Span on the south side of YBI between the E-1 bridge pier on the new bridge and the YBI tunnel. The bypass will carry five lanes of traffic in each direction. A portion of the detour, the east tie-in truss, will likely be fabricated off-site and brought in by barge, assembled on-site and lifted into position. A temporary marine access trestle will be required in the Bay on the east side of YBI at Coast Guard Cove to off-load the prefabricated east tie-in of the detour. The trestle authorized in Amendment No. Six required one hundred and sixty, two-foot-in-diameter piles to support the temporary marine access trestle. The trestle was to result in approximately 108,000 square feet (2.47 acres) of pile-supported fill that was to be in place for approximately 7 years. In addition, Caltrans needed to dredge up to 10,000 cubic yards of material to enable barge access to the trestle. The south-south detour also required the construction of a temporary, land-based skid rail structure that was to cover 0.75 acres within the Commission's 100-foot-shoreline band. The skid rail structure was designed to allow the east tie-in truss to be moved from a barge using the access trestle to the falsework below the existing bridge and also may have been used to dismantle the existing bridge.

   Installation of the temporary access trestle authorized under Amendment No. Six was to impact up to 8,276 square feet (0.19 acre) of eelgrass habitat according to the October 1999 survey at Coast Guard Cove due to dredging and shading from the access trestle. As mentioned above, the trestle authorized under Amendment

No. Six was to be in place for up to seven years to accommodate the installation of the east tie-in and dismantling of the existing span. Caltrans states that recovery of the eelgrass beds would take about two years after the original elevations and sunlight are restored. Impacts to the eelgrass beds resulting from the marine access trestle were discussed among the resource agencies at the Interagency Biological Mitigation Group on March 31, 2003. Representatives of the resource agencies agreed that if eelgrass restoration efforts associated with the project were successful elsewhere and since the marine trestle impacts will be temporary, that additional eelgrass mitigation will not be necessary.

Since authorizing the marine access trestle under Amendment No. Six, Caltrans has redesigned the trestle. The new trestle will result in 4,069 square feet of pile-supported fill, much less fill than that associated with the trestle authorized under Amendment No. Six. The redesigned trestle will also be located just east of the area previously designated for the trestle and no dredging will be needed. Relocating the trestle to this area will also avoid impacts to 8,276 square feet of eelgrass habitat. Modifications to the fill and dredging estimates as well as deletion of language regarding eelgrass impacts associated with the originally authorized trestle were made under Amendment No. Eleven to this authorization.

As such, the activities authorized in Amendment No. Six consist of the dredging of up to 10,000 cubic yards of material, consistent with Regulation Section 10602(b) (subsequently deleted in Amendment No. Eleven) and the installation of the skid rail structure involves the placement of inert, inorganic materials (subsequently significantly downsized in Amendment No. Eleven) within the Commission's 100-foot shoreline band that does not have an affect on present or future maximum feasible public access to the Bay or Bay resources consistent with Regulation Section 10602(a)(1). Therefore, these improvements are considered "minor repairs or improvements" for which the Executive Director may issue an amendment to an existing permit, pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

The installation and temporary use of the marine access trestle authorized under Amendment No. Six, and modified under Amendment No. Eleven does not constitute a material alteration of the originally authorized project pursuant to Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the Bay Plan because the trestle will result in a small fraction of the amount of temporary pile-supported fill that was originally authorized in the permit and will be one of many construction trestles that are necessary to construct the project. The size of the trestle is the minimum necessary to safely and effectively accommodate personnel during installation of the detour and will also be used to demolish portions of the existing span. There is no alternative upland location for the trestle because it is necessary for bridge construction and bridges are designated as water-oriented uses in the San Francisco Bay Plan. Lastly, construction of the trestle is necessary to install the double-decked, south-south detour. Installation of the south-south detour will allow the original span to be removed a year and a half earlier than originally

proposed uncovering of 12.5 acres of fill ahead of schedule. As such, the installation of the marine access trestle is not a material alteration of the original project for which the Executive Direction may issue a permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~E.~~ 2. **Amendment No. Seven.** Amendment No. Seven authorizes the installation of temporary pipes and floating rafts that will be part of a thermal cooling operation in Clipper Cove, off of Yerba Buena Island. The thermal cooling operation will involve withdrawing water from the Bay and using the water to cool and cure concrete that will be poured for the east- and west-bound bridge piers. Prior to discharging the water back into the Bay, the water will be cooled and aerated. The operation will require the installation of three, twelve-inch-in-diameter pipes that will displace 77 cubic yards of Bay water. The pipes will be attached to three floating rafts that will cover 192 square feet of Bay surface area and the pipes will run along 100 feet of the shoreline. The thermal cooling elements are temporary and are anticipated to be in place for approximately seven years, at which time they will be removed from the Bay and placed at a location outside the Commission's jurisdiction. Fish screens at a size consistent with the recommendations of NOAA Fisheries will be placed on the intake pipes to prevent the entrainment of fish species into the cooling pipes.

Additionally, Amendment No. Seven authorizes the deletion of language from Section I-A-3-d and I-A-4-c (in shoreline band) of this amended permit that authorized Caltrans to cap the rock rip rap shoreline with soil above the limits of tidal action and plant the area with native plant species in an effort to provide upland transition habitat and roosting habitat for shorebirds. Since issuance of the BCDC permit for the project, Caltrans has engaged the services of the U.S. Army Corps of Engineers (Corps) to review the feasibility of the preliminary design for rock slope protection and to perform a wave run-up analysis for the area protected by the proposed revetment. The Corps presented a number of recommendations to Caltrans as a result of their analysis. Among the recommendations was that no vegetation should be placed over the upper part of the revetment due to a potential increase in the effective roughness coefficient, that could result in higher run-up elevations and crest heights. While vegetation of this area was part of Caltrans' overall approach to mitigating impacts of the project, the Commission staff is not requiring additional mitigation to off-set the loss of the transitional habitat. However if it is found that through future permit amendments and project revisions that the mitigation initially required in the permit is not adequate to fully mitigate the impacts of the project, then the Commission staff will likely require additional mitigation to adequately offset the impacts of this loss in transition habitat. The items authorized in Amendment No. Seven involve an activity similar to and with no greater adverse impact on the Bay than the placement of 1,000 square feet of new Bay fill for a single boat dock pursuant to Commission Regulation Sections 10601(e)(3) and 10601(a)(1), respectively, and the placement of inert, inorganic fill that does not have an affect on present or future maximum feasible

public access to the Bay or Bay resources, pursuant to Regulation Section 10601(b)(1) and are thus considered "minor repairs or improvements" for which the Executive Director may issue an amendment to an existing permit pursuant to Regulation Section 10822 and Government Code Section 66632(f).

~~F.~~ 3. **Amendment No. Eight.** Amendment No. Eight authorizes the placement of two temporary structures that will be used to facilitate construction of the bridge replacement span. These structures include a 175-square-foot rock screed (a leveling device) that will be used to consolidate rock material that was placed within coffercells and a 565-square-foot barge loading ramp that will allow drive on and drive off access to material barges that store construction equipment. Both structures will be placed at Berth 7 which is located in a periodically maintained Port of Oakland channel and will be removed upon project completion. As such, the installation of the structures authorized in Amendment No. Eight is similar in activity and impact on the Bay pursuant to Regulation Section 10601(e)(3), to the construction of a new single boat dock, no larger than 1,000 square feet pursuant to Regulation Section 10601(a)(1) and is considered a "minor repair or improvement" for which the Executive Director may issue an amendment to a permit pursuant to Regulation Section 10822.

~~G.~~ 4. **Amendment No. Nine.** Amendment No. Nine involves deletion of a portion of the eelgrass plateau monitoring requirement from Special Condition II-F-5 of this authorization. Under previous amendments to this authorization, Caltrans placed 1,200 cubic yards of sand at the Emeryville Flats in an attempt to create six test plot plateaus at an appropriate bathymetry to support eelgrass. Eelgrass from the barge access channel was transplanted to the test plot plateaus which were monitored for the first year following transplant activities. Results from the first year of monitoring indicated that the test plot plateaus had eroded and the eelgrass transplanted to the plots had not survived. The lack of success of the transplant program at the test plots is attributed to the constant high tidal energy that exists at the Emeryville Shoal which exposes the area to a considerable amount of erosion and sediment loss. The losses at the test plots were further intensified by the greater exposure of the plots to this tidal energy compared to the surrounding bay floor topography. Since eelgrass no longer exists at the test plots requiring monitoring of the plots for eelgrass viability is not reasonable; therefore language has been deleted from Special Condition II-F-5 which required Caltrans to monitor the test plots biannually until eelgrass was transplanted back to the barge access channel. Deletion of the monitoring requirement does not constitute a material alteration of the originally authorized project pursuant to Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the San Francisco Bay Plan for which the Executive Director may issue an amendment to a permit pursuant to Government Code Section 66632(f) and Regulation Section 10711.

~~H.~~ 5. **Amendment No. Ten.** Amendment No. Ten extended two mitigation compliance dates contained within this authorization. Caltrans states that it was unable to meet a July 1, 2004 deadline for commencing building and hazardous material removal at Skaggs Island contained in Special Condition II-F-10 of this permit due to delays associated with transferring the land from the U. S. Navy to the U. S. Fish and Wildlife Service. Therefore the commencement date for removal of building and hazardous materials at Skaggs Island was extended to July 1, 2005.

The restoration required in Central San Francisco Bay also encountered delays. Although a mitigation location has been selected and a draft work plan prepared and submitted to the agencies and several meetings held to discuss the mitigation, Caltrans stated that it was unable to comply with the July 1, 2004 deadline regarding the commencement of a habitat restoration project at the Eastshore State Park because a few outstanding issues remain unresolved. Thus, the commencement date for restoration has been extended one year, to July 1, 2005. Caltrans attributes the delay in commencing restoration activities to difficulties in obtaining written agreements from various resource agencies that the creation of eelgrass beds to mitigate bridge impacts and its subsequent potential use by special-status species would not conflict with future recreational activities, a requirement of the State Department of Parks and Recreation for using the site for habitat mitigation purposes. It is anticipated that the issues holding up both elements of the mitigation program will be resolved in the coming year. Extending the commencement dates contained in Special Condition II-F-10 of this authorization do not constitute a material alteration of the originally authorized project pursuant to Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the San Francisco Bay Plan for which the Executive Director may issue an amendment to a permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~I.~~ 6. **Amendment No. Eleven.** Amendment No. Eleven to the amended permit involves the construction of a 222-square-foot wooden staircase on the slope adjacent to the Torpedo Building on YBI. The staircase is needed to provide safe access to the work area at Pier T1 and will be removed upon the completion of construction of the east span of the Bay Bridge. Additionally, this amendment clarifies that 0.02 acres of a construction staging area on YBI will be used as an employee shuttle turnaround. Lastly, Amendment No. Eleven involves modifying the fill estimates and special conditions associated with the marine trestle that was authorized under Amendment No. Six as the trestle has been significantly redesigned and downsized. The originally authorized trestle would have resulted in the placement of 2.47 acres of pile-supported fill and was thought to be needed to offload equipment that would be used to construct the south-south detour at YBI. Since authorizing Amendment No. Six, Caltrans has found an alternative design to the trestle. This redesigned trestle will involve the placement of much less fill (2.38 acres) than the trestle authorized under Amendment No. Six. In addition, the redesigned trestle will be relocated to the east of the location originally proposed for the trestle, thus not requiring dredging nor impacting eelgrass habitat. To reflect the location and fill

quantities associated with the redesigned trestle, modifications to the authorization section as well as special conditions were made under Amendment No. Eleven. As such, the activities authorized under Amendment No. Eleven involve the placement of inert, inorganic materials within the 100-foot shoreline band with no effect on present or future maximum feasible public access to the Bay or Bay resources pursuant to Regulation Section 10601(b)(1) and significant reductions to the amount of fill authorized for the temporary trestle. Thus, these activities authorized under Amendment No. Eleven are considered "minor repairs or improvements" for which the Executive Director may issue an amendment to an existing permit pursuant to Regulation Section 10822 and Government Code Section 66632(f). Additionally, the modifications made to this authorization as a result of the shuttle turnaround and the redesigned trestle do not constitute a material alteration of the original project authorized herein for which the Executive Director may issue an amendment to a permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~J.~~ 7. **Amendment Nos. Twelve and Seventeen**. Amendment No. Twelve to the permit authorizes the placement of fill at two locations to partially satisfy the mitigation requirements of the original permit. First, language in the authorization has been revised to more accurately reflect the amount of fill that will be placed to create bird roosting habitat, as required in Special Condition II-F-7, above. The permittee studied shorebird roosting sites in the vicinity of the Oakland Touchdown and results indicated that the birds preferred rocky areas, such as the rip rapped shoreline. Based on this study the permittee will install a rock island approximately 200 feet offshore. Construction of the island will involve placing 734 cubic yards of rock in the Bay, creating a base that has a footprint of approximately 4,047 square feet. The island will provide 500 square feet of roosting habitat above Mean Sea Level.

Amendment No. Twelve also authorizes an eelgrass pilot project at the North Basin in the City of Berkeley. The pilot project will involve the placement of approximately 3,900 cubic yards of material to provide approximately 54,000 square feet of plantable surface area. The plateaus will be monitored for one year. Depending on the results of the pilot project, the full-scale eelgrass restoration project (15.8 acres) will either be constructed at the North Basin, or another suitable site identified for the full-scale effort.

Amendment No. Seventeen modifies the requirements of Amendment No. Twelve. Caltrans completed a one-year monitoring effort of the pilot eelgrass transplant site in July 2006. The study was conducted in accordance with the "North Basin Mitigation Pilot Program Work Plan" dated February 1, 2005, as described by Melissa Barrow of Caltrans in an e-mail transmitted to BCDC on March 17, 2005. The one-year pilot project activities included the placement of an earth reinforcement mattress and engineering fabric over an approximately 54,000-square-foot area, which was then covered with approximately 3,900 cubic yards of material to create plateaus at elevations expected to support eelgrass. Subsequently, the plateaus were planted with eelgrass obtained from nearby locations and monitored for a one-year period.

During the initial one-year pilot project period, the transplanted eelgrass remained relatively stable following early losses that occurred during July and August 2005. However, between August 2005 and January 2006, eelgrass was lost from the site and, by April 2006, there was minimal evidence of any remaining eelgrass at the pilot site. In the winter of 2005-2006, eelgrass declined at many areas in the northern San Francisco Bay, which may have been due to decreased salinity levels present during that winter for extended periods of time, rather than site conditions.

By July 2006, eelgrass rebounded at a portion of the site where tidal elevations are believed to be most suitable for eelgrass growth. In September 2006, eelgrass was not observed in areas where it had been seen in July 2006; rather, it was sparsely distributed at the southern portion of the site, which fell within the planting perimeters.

Early findings show that stable intertidal sandflats can be created at the North Basin, but it is unclear if eelgrass can consistently colonize the pilot site. The pattern of presence, disappearance, and reemergence of eelgrass at the pilot site, confounded by regional variability, has made it difficult to evaluate the true potential of the site to sustain an eelgrass population over an extended period of time. The observation of eelgrass along the southern site boundary is encouraging, although it is not known whether colonization at this area of the pilot site resulted from seedling recruitment or vegetative re-growth such as that observed in the central portion of the site in July 2006.

According to Caltrans, it could take up to two years for large-scale sites to adequately support eelgrass; secondly, a very poor site generally does not sustain persistent reemergence once eelgrass is lost. The pilot restoration study is important for understanding eelgrass restoration and particularly to support a larger restoration program comprised of eelgrass and sandflats at the North Basin. Caltrans has stated that, “[w]hile the year long monitoring effort provided valuable insights, [we] propose an additional year of scaled-down monitoring to provide further information regarding prediction of long-trend changes, suitability conditions and potential design requirements for a larger restoration effort. This information is necessary to determine whether the larger restoration effort should proceed in the future.”

Further, the revised monitoring effort will include the following elements: (a) an exploration of site deformation and potential littoral movement by monitoring the existing three perpendicular transects and adding transects that are parallel to the shore to detect any lateral site migration; (b) the measurement of depositional sediment depths along the transects to better understand the gains and losses of the fine sediments and the accretion/erosion rates in order to predict long-term changes at the site based on short-term erosion and accretion patterns; and (c) the completion of an additional pilot eelgrass transplant at the site. Generally, the revised monitoring plan will be performed at low tides and provide qualitative assessments rather than quantitative distribution monitoring, and focus on persistence, vegetative re-growth, seedling recruitment, and distribution across the

site, while the monitoring results will provide additional information regarding site suitability conditions and potential design requirements for a larger restoration effort. Pilot project monitoring will occur through the summer of 2008, pursuant to the revised Special Condition II.F.10.b of this amended permit. The revision of the time requirements contained in Special Condition II.F.10.b does not result in a material amendment to the originally authorized project contained in this amended authorization, consistent with Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the Bay Plan for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10711 (Amendment No. Seventeen).

The activities authorized in Amendment No. Twelve do not constitute a material alteration of the originally authorized project pursuant to Commission Regulation Section 10800 and is consistent with Government Code Sections 66600 through 66661 and the San Francisco Bay Plan for which the Executive Director may issue an amendment to a permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~K.~~ 8. **Amendment No. Thirteen.** Amendment No. Thirteen to the amended permit involved extending the commencement date from July 1, 2005 to July 1, 2006, to begin removal of buildings and hazardous materials on Skaggs Island, an element of the required offsite mitigation program required by Special Condition II-F-10. Under this special condition, Caltrans was required to create a mitigation fund and deposit funds in the amount of $10.5 million, of which up to $8 million of the fund is required to be made available to the Skaggs Island structure and hazardous materials removal project to mitigate for the project's adverse impacts and unavoidable loss of habitat. Caltrans stated that compliance with the deadline contained in the authorization had not occurred due to delays associated with the transfer of the land from the U.S. Navy to the U.S. Fish and Wildlife Service. This was the second time Caltrans had received an extension to the commencement date contained in Special Condition II-F-10. Extending the commencement date contained in Special Condition II-F-10 of this amended authorization did not constitute a material alteration of the originally authorized project pursuant to Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the San Francisco Bay Plan for which the Executive Director may issue an amendment to a permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~L.~~ 9. **Amendment No. Fourteen**. Amendment No. Fourteen authorizes the placement of an additional approximately 1.27 acres (55,320 square feet) of temporary falsework within the 100-foot shoreline band, along the east side of Yerba Buena Island. The falsework is necessary to complete construction of the YBI Transition Structures and the self-anchored suspension span (SAS). Additionally, Amendment No. Fourteen corrects a typographical error to the herring dredging window required in Special Condition II-D-4. Specifically, the window has been corrected so that it extends to March 31 rather than March 3. As such, the placement of an

additional approximately 1.27 acres of temporary falsework involves the placement of minor amounts of inert, inorganic material within the 100-foot shoreline band that will not have an impact on present or future public access to the Bay or Bay resources consistent with Regulation Section 10601(b)(1) and is thus considered a "minor repair or improvement" for which the Executive Director may issue an amendment to an existing permit, pursuant to Government Code Section 66632(f) and Regulation Section 110622(a).

~~M.~~ 10. **Amendment Nos. Fifteen and Amendment Eighteen.** Amendment No. Fifteen modifies the amended permit as follows: (1) it authorizes a one-month extension, to August 1, 2006, to commence the removal of hazardous materials and buildings on Skaggs Island (Special Condition II-F-10); (2) on Yerba Buena Island (YBI), it authorizes the placement, use, maintenance and removal, upon the completion of the East Span, temporary facilities (e.g., lighting, generators, storage boxes, etc.) associated with construction of the East Span; (3) it adds Special Condition II-W regarding the relocation of the U.S. Navy electrical cable (authorized under Amendment No. Two to Consistency Determination No. 4-89) and the installation of a new utility vault and the removal of an existing utility vault, both on the Oakland Mole; and (4) it authorizes the construction of post-construction stormwater treatment measures within the 100-foot shoreline band and the Bay. Each of these activities is discussed in more detail below.

~~1.~~ a. **Skaggs Island Time Extension.** Amendment No. Fifteen authorizes a one and half month extension to the permittee's requirement regarding hazardous materials and buildings removal on Skaggs Island. Due to unforeseen delays associated with transferring the Skaggs Island property from the U. S. Navy to the U. S. Fish and Wildlife Service, the permittee had previously requested a total of three time extensions to the time requirements associated with the permittee's requirements for habitat mitigation contained in Special Condition II-F-10. An agreement apparently had been reached between the Navy and the U.S. Fish and Wildlife Service regarding the transfer and clean-up of the property. This agreement resulted in additional changes to Special Condition II-F-10 contained in this amended authorization; these changes necessitated a public hearing and vote before the Commission on June 15, 2006. To ensure that adequate time was available to bring the additional changes to the Commission, to process the changes to the amended permit that resulted from the Commission's proceedings on the item and ensure that the permittee remains in compliance with Special Condition II-F-10, the permittee was granted an additional one-and a-half months, to August 1, 2006, to the time requirements contained in the special condition. The extension of the time requirements contained in Special Condition II-F-10 does not result in a material alteration to the originally authorized project contained in this amended authorization, consistent with Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the San

Francisco Bay Plan for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~2.~~ b. **Temporary Facilities Associated with Construction on YBI.** Amendment No. Fifteen authorizes the placement, use, maintenance and removal of equipment (e.g., lighting, generators, etc.) on YBI that is needed for construction activities. All equipment will be removed from the Commission's jurisdiction following completion of construction activities for the East Span Replacement Project. As such, the temporary placement of construction equipment within the Commission's 100-foot shoreline band involves the placements of small amounts of inert, inorganic material that will not have an effect on present or future maximum feasible public access to the Bay or Bay resources, consistent with Regulation Section 10601(b)(1), and is considered a "minor repair or improvement" for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~3.~~ c. **Relocation of the U.S. Navy Cable and Associated Utility Vaults.** Due to the location of the Oakland Touchdown Structure, an existing U.S. Navy electrical cable that runs from the Oakland Mole, beneath the Bay to Treasure Island will need to be relocated as part of the East Span Replacement Project. Since the cable is owned by the U.S. Navy and will be located outside of Caltran's existing and new right-of-way for the bridge span, the work associated with relocation of the electrical cable was authorized under an amendment to an existing consistency determination (CN 4-89) that was issued to the U.S. Navy for the installation of the original cable. Installation of the cable involves the demolition of an existing and a new below-ground utility vault at the Oakland Mole. To ensure that the existing utility vault is removed and the new vault is constructed in a manner that will not impact future public access on the Oakland Mole ("Gateway Park"), Special Condition II-X has been included in this authorization. The inclusion of Special Condition II-X does not result in a material alteration to the originally authorized project contained in this amended authorization, consistent with Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the San Francisco Bay Plan for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 666329f) and Regulation Section 10622(a).

~~4.~~ d. **Post-Construction Stormwater Treatment Measures.** Amendment No. Fifteen also authorizes the installation of post-construction stormwater treatment measures. Portions of stormwater treatment facilities will be located in a wildlife priority land use area and within areas outside the wildlife priority land use area that were required by the Commission to mitigate impacts to the wildlife priority land use area associated with BCDC Permit No. 1993.011.00. When the Commission originally authorized and required the post-construction stormwater treatment measures as part of the San Francisco-Oakland Bay

Bridge (SFOBB) East Span Seismic Safety Project, the permittee only had a conceptual plan that identified the general locations and types of associated improvements with the stormwater treatment project. Since that time, the permittee has completed the design of the improvements and has more accurately identified the extent of the project scope that will be located in the Commission's Bay and shoreline band jurisdictions, as well as those elements of the project that will be located in the wildlife priority land use area and the Cypress Mitigation Area.

The Emeryville Crescent is designated in Resolution 16 and shown in the *San Francisco Bay Plan* (Bay Plan Map No. 4) as a wildlife priority land use area. The findings of BCDC Permit No. 1993.011.00, which authorized the I-80 Westbound Operational Improvements and the Westbound High Occupancy Vehicle Lane (HOVL) Flyover, state that the Emeryville Crescent has significant aquatic and wildlife values. The findings also state that the area is ecologically important for a number of wildlife species. Of particular importance are the limited upland areas because of their important habitat functions including: (1) refugia for birds and mammals during periods of high water; (2) buffering against human encroachment and disturbance; and (3) good nesting habitat for some wildlife species that utilize both upland and wetland habitats (Bodega Bay Institute 1978, Jones and Stokes et al. 1979).

In approving BCDC Permit No. 1993.011.00, the Commission found that portions of the existing I-80 westbound travel lanes located adjacent to the Emeryville Crescent between Powell Street and the West Grand Avenue overcrossing, and areas within the 100-foot shoreline band, were part of the Emeryville-Oakland wildlife refuge priority land use area. The Commission also found that in approving Resolution No. 16, it established the inland boundaries of all priority land use areas as the upland areas between the Bay shoreline and the 100-foot shoreline band, unless otherwise specified, including the Emeryville-Oakland wildlife refuge priority land use area. However, the Commission did not determine on a site specific basis whether the 100-foot-shoreline band area was an appropriate or desirable boundary given pre-existing land uses, but uniformly established the inland boundary to be coterminous with the Commission's permit jurisdiction. The Commission also found that because the freeway uses pre-date the Commission's jurisdiction and the wildlife priority land use designation, and that these uses co-existed with the wildlife uses along the Emeryville Crescent, that the 100-foot-shoreline band was not an appropriate inland designation for the Emeryville-Oakland wildlife priority land use area, and that the inland boundary should be established consistent with pre-existing and proposed freeway uses. Although the Commission recognized that the inland boundary of the wildlife priority land use area designated in Resolution No. 16 is not appropriate given the pre-existing freeway uses, the Commission recognized the significance of the wildlife priority land use areas that are already not improved with freeway uses.

Because there is such limited upland within areas of the site designated as a wildlife priority land use area, and because the upland areas are bounded by freeways and roadways, the Commission found that there is no feasible alternative for creating new upland within the wildlife priority land use area, except by placing additional fill within wetland habitat and the Bay. This would be in direct conflict with the legislative intent of Section 66602 of the McAteer-Petris Act, which directs the Commission to establish and preserve water-oriented priority land uses to minimize and prevent future filling of the Bay.

Special Condition II-E-1 of BCDC Permit No. 1993.011.00 required Caltrans to permanently restrict the area between the freeway improvements and its right-of-way, leasehold or ownership as open space to remain in its natural state. This land area is required to provide habitat values equal to or greater than the upland areas lost as a result of the HOV lane and overpass structure, and the upland areas must be contiguous with or within the existing wildlife priority land use area boundaries.

The Commission noted that it does not generally authorize uses within priority use areas that are inconsistent with the designated priority use. However, in the case of the HOVL flyover, the roadway use existed when the wildlife priority land use area was first created and has remained in existence at this site since that time. The Commission found that the changes authorized by the Commission to the existing freeway use within the priority land use area can be accommodated provided that the net wildlife habitat benefits afforded by the project area are greater than any detriment accruing from the project.

In this case, the post-construction stormwater treatment measures, while part of the highway system, would provide a significant environmental benefit to the Emeryville Crescent by collecting and treating stormwater runoff from an approximately 143.3-acre area. Importantly, this includes the impervious surfaces of portions of I-80 and the Bay Bridge Toll Plaza. Currently, stormwater from these areas is discharged directly into the Bay along the Crescent with no treatment.

The stormwater treatment measures that will be installed as part of Amendment No. Fifteen include a collection system, bioretention systems (which promote contaminant removal by filtration through vegetation and soil media, as well as adsorption with biological processes) and detention basins (designed to remove sediments by gravity settling). The collection system will be installed along the perimeter of the Emeryville Crescent adjacent to the existing highway. Once stormwater is collected through drop inlets, it will be conveyed to holding areas via pumps, treated and then discharged. The majority of the stormwater conveyance system will be installed below grade by trenching and pipe jacking resulting in temporary disturbances to native upland habitat. In addition, there will be a total of four pump stations, electrical

cabinets and associated maintenance vehicle pullout areas throughout the entire length of the Stormwater Project. Two of these will be located in the wildlife priority land use area.

The stormwater project will result in a total of approximately 7,178 square feet (0.16 acre) of permanent improvements (stormwater pipes, pumps, etc.,) and approxi-mately 119,354 square feet (2.74 acre) of temporary improvements in the Bay (a tidal marsh) and within the shoreline band (for temporary vehicular barriers, wildlife exclusion fences, vehicular access, etc.) Of this, there will be a total of 1,742 square feet (0.04 acre) of permanent improvements and approximately 10,018 square feet (0.23 acre) of temporary improvements in the Bay (a tidal marsh). Amendment No. Fifteen authorized approximately 8,276 (0.19 acre) and Amendment No. Eighteen authorizes approximately 1,742 square feet (0.04 acre) of Bay impacts. A total of 3,897 square feet of upland habitat located within the wildlife priority use area will be permanently impacted, and approximately 91,912 square feet (2.11 acre) of upland habitat transition habitat located within the priority use area will be temporarily impacted. (Amendment No. Fifteen authorizes 0.62 acre of these impacts and Amendment No. Eight authorizes an addition 1.49 acres of shoreline band impacts after-the-fact.) The stormwater project will also permanently impact 1,539 square feet (0.04 acre) and temporarily impact approximately 17,424 square feet (0.40 acre) of mitigation area located outside the wildlife priority land use area but that was required as mitigation under BCDC Permit No. 1993.011.00. (Amendment No. Fifteen authorizes 0.07 acre of these impacts and Amendment No. Eighteen authorizes an additional 0.33 acres after-the-fact.) In addition, the stormwater treatment project will temporarily impact approximately 131 square feet (0.003 acre) of upland transition habitat outside the wildlife priority use area and the area required for mitigation under BCDC Permit No. 1993.011.00 (Amendment No. Eighteen).

As is similar to subsequent amendments to the originally authorized project that resulted in additional fill in the Bay not contemplated in the earlier stages of the project, the permittee will not mitigate the temporary and permanent fill impacts that will result from Amendment No. Fifteen. While mitigation for the project was intended to offset those project impacts identified at the time Caltrans received approval of the original project; to date, the Commission believes that the additional impacts have been fully mitigated by the project's original mitigation program. However, should a project change lead to significant additional impacts, or if the Commission determines that the cumulative effect of a number of small project changes has exceeded the impacts that the Commission determined were fully mitigated in the original authorization, then the Commission may require additional mitigation.

To offset the permanent impacts to the wildlife priority land use area, and areas outside the wildlife priority land use area that were required for mitigation under BCDC Permit No. 1993.011.00, Special Condition II-W has been included in this authorization. Under this special condition, the permittee is required to

mitigate the permanent loss of upland habitat at a 3:1 ratio. Compensation will be provided in the form of an in-lieu fee in the amount of $75,807. In addition, temporary impacts to the wildlife priority-use area will be mitigated by restoring the area to pre-project conditions and the permittee is also required to provide an in-lieu fee in the amount of $893,813. (Amendment No. Fifteen required $109,900 for 0.69 acres of temporary impacts; Amendment No. Eighteen requires an additional $783,913 to offset 1.86 acres of additional impacts.)

The total $969,619 in-lieu fee may be used by the East Bay Regional Park District, the California Department of Parks and Recreation or the California State Coastal Conservancy to improve upland habitat in the Eastshore State Park, preferably along the Emeryville Crescent, as determined by or on behalf of the Commission.

Amendment No. Eighteen modifies Amendment No. Fifteen by authorizing the 1.86 acres of additional temporary impacts, after-the-fact. The permittee began construction of the stormwater project in May 2006. In January of 2007, staff determined that the ESA (environmentally sensitive area) fencing had been installed in a location bayward of the alignment approved in Amendment No. Fifteen, pursuant to the reference in Condition II-W-2 to “Attachment E, ESA, Mouse and Goose Fence Map, SFOBB Stormwater Project”, submitted April 19, 2006. The as-built location of the ESA fence and the total area of additional impacts was re-mapped by the permittee and submitted with Amendment No. Eighteen as Attachment A, on September 6, 2007. The amendment request, with its supplemental information, dated October 4, 2007, and October 10, 2007, proposes an upgrading of the requirements for restoring the construction site to its pre-project condition. This includes the requirement to prune Cypress trees that were damaged by construction activities, the standards for replanting, and the success criteria that will be used for monitoring. Amendment No. Eighteen includes the approval of the permittee’s planting plan, submitted as Attachment D to the request, that will ensure that the restoration is consistent with the habitat improvements of the Cypress Mitigation, as required by BCDC Permit No. 1993.011.00.

To compensate for the temporal loss of an additional 1.86 acres of habitat, the permittee will pay an additional mitigation that is based on a formula closer to the one used for permanent impacts than that used for temporary impacts. The new formula uses a restoration rate of $140,057 per acre and a 3:1 mitigation ratio. Thus, $783,913 will be paid to compensate for the loss of the 1.86 acres. This formula was negotiated in May, 2007 for the Cypress Mitigation “failed areas”, which remain a part of the wildlife priority land use area but are unsuitable for high quality wildlife habitat. The “failed areas” mitigation fee was approved by BCDC Permit No. 1993.011.00, Amendment No. Six.

This mitigation rate is appropriate because the permittee's construction activities removed a significant portion of the wildlife refugia and buffer area vegetation that was improved by the Cypress Mitigation in 1999, and which only recently had reached maturity. To compensate for this loss during the period of years in which the vegetation recovers, it is reasonable that the permittee fund a significant amount of habitat improvement projects in the vicinity of the Emeryville Crescent. East Bay Regional Park District staff compared cost estimates from their current project at Eastshore State Park and determined that the $140,057 per acre rate is accurate. The permittee believes that the compensation is appropriate.

Thus, the permittee will pay a total in-lieu fee of $893,813 for the total 2.55 acres of temporary impacts. Combined with the $75,807 fee for permanent impacts, the permittee will pay $969,619 for habitat improvements at Eastshore State Park, and provide the funds to the Commission or to the Coastal Conservancy within one year of the issuance of Amendment No. Eighteen.

As such, Amendment No. Fifteen and Amendment No. Eighteen authorize the placement of additional improvements for water conveyance structures, maintenance vehicle pullouts, pump stations and electrical facilities that involve the placement of minor amounts of inert, inorganic material within the 100-foot shoreline band that will not have an impact on present or future public access to the Bay or Bay resources or a priority use area, consistent with Regulation 10601(b)(1), and is thus considered a "minor repair or improvement" for which the Executive Director may issue an amendment to an existing permit, pursuant to Government Code Section 66632(f) and Regulation Section 10711. Additionally, Amendment No. Fifteen authorizes the placement of approximately 1,742 square feet (0.04 acre) of additional permanent Bay fill for existing and new outfall pipes and bypass structures that involve the placement of outfall pipes approved by the Regional Water Quality Control Board consistent with Regulation Section 10601(a)(4) and is thus considered a "minor repair or improvement" for which the Executive Director may issue an amendment to an existing permit, pursuant to Government Code Section 66632(f) and Regulation Section 10711.

~~N.~~ 11. **Material Amendment No. Sixteen.** In part, the Bay Plan policies on mitigation state that mitigation for the unavoidable adverse environmental impacts of any Bay fill should be considered by the Commission in determining whether the public benefits of a fill project outweigh the public detriment from the loss of water areas due to the fill. Whenever mitigation is necessary, the mitigation program should assure: (a) that the benefits from the mitigation will be commensurate with the adverse impacts on Bay resources and consist of providing area and enhancement resulting in characteristics and values similar to the characters and values adversely affected; (b) that the mitigation will be at the project site or as close as possible; (c) that the mitigation measures will be carefully planned, reviewed and approved by or on behalf of the Commission, and subject to reasonable controls to ensure

success, permanence and long-term maintenance; and (d) that the mitigation will, to the extent possible, be provided concurrently with those parts of the project causing adverse impacts.

In authorizing the original project, the Commission found that the various mitigation measures proposed by Caltrans will offset the impacts to approximately 8.59 acres of shallow water habitat, including eelgrass and sandflats. Of the several mitigation measures, the off-site mitigation consist of Caltrans contributing a total of $10.5 million towards restoration at Skaggs Island and the restoration of several potential sites in the Eastshore State Park.

While Caltrans had tried diligently to comply with its obligations under Special Condition II-F-10, unforeseen delays regarding the transfer of Skaggs Island from the U.S. Navy to the U.S. Fish and Wildlife Service led Caltrans to request and subsequently receive a total of three time extensions to the July 1, 2004 deadline for commencement of removal of the structures and hazardous materials that was contained in the original authorization for the project. The amended permit herein authorizes a fourth time extension, to August 1, 2007, to commence removal of structures and hazardous materials on Skaggs Island.

To resolve the impasse between the Navy and the U.S. Fish and Wildlife Service, the California Wildlife Conservation Board has been negotiating to obtain the property from the Navy. However, prior to the State's acceptance of the property, any contamination must be cleaned up pursuant to the specifications of the California Department of Toxic Substances Control. Thus, the BCDC permit condition contained in the original authorization (Special Condition II-F-10) was modified to allow the use of the $6 million in mitigation funds by the Navy for clean up on the Island. To ensure that the site will be ultimately transferred to the State, Special Condition II-F-10 contains language that requires that signed transfer documents to the State from the Navy for the property be placed in escrow prior to the Navy's receipt of the $6 million in mitigation funds.

Special Condition II-F-10 was also modified such that $6 million of the $8 million in mitigation funds will be used for structure and hazardous material removal on Skaggs Island and $2 million will be set aside for the long-term restoration and management of the Island. With these modifications all of the $8 million required in the original authorization would go towards Skaggs Island, rather than any remaining funds of the initial $8 million allocation going toward habitat restoration at Eastshore State Park. While the $8 million allocation will entirely go towards the cleanup and restoration of Skaggs Island, the condition still requires that $2.5 million be used for habitat restoration at Eastshore State Park. A portion of this $2.5 million allocation has been used to create a pilot eelgrass restoration project at the North Basin, a site located within the Eastshore State Park in the City of Berkeley. If the deadline for commencement and completion of work at Skaggs Island are not met, the permit still requires the funds to be returned and used for other habitat restoration in the Central Bay.

Special Condition II-F-10 requires the Commission to consult with the California Department of Fish and Game (CDFG), the State Water Resources Control Board (RWQCB), the U.S. Army Corps of Engineers (Corps), the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration, Fisheries Division (NOAA Fisheries) regarding disbursement of the mitigation funds. On May 25, 2006, the staff transmitted a letter to these agencies requesting advice regarding the proposed changes to BCDC Permit No. 8-01. At the time the staff recommendation was prepared, the staff had received advice from the CDFG, the EPA and the NOAA Fisheries. All of these agencies expressed support for the modifications to Special Condition II-F-10 contained herein.

The Commission finds that the modifications to the language contained in Special Condition II-F-10 would be consistent with the Bay Plan policies on mitigation because the modifications will allow for additional time to clean-up the site and allow for the transfer of the property from the Navy to the Sate and ultimately the USFWS which are all necessary steps for the eventual restoration of the site to tidal action.

~~O.~~ 12. **Amendment No. Seventeen.** As described in Section III-B of this amended permit, Amendment No. Seventeen is granted to Caltrans to allow it to commence the removal and clean-up activities at Skaggs Island by August 1, 2008, pursuant to revised Special Condition II.F.10. The extension of the time requirements contained in Special Condition II.F.10 does not result in a material amendment to the originally authorized project contained in this amended authorization, consistent with Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the Bay Plan for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~P.~~ 13. **Amendment No. Twenty.** Amendment No. Twenty authorizes Caltrans to install a coffercell system in-lieu of two previously authorized cofferdams at temporary towers “C” on the east side of Yerba Buena Island to facilitate the construction of temporary falsework-towers, which will support the construction of the permanent bridge structure and provide construction access to Pile Caps C1, C2, C3, and C4. The coffercell system, however, is preferred over the cofferdams because of the close proximity of the work to a designated Environmentally Sensitive Area (ESA) and the Torpedo Building (Building 262), which is a historic building. Conducting construction activities within this small access area is difficult. The permittee contends and the Commission concurs that the coffercell is a more environmentally sensitive solution and is preferable to the pile driving activities associated with cofferdams, the noise impacts of which could potentially threaten aquatic species.

A coffercell system consists of two types of rock (Caltrans Lite Class rock and 3” -6” crush rock) and gravel in bags (coffercells). Armored rock will be placed on units below Mean High Water. The remainder of the rock approximately 7,793 square feet will be above the Mean High Water line. Existing riprap along the shoreline of

Yerba Buena Island will be removed prior to the coffercell system installation. The temporary coffercell system will remain in place approximately four months and be removed and the shoreline area returned to its existing conditions no later than November 30, 2008.

Authorization Section I-A-2a(5) of this amended permit authorized 12,072 cubic yards of temporary submerged fill to install two cofferdams. Constructing a coffercell system in place of cofferdams reduces the amount of volumetric Bay fill from 12,072 to 4,512 cubic yards. The coffercell system also reduces noise levels that could potentially impact Bay habitat, fish and wildlife that are associated with driving the pilings for the cofferdam alternative. However, this change also increases the total area of fill footprint by 0.49 acres over the amount authorized in previous amendments (Amendment Nos. Six, Eight, and Eleven).

This amount exceeds the 10,000 square feet of fill that the Executive Director can administratively authorized under Regulation Section 10601(a)(1)(B). However, the fill is not permanent fill but will only be in place for four months to facilitate construction of a temporary tower to support falsework for constructing the new east span of the Bay Bridge. This fill will be fully removed after this four month period, and the permittee contends this will be less disruptive to Bay fish and wildlife habitat than the sound pressure levels generated by driving the piles associated with the cofferdam construction previously authorized, and is necessary to avoid impacting both an environmentally sensitive area and a historic building. For these reasons, the project involves a similar activity, as defined by Regulation Section 10601e(3) with no greater adverse impact on the Bay than placing protective works covering 10,000 square feet of Bay, as defined by Commission Regulation Section 10601(a)(1)(B) and, thus is a “minor repair or improvement” for which the Executive Director may issue (1) a permit, pursuant to Government Code Section 66632 (f) and Regulation Section 10622(a), and (2) an amendment to a permit, pursuant to Regulation Section 10822.

~~Q.~~ 14. **Amendment No. Twenty-One.** The transfer of Skaggs Island from the Navy to USFWS has been delayed several times and the Commission and staff have issued time extensions to Caltrans to accommodate these delays. Congresswoman Lynn Woolsey facilitated discussions between the USFWS and the Navy that resulted in agreement between the parties to a Memorandum of Understanding (MOU). Congresswoman Woolsey subsequently introduced legislation (HR 5658) on April 17, 2008, which passed the House on May 22, 2008, and was at this time in the Senate, and would require the Secretary of the Navy and the Secretary of the Interior to negotiate a MOU that stipulates conditions of the transfer of Skaggs Island to the USFWS for inclusion in the National Wildlife Refuge System. This bill would also authorize the Navy to accept donations, including contributions from the State of California and other entities, to cover the costs of demolishing and removing structure on the property and to facilitate future environmental restoration of Skaggs Island. Caltrans stated that these recent developments moved the parties closer to the goals described by the requirements of the amended permit.

This amendment grants Caltrans a time extension request of two years to August 1, 2010, for commencing the building demolition and two years to July 1, 2012, for beginning wetland restoration activities. As described in Section III-B of this amended permit, Amendment No. Twenty-One is granted to Caltrans to allow it to commence the removal and clean-up activities at Skaggs Island by August 1, 2010, pursuant to revised Special Condition II-F-10. The extension of the time requirements contained in Special Condition II.F.10 does not result in a material amendment to the originally authorized project contained in this amended authorization, consistent with Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 66661 and the Bay Plan for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~R.~~ 15. **Amendment No. Twenty-Two.** Construction of the SFOBB East Span Project requires the construction and use of a temporary double-deck bypass structure at YBI, the so-called the South-South Detour (SSD) bypass. The SSD bypass structure will connect to the existing East Span at the existing E-1 bridge pier on the east side of YBI. The bypass structure would be used to divert traffic off a section of the existing East span between E-1 and the YBI tunnel. To complete construction of the new SFOBB East Span and tie into the YBI tunnel, the portion of the existing East Span between Pier E-1 and the YBI tunnel will need to be dismantled. The section of the SSD bypass structure bridge decks that will connect into the existing East Span at E-1 is referred to as the East Tie-in. The East Tie-In bridge decks will be fabricated on-site and supported by two temporary towers on the southside of the existing East Span on YBI. The connection of the East Tie-In to the existing East Span will utilize a Roll-Out/Roll-In concept. A section of the existing East span bridge decks east of Pier E-1 will be disconnected from the existing bridge and rolled-out along a temporary skid rail structure to temporary towers on the north-side of the existing East Span. The new temporary East Tie-In bridge decks will then be rolled-in along the skid rail structure. The Roll-Out/Roll-In operation is tentatively scheduled to take place during the Labor Day 2009 weekend during traffic closures of the existing SFOBB.

Amendment No. Twenty-Two authorizes Caltrans to construct a temporary crane runway platform on the southeast side of Yerba Buena Island north of Coast Guard Cove. The platform will support two large cranes and a temporary tower skid rail structure required to construct the East Tie-In bridge decks and to perform the Roll Out/Roll-In operation. Approximately 16,445 square feet and all of the piles, a total of 110 piles, will be located within the 100-foot shoreline band. Although eelgrass beds were identified in October 1999, 2003, 2004 and 2005 surveys to occur naturally in the waters adjacent to the proposed construction area at Coast Guard Cove, the nearest eelgrass is located approximately 65.6 feet south of the west end of the crane runway platform. The project footprint is outside of the eelgrass beds; all construction and work shall be land-based, occur above mean high tide level and be conducted at low tide. There shall be no docking or marine access. Filter fabric shall be installed under crane pads and shall overlap as necessary to cover the

entire crane runway platform surface. A 12-foot oil pan shall be suspended under the crane to provide secondary containment. The crane runway platform and access ramps shall be completely removed out of the shoreline band by April 30, 2010.

The construction and operation of the crane runway platform are unlikely to adversely affect eelgrass beds and the Bay in general. The work authorized under Amendment No. Twenty-Two, involves the placement of inert, inorganic materials within the 100-foot shoreline band with no effect on present or future maximum feasible public access to the Bay or Bay resources, as defined by Regulation Section 10601(b)(1). Further, these activities, as conditioned by Special Condition II-H of this amended permit and the modifications made as a result of the crane runway platform do not constitute a material alteration of the original project authorized herein for which the Executive Director may issue an amendment to an existing permit pursuant to Regulation Section 10822 and Government Code Section 66632(f).

~~S.~~ 16. **Amendment No. Twenty-Four.** To minimize potential entrance of Canadian geese onto the I-80 roadway adjacent to the Emeryville Crescent, the permittee will temporarily install 2,800 feet of three-foot-high polyvinyl fence at the edge of the roadway. The fence is being authorized for a three-year trial period, in which time the permittee will collect data about the fence's performance with regard to effectiveness, necessity, durability, maintenance, and visual impacts.

The permittee's biological consultant has stated that the location and the height of the exclusion fence will minimize the accurance of geese and goslings entering lanes of traffic, as has occurred in the past. The alignment of the fence will be generally along the toll plaza approach (the southern boundary of the Oakland-Emeryville Wildlife Priority Land Use Area. It will be installed approximately three feet from the paved shoulder of the roadway, but at several points it will be six feet from the pavement. Because the fence is located within this unpaved strip next to the freeway that functions as a crash-recovery zone, the fencing will be made of flexible materials that rebound if struck by vehicles. Frequent repairs of the fence, however, may still be necessary to maintain both its appearance and function. Therefore, Special Condition II-Z-3 requires the permittee to restore the original condition of the fence within 30 days of notification by staff. In the permittee's email of December 16, 2008, Caltrans agreed to the three-year trial period not only to evaluate whether the fence keeps wildlife off the freeway, but also to evaluate the effectiveness of the fence design for safety and maintenance considerations that would make this design alternative unacceptable and infeasible.

The permittee believes that the materials and transparency of the fence will minimize visual impacts. Although staff agrees that the fencing is generally transparent, it has pointed out that the fence's location makes it subject to the requirements of BCDC Permit No. 1993.011.00 for preserving visual access to the Bay. Special Condition II-D of Permit No. 1993.011.00 requires that any proposed fencing or other barriers along this section of the freeway, which is identified as a

scenic roadway in Bay Plan Map 4, must be reviewed by the Design Review Board and approved only if it minimizes view impacts and is consistent with the Commission's policies. Therefore, Amendment No. Twenty-Four specifies that authorization of any permanent fence at this location shall be based on: (1) data collected during the three-year trial period; (2) evidence that it is necessary and can achieve the stated purpose; (3) a determination that the fence does not create any visual blight due to maintenance problems; and (4) the Design Review Board's concurrence that the fence is consistent with the requirements and findings of Permit No. 1993.011.00.

This amendment to the permit, authorizing the installation of a temporary, wildlife exclusion fence in the SFOBB toll plaza approach, is issued pursuant to Regulation Section 10820 upon the same criteria provided for the issuance of administrative permits. It involves placement of small amounts of inert fill in the shoreline band that does not have a significant adverse effect on present or possible future maximum feasible public access to the Bay consistent with the project, on present or possible future use for a designated priority water-related use, and on the environment, and is a minor improvement for which the Executive Director may issue an amendment to a permit pursuant to Regulation Section 10601(b)(1) and Government Code Section 66632(f).

~~T.~~ 17. **Amendment No. Twenty-Five.** Amendment No. Twenty-Five authorizes the construction of a temporary access trestle that will be located at the eastern end of Yerba Buena Island to connect the island to the main tower of the SAS (Self-Anchored Suspension Span) Tower 1 (T1). The temporary trestle will provide pedestrian, vehicle and equipment access between Yerba Buena Island and T1 during construction activities. The trestle is critical for construction of the T1 Tower because it will not only provide for construction access to the tower, but will also provide for emergency response and evacuation access. Currently, the only access to the T1 foundation is via ladders on the side of the foundation. As the work at the tower is considered to be occurring in a "confined space", there is an increase incidence of safety risk. The trestle will assist emergency personnel in responding to and evacuating the T1 construction area should an emergency occur. Additionally, the trestle will allow for grouting activities to occur from the trestle, rather than from barges on the Bay, minimizing the risk of accidental discharge of grout into the Bay. The temporary access trestle will result in the temporary placement of a total of 84.78 square feet of solid fill due to the placement of piles and 12,436.58 square feet (0.28 acre) of pile-supported fill from the trestle and metal footbridge. The trestle will not be a permanent structure and will be removed at the completion of the SAS contract or by 2019, whichever is earlier. Additionally, the trestle may be used during demolition and removal of the original east span.

Construction of the trestle will not result in impacts to eelgrass. The closest documented eelgrass beds are approximately 492 feet to the southwest of the eelgrass beds at Coast Guard Cove and approximately 820 feet to the west of the eelgrass bed at Clipper Cove. The construction activities associated with the trestle are far enough from the beds, so that impacts are not anticipated.

The majority of the fill placed as a result of the trestle will be pile-supported and, although will be in place for up to 9 years, is considered temporary. Additionally, several components that were to be constructed as part of the overall span replacement project and were to result in impacts to the Bay and Bay resources have either not been constructed or have been dismantled ahead of schedule. Thus the overall mitigation plan that was developed for the entire span replacement project will adequately mitigate the temporary impacts associated with the trestle authorized under Amendment No. Twenty-Five. For these reasons mitigation for the fill associated with construction of the trestle is not required at this time.

The installation and temporary use of the trestle authorized under Amendment No. Twenty-Five does not constitute a material alteration of the originally authorized project, pursuant to Commission Regulation Section 10800 and is consistent with Government Code Section 66600 through 6661 because the trestle will result in a small fraction of the amount of temporary pile-supported fill that was originally authorized in the permit and is one of many trestles that is necessary to construct the project. The size of the trestle is the minimum necessary to safely and effectively accommodate personnel during installation of the SAS Tower. There is no alternative upland location for the trestle as it is necessary to safely construct the new bridge and bridges are a designated water-oriented use in the San Francisco Bay Plan. Lastly, the trestle is necessary to construct the T1 Tower, one of the remaining components of the Bay Bridge Replacement Project. With completion of the T1 Tower, the new span will be closer to being opened and thus demolition of the old span can commence which will result in the uncovering of 12.5 areas of Bay fill. As such, the installation of the trestle is not a material alteration of the originally authorized project for which the Executive Director may issue a permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

Several conditions have been included in this amended authorization to ensure that the project is constructed in a manner that is consistent with the San Francisco Bay Plan and the McAteer-Petris Act. Special Conditions II-AA-1 through II-AA-4 pertain to minimizing impacts associated with pile driving. Construction of the trestle requires the installation of 22, 36-inch-in-diameter pilings. To minimize impacts to aquatic species associated with sound pressure levels from pile driving, Special Condition II-AA-1 requires the use of a bubble curtain during the driving of the 18 pilings that are located in the Bay. The remaining 4 pilings are located close to the shore and will be driven during low tide thus it is anticipated that sound pressure levels will be so low that a bubble curtain is not necessary. Additionally, Special Condition II-AA-2 restricts pile driving to June 1 through November 30 of any given year, Special Condition II-AA-3 restricts pile driving to day light hours and Special Condition II-AA-4 requires that aquatic and biological monitoring occur during pile driving activities. It is believed that all of these conditions will minimize impacts to aquatic species during pile driving, consist with the Bay Plan policies of Fish, Wildlife and Other Aquatic Species. Finally, authorization of Amendment No. Twenty-Five requires that before commencing construction of the temporary access trestle,

Caltrans must provide an Incidental Take Permit (ITP) from the California Department of Fish and Game and incorporate any required mitigation measures in that ITP into construction practices for the temporary trestle installation.

~~U.~~ 18. **Amendment No. Twenty-Six.** In accordance with Special Condition II-F-10-b, Caltrans embarked on a pilot eelgrass habitat creation study at the North Basin site, located within the Eastshore State Park, in the City of Berkeley (authorized under Amendment Nos. Twelve and Seventeen). While the pilot study yielded considerable insights into the design and construction requirements for eelgrass restoration, eelgrass establishment at the pilot site was intermittent, creating uncertainty as to the appropriateness of the North Basin site for a full-scale restoration project. Thus, it was determined through an interagency and stakeholder process that using the remaining funds to build the full-scale restoration project at the site was not the best use of the remaining funds set aside for eelgrass restoration. In addition, because the remaining potential eelgrass restoration sites within the Eastshore State Park were even less ideal for restoration than the North Basin site, it was determined that the most appropriate use of the funds would be to transfer the remaining $1.5 million to NMFS to be used for a Bay-wide comprehensive eelgrass restoration project, with an emphasis on restoration within the East Bay. Thus, Special Condition II-F-10-b has been revised to require Caltrans to transfer all remaining funds to NMFS to be used on the comprehensive restoration project. In addition, the Special Condition has been revised to ensure that NMFS and BCDC have an appropriate framework and mechanism for determining where and how the funds will be used. The revisions to Special Condition II-F-10-b do not result in a material alteration of the originally authorized project for which the Executive Director may issue an amendment to a permit pursuant to Regulation Section 10622(a) and Government Code Section 66632(f).

~~V.~~ 19. **Amendment Nos. Twenty-Seven and Twenty-Eight.** Amendment No. Twenty-Seven authorizes an extension of time, until August 31, 2015, to guarantee the public access improvements required in Special Condition II-B-2. Caltrans continues to prepare, solicit public and agency input on and plan for the final design of the public access improvements required in the amended permit consisting of an approximately 4.5-acre Gateway Park parcel including a temporary parking lot and a public access path that will connect land access to access on the new bridge span as well as a public path terminus and connector at Yerba Buena Island. This process, as well as delays in the construction and opening of the new bridge span, is taking longer than originally expected and thus, an extension to the time requirement contained in Special Condition II-B-2 is necessary. Additionally, Amendment No. Twenty-Seven authorizes the construction of a bus turn-around at the Gateway Park site. The bus turn-around is needed to prevent traffic congestion on Burma Road and will provide buses with an adequate turning radius once they have entered Burma Road. Approximately 3,668 square feet of the bus turn around will be constructed within the Commission's 100-foot shoreline band and will improve public access at the site by preventing traffic back-ups on Burma Road leading to the site. The project authorized under Amendment No. Twenty-Seven, therefore

would involve the placement of small amounts of inert, inorganic material with no effect on present or future maximum feasible public access to the Bay or Bay resources, as defined in Regulation Section 10601(b)(1) and thus is a "minor repair or improvement", for which the Executive Director may issue an amendment to a permit, pursuant to Government Code Section 66632(f) and Regulation Section 10822.

Amendment No. Twenty-Eight extends the date contained in Special Condition II-H pertaining to the removal of a temporary crane platform that was needed to support two large cranes used during construction of the East Tie-In bridge decks, and the temporary tower skid rail structure, and to perform the Labor-Day weekend 2009 Roll-Out/Roll-In operation. Originally, the amended permit required the crane platform to be removed by April 30, 2010. However, the platform was needed to dismantle the temporary tower skid rail structure that was used during the Roll-Out/Roll-In operation. Caltrans anticipates that dismantling of the skid rail and the platform will occur by July 31, 2010, thus the time frame contained in Special Condition H has been extended to reflect the additional time needed to remove the platform. As such, the project authorized under Amendment No. Twenty-Eight will not result in a material alteration of the originally authorized project, consistent with Regulation Section 10800, for which the Executive Director may issue an amendment to a permit consistent with Regulation Section 10822 and Government Code Section 66632(f).

~~W.~~ 20. **Amendment No. Twenty-Nine.** Amendment No. Twenty-Nine authorizes the paving and use of a portion of Burma Road and the temporary installation of a chain link fence. The paving and fence installation are necessary to accelerate construction of the Oakland Touchdown Detour (OTD) that will allow for the simultaneous opening of the new east- and west-bound SFOBB bridges. While work directly associated with the OTD detour is located outside of the Commission's jurisdiction, construction of the detour will temporarily eliminate access along a portion of an existing access road. Construction of the improvements authorized under Amendment No. Twenty-Nine will allow Caltrans, construction personnel, as well as third parties with facilities near the western end of the maintenance road continued access to their respective projects and facilities while the detour is in place. The project involves that placement and extraction inert, inorganic material with no effect on present or future maximum feasible public access and Bay resources, consistent with Regulation Section 10601(b)(1) and is thus considered a "minor repair or improvement" for which the Executive Director may issue an amendment to a permit consistent with Regulation Section 10800 and Government Code Section 66632(f).

~~X.~~ 21. **Amendment No. Thirty.** Amendment No. Thirty modifies the public access design at the Oakland Touchdown by: (1) increasing the size of the interim public access parking lot within the Gateway Park parcel from 0.37 acres to 0.86 acres and adding sidewalks, landscaping, and a vehicle turn-around; (2) increasing from 0.25 acres to 0.30 acres the improvements required by Special Condition II.B.4.a that connect the bridge trail to the parking lot; (3) removing the maintenance road crosswalk;

(4) reducing the area of the bridge connector trail to 0.166 acres; (5) adding a 0.134-acre, chevron-shaped public access landing that includes seating and landscaping; and (6) adding Special Conditions II.B.4.a.(3) and II.B.4.a.(4) requiring the permittee to control and limit vehicle uses of the maintenance road and, if vehicle traffic impacts to public access are identified in the future, requiring the permittee to modify the signaling, signage, or design of the interface.

The connector trail at the Oakland Touchdown links the bicycle/pedestrian path on the new East Span with the parking lot at Gateway Park and with the permittee's trail heading toward Emeryville (see BCDC Permit No. 1993.011.00). Caltrans decided to replace a portion of the 15.5-foot-wide connector trail and the maintenance road crosswalk with a 0.134-acre (5,387-square-foot) elevated landing to enhance the enjoyment of cyclists and pedestrians and to improve safety at this intersection. Compared with the previously required connector path and crosswalk, the chevron-shaped landing provides a large open area for public access users to pause at the touchdown or freely move between the parking lot, the bridge, and the trail to Emeryville. The landing will be constructed with colorized concrete and elevated approximately six inches above the maintenance road to create a high-visibility intersection for vehicles, which must yield to public access users at all times before ~~crossing. Cyclists and pedestrians on the bridge trail will be directed toward the trail~~ extension leading to Emeryville by the landing's staging and seating area on the north side and by a three-foot-wide buffer area on the south side, which will be surfaced with high-visibility yellow "truncated domes."

Amendment No. Thirty increases the public access benefits of the project by authorizing enhancements of the public access parking lot, replacing a portion of the connector trail at the Oakland Touchdown with a public access landing, and adding special conditions to improve safety at these locations. These changes will result in a project that continues to provide the maximum feasible public access consistent with the project and will not materially alter the project authorized by the permit. Thus, they are similar to a minor repair or improvement for which the Executive Director may issue an amendment to a permit, pursuant to Government Code Section 66632(f) and Regulation Sections 10822 and 10601(e)(3).

~~Y.~~ 22. **Amendment No. Thirty-One.** Amendment No. Thirty-One modifies the terms of Special Condition II-F-10-b as approved in Amendment No. Twenty-Six, which required all funds remaining in the shallow water habitat mitigation at Eastshore State Park ($1.5 million plus all interest) to be used for a Bay-wide comprehensive eelgrass restoration program implemented by the U.S. Department of Commerce, National Marine Fisheries Service (NMFS). Amendment No. Twenty-Six required that, prior to Caltrans transfer of the funds, a memorandum of agreement (MOA) be executed by BCDC and NMFS to create a framework for approval, by or on behalf of the Commission, of expenditures under the eelgrass program, with consultation from relevant resource agencies and stakeholders.

Amendment No. Thirty-One authorizes a 15-month time-extension, until June 1, 2013, for the permittee to transfer all of the funds remaining in the mitigation account to NMFS. As of April 30, 2012, the remaining fund and total accrued interest is approximately $1,898,500. Amendment No. Thirty-One also removes the requirement for an MOA, and in its place approves the May 31, 2012 draft Cooperative Agreement No. 4-2304 between Caltrans and NMFS, which provides the terms for the permittee's transfer of the funds and outlines anticipated NMFS uses of the mitigation funds. In Section I.6 of the agreement document, NMFS agrees to use all of the State's funds only for those qualified activities that will satisfy Special Condition II-F-10-b of BCDC Permit No. 2001.008 as amended. As specified, these revisions to Special Condition II-F-10-b do not result in a material alteration of the originally authorized project for which the Executive Director may issue an amendment to a permit pursuant to Regulation Section 10622(a) and Government Code Section 66632(f).

~~7.~~ 23. **Amendment No. Thirty-Two.** The amended permit authorizes and requires the permittee to remove the existing East Span as part of the San Francisco-Oakland Bay Bridge Seismic Safety Project (SFOBB Project). When the new bridge was originally authorized, the permittee envisioned removing the East Span by dredging a temporary barge channel and deploying machinery via barge to dismantle the bridge and collect demolition debris, and using other methods of dismantling the superstructure from above. Although, the permittee anticipated constructing temporary trestles and falsework, the original permit did not authorize the placement of such temporary fill for the demolition work. The permittee has since refined the approach for dismantling the bridge and determined that it may be infeasible to demolish the bridge solely using barges, and that temporary trestles and falsework will likely be needed to demolish the bridge and contain demolition debris. Material Amendment No. Thirty-Two authorizes construction of two temporary trestles south of and parallel to the existing East Span, one extending from the southeast shoreline at YBI and one extending from the City of Oakland shoreline, and installation of temporary support piles for falsework, barge mooring, access, and other dismantling activities. This demolition approach will likely involve constructing the YBI trestle and a combination of the temporary barge channel authorized in the original permit and a smaller section of the Oakland trestle authorized in Amendment No. Thirty-Two.

~~1.~~ a. **Temporary Bay Fill.** The Commission may allow fill only when it meets certain fill requirements identified in Section 66605 of the McAteer-Petris Act, which states, in part, that: (a) fill "should be limited to water-oriented uses (such as bridges)" or for "minor fill for improving shoreline appearance and public access"; (b) fill in the Bay should be approved only when "no alternative upland location" is available; (c) fill should be "the minimum amount necessary to achieve the purpose of the fill"; (d) "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…"; and (e) "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.~~ (1) **Water-Oriented Use.** All of the Bay fill will be temporary and for the purpose of aiding the permittee in safely and efficiently removing the East Span and, therefore, is fill for a water-oriented-use.

~~b.~~ (2) **Alternative Upland Location.** All fill in the Bay is for removing an existing bridge between YBI and the City of Oakland shorelines and, thus, there is no alternative upland location for the project.

~~c.~~ (3) **Minimum Amount Necessary.** The permittee determined that it may be infeasible to remove the East Span solely through the use of barges (as originally envisioned) since they may not provide sufficient stability and necessitate more dredging, which could lead to increased impacts to marine organisms. Dismantling the East Span will be logistically complex. Therefore, the permittee calculated the minimum fill needed for trestles if it is determined that removing the bridge using barges is not the most cost effective, efficient, or safe method of dismantling. In addition, the temporary trestles and support piles will be staged and not all of the piles that may be needed will be in the Bay at the same time. Further, all fill will be removed upon project completion and the project will not result in any increase in Bay fill. Therefore, the temporary fill is the minimum amount necessary.

~~d.~~ (4) **Effects on Bay Resources.** Because, the fill is pile-supported and temporary, it will not have permanent adverse impacts on Bay surface area or circulation, although there may be temporary adverse impacts. For this reason, the temporary trestles and support piles will be constructed in a manner that minimizes adverse impacts to fish and other aquatic life (See the finding below on Water Quality, and Fish, Other Aquatic Organisms, and Wildlife).

~~e.~~ (5) **Valid Title.** The temporary fill will be placed on lands owned by the State Lands Commission, The City and County of San Francisco, and The City of Oakland, Alameda County, however, Caltrans has a permanent easement for the right-of-way on which the SFOBB is located.

The Commission finds the project, as conditioned, is consistent with its law and policies regarding Bay fill.

~~2.~~ b. **Natural Resources Policies**

~~a.~~ (1) **Fish, Other Aquatic Organisms and Wildlife.** The Bay Plan policies on fish, other aquatic organisms and wildlife state, in part, that "the Commission should consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service or the NOAA National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species…and give

appropriate consideration of (their) recommendations in order to avoid possible adverse impacts of a proposed project on fish, other aquatic organisms and wildlife habitat."

The permittee will possibly need to conduct a significant amount of pile-driving in the Bay to construct the temporary trestles and support piles. While the final number of piles to be installed has not been determined, under the "worse case" scenario the permittee will install up to 2,450, twenty-four-inch-in-diameter piles and/or 1,560 thirty-six-inch-in-diameter piles. Pile-driving can affect listed and special status fish species by generating sound pressure waves and noise. In addition, the project may cause localized increases in turbidity during pile removal and in cutting piles below the mudline.

The total number of piles authorized herein is 2,450. However, this is a "worse case" estimate, and fewer piles are expected to be installed. In addition, a combination of the two sizes of piles authorized in Amendment No. Thirty-Two will be installed. If larger diameter piles are used, a significantly fewer number of total piles will be installed.

When the SFOBB Project was originally authorized in 2001, NOAA National Marine Fisheries Service (NMFS) issued a Biological Opinion for the entire project on October 30, 2001 and found that the project was not likely to jeopardize the continued existence of listed anadromous salmonids or result in the destruction or adverse modification of designated critical habitat. The U.S. Fish and Wildlife Service (USFWS) issued a biological opinion on October 29, 2001, for potential impacts to the California least tern and California brown pelicans, and an amended opinion on March 10, 2005, for potential impacts to salt marsh harvest mice, California clapper rail, and California brown pelicans. Lastly, the California Department of Fish and Game (CDFG) issued an Incidental Take Permit (ITP) on November 26, 2001, and an amended ITP on October 14, 2009.

The permittee worked closely with the resource agencies to develop mitigation measures to ensure that the demolition of the East Span of the Bay Bridge will minimize potential adverse impacts to fish and other aquatic organisms. Measures include: limiting the size of piles and duration of impact pile driving to the greatest extent feasible; installing pipe piles with a vibratory hammer to the greatest extent possible; limiting pile-driving with an impact hammer (with the exception of pile proofing) to the period between June 1 and November 30 to avoid the peak migration period for salmonids and spawning adult green sturgeon; using a marine pile driving energy attenuator (e.g., bubble curtain) during impact pile-driving to minimize the effects of sound on fish; and developing a plan (to be approved by NMFS and the RWQCB prior to project construction) to ensure that sound levels from pile-driving will not exceed levels that are harmful to fish as identified by the Fisheries Hydroacoustic Working Group (FHWG).

When a pile is installed with a vibratory hammer, it needs to have a final proofing with an impact hammer, which involves hitting the pile with a limited number of blows with an impact hammer to test integrity and to seat the pile. The proofing episodes last for less than a minute but, nonetheless, have greater sound impacts than a vibratory hammer. The permittee stated that it is too costly and logistically difficult to deploy a sound attenuator system for every pile that needs proofing. Consequently, the permittee worked with NMFS to develop several mitigation measures to address the potential impacts of proofing while still enabling the project to be completed, including: allowing proofing without an attenuator system on a percentage of the total piles; limiting the number of piles that are proofed each day to no more than two; and limiting the total number of pile-driver blows associated with the proofing to no more than twenty blows per pile per day. Special Conditions II-BB(2) and II-BB(3) incorporate these measures to ensure that the pile-driving activities will not adversely impact fish.

Eelgrass beds have been documented within the SFOBB Project area in Clipper Cove and Coast Guard Cove at YBI, and north of the Oakland touchdown. These areas are considered special aquatic habitats, which are known to expand and contract over time. As a part of the SFOBB Project, surveys of eelgrass within the project area were performed in 1999, 2000, 2001, 2002, 2003, 2004, 2005 and 2007, and documented no eelgrass directly in the areas where the YBI and Oakland Trestles and Oakland shoreline falsework will be constructed. Based on this information, the permittee does not anticipate that installation of the temporary fill in the vicinity of YBI or the Oakland touchdown will have impacts on eelgrass. The permittee will perform annual eelgrass surveys within the project area to further ensure that no adverse impacts occur. In addition, the permittee will monitor turbidity levels when working within 3,200 feet of an eelgrass bed or sandflat to ensure that levels do not exceed 50 Nephelometric Turbidity Units (NTU's), a sufficient increase in turbidity that could impact the habitat. Special Condition II-BB(5) is included to incorporate these measures designed to prevent adverse impacts to nearby eelgrass beds.

NMFS completed a Draft Biological Opinion (BO) to address potential impacts of the dismantling activities, and concluded that the above-mentioned mitigation measures should be sufficient to reduce project impacts on listed salmonids and green sturgeon. NMFS' final BO is expected to be issued by March 1, 2012 and could include additional mitigation measures.

Commission staff consulted with the CDFG. Although, the CDFG has yet to issue its amended Incidental Take Permit (ITP) for the East Span demolition project, it has informed the Commission staff that the types of activities proposed for this project are generally similar to those described in the original ITP, and that the permittee and CDFG are updating mitigation measures (for the amended ITP) to address CDFG's concerns. The amended

ITP will be issued prior to project commencement. Special Condition II-BB(4) ensures that project commencement is contingent upon the permittee's submittal of the final ITP to the Commission staff.

The permittee will not re-initiate consultation with the U.S. Fish and Wildlife Service since the project will not have the potential to adversely affect listed species or habitat under the USFWS's jurisdiction. The permittee communicated its findings to the USFWS, and the USFWS did not indicate that further consultation is necessary. Special Condition II-BB ensures that the permittee: obtain a final approved BO from NMFS and final ITP from DFG prior to commencing work; implement required final mitigation measures to ensure that the project will not adversely impact fish or other aquatic species; and return to the Commission to amend this authorization if final actions of the resource agencies result in changes to the amended authorization or special conditions.

As part of the original authorization for the construction of the new East Span of the Bay Bridge, the permittee established a $15.5 million mitigation program for incidental take and impacts to protected species and habitats. As construction proceeded, the permittee modified its construction activities to reduce the amount of dredging and impacts to sensitive habitats, such as eelgrass and sand flats. The SFOBB Project was expected to impact 3.6 acres of eelgrass and 5.0 acres of sand flat habitats. However, actual impacts to sensitive habitats were reduced and are expected to total approximately 1.5 acres to eelgrass and 3.0 acres to sand flats at project completion. The permittee also reduced the amount of dredged material removed by approximately 30% percent of the projected volume. The permittee has also not dredged the temporary barge access channel near the Oakland Touchdown, authorized by the original permit, which would have directly impacted eelgrass. Thus, the mitigation program included herein carried out by the permittee anticipated impacts far in excess of those that actually occurred.

The Commission finds the project, as conditioned, is consistent with its law and policies regarding Bay fill.

~~3.~~ c. **Water Quality Policies.** The Bay Plan policies on water quality state, in part, that "Bay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality." The policies also state that "[w]ater 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 San Francisco Bay Regional Water Quality Control Board's (RWQCB) Basin Plan 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 Regional Board should be the basis for carrying out the Commission's water quality responsibilities."

The permittee anticipates the East Span dismantling activities will have minimal water quality impacts. A Final Environmental Impact Statement (FEIS), issued in 2001 for the entire SFOBB Project, evaluated potential impacts to water quality from the installation of temporary piles and trestles for both construction and dismantling activities. The permittee also prepared a technical memorandum on water quality as part of its reevaluation of the FEIS under the National Environmental Protection Act (NEPA). This document provides an update to the FEIS and identifies several possible impacts to water quality from the project. Major water quality concerns associated with removing the superstructure arise if any of the superstructure were to fall into the Bay (such as steel, rebar, concrete, etc.), if paint associated with the bridge or its deck were to come into contact with the water (historically, the bridge was painted with paints containing heavy metals, e.g., lead and part of the bridge deck is composed of reinforced concrete cement, which could impact the pH of water. Petroleum hydrocarbons can also be bound in asphalt or trapped in recesses of the bridge structure, which could be released during dismantling). In terms of in-water work, the removal and/or cutting below the mudline of temporary piles may result in localized increases in turbidity.

The Regional Water Quality Control Board (RWQCB) issued a Water Quality Certification and Order for the entire SFOBB Project on October 17, 2001 and a follow-up order containing Waste Discharge Requirements (WDR) on Jan 3, 2002. Both authorizations evaluated potential effects from pile-driving associated with permanent and temporary fill (permanent bridge footings, temporary coffer dams, construction trestles and supports) associated with the construction of the new East Span. The RWQCB determined that the dismantling of the East Span could also be authorized under existing orders (R2-2002-0011 and 01-120). In addition, to ensure that the project will not impact water quality, the permittee is required to submit a Stormwater Pollution Prevention Plan (SWPPP), turbidity control plan, and fisheries and hydroacoustic monitoring plans, per the requirements of RWQCB Orders prior to commencing any pile-driving activities. These plans will outline the methods used to address the potential impacts described above. In addition, the permittee is working with the RWQCB to ensure that final Best Management Practices (BMPs) required by RWQCB Order 01-120 contain appropriate minimization and avoidance measures for water quality impacts associated with the dismantling of the East Span. Such BMPs include: Using screens, netting, tarps, and other catchment systems to contain and prevent dismantling debris from falling into the Bay; using containerized mechanical grinders when removing paint or asphalt to contain contaminants; removing larger sections of a bridge at a time to minimize impacts to water quality; using specific types of clean-up equipment (such as vacuums or manual cleaning) for collection of

loose debris; and performing turbidity monitoring. A final list of BMPs will be prepared and be submitted to the RWQCB for its approval and to the Commission prior to commencement of the dismantling work. Special Condition II-CC requires that the final BMPs required by the RWQCB be incorporated into the permittee's demolition work and into this amended authorization, if necessary, to protect water quality.

The Commission finds the project, as conditioned, is consistent with its law and policies regarding Bay fill.

~~AA.~~ 24. **Amendment No. Thirty-Three.** Amendment No. Thirty-Three authorizes the following: (1) improvements at the U.S. Coast Guard Base consisting of installing a portion of a basketball/volleyball court fencing, pathways and lighting, and repaving a parking lot.

In addition, to the improvements authorized by Amendment No. Thirty-three, an approximately 8,450-square-foot public access/bike path will be constructed that will connect the YBI Connector and Terminus with a future public access project (the City of San Francisco's "Ramps Project" BCDC Consistency Determination No. C2012.002.00). While this public access path is located outside of the Commission's jurisdiction, it is a critical and necessary public access connection that will safely lead users from the bike/pedestrian path on the new Bay Bridge Span to Yerba Buena Island and future development on Treasure Island. While Caltrans is not required to construct this public access connection under the original authorization, Caltrans is building the connection as an added benefit to the over 4.5 acres of public access provided with the new San Francisco/Oakland Bay Bridge replacement span project.

The staff determined that the activities authorized under Amendment No. Thirty-Three involve the placement of small amounts of inert, inorganic material with no effect on present or future maximum feasible public access to the Bay or Bay resources, as defined by Regulation Section 10601(b)(1), for which the Executive Director may issue an amendment to an existing permit, pursuant to Regulation Section 10810 and Government Code Section 66632(f).

~~BB.~~ 25. **Amendment No. Thirty-Four.** Amendment No. Thirty-Four authorizes the installation of 36, 14-inch-in-diameter H-piles in the Bay and 12, 14-inch-in-diameter H-pilings within the 100-foot shoreline band associated with the demolition of the existing East Span structure, in particular to facilitate the dismantling of the west end of the cantilever. The permittee has been in contact with NOAA Fisheries regarding potential impacts associated with the pile driving authorized under Amendment No. Thirty-Four. NOAA has communicated to the permittee that it believes that the additional piling work is consistent with the approvals that have already been issued for the dismantling of the East Span structure, thus further consultation and/or amendment of their existing approvals was deemed not required. The permittee has also contacted the CDFW regarding potential impacts associated with the additional pile driving. CDFW communicated to the permittee that the piling work is proposed outside of the work window for

spawning Pacific herring and a waiver to work outside of the window is required. On January 21, 2014, the CDFW issued a waiver for the work stating that due to "time constraints and public safety issues" a waiver to work outside of the window was granted and requires that all pile-driving work associated with Amendment No. 34 be completed by midnight, February 17, 2014. The waiver requires that a trained biologist be present during all pile-driving activities and that specific measures be employed if spawning herring are detected during pile driving activities. As such, the activities authorized under Amendment No. Thirty-Four are similar in nature and effect on the Bay as defined under Regulation Section 10601(e)(3) as routine repair, replacement or maintenance that does not involve a substantial enlargement or change in use as defined under Regulation Section 10601(a)(6) and the placement of minor amounts of inert, inorganic fill that will have no effect on present or future maximum feasible public access to the Bay or Bay resources, consistent with Regulation Section 10601(b)(1), and are thus considered "minor repairs or improvements" for which the Executive Director may issue an amendment to an existing permit consistent with Regulation Section 10810 and Government Code Section 66632(f).

~~CC.~~ 26. **Amendment No. Thirty-Five.** Amendment No. Thirty-Five authorizes the placement of 899 square feet of shotcrete in the location of the A1 and B1 tower foundations that were used to support Falsework Temporary Towers A and B that were used to construct the Self-Anchored Suspension Span. Foundations A1 and B1 are located near the base of a slope with a steep grade (approximately 56 degrees) that consists of rock. To maintain the stability of the slope, the foundations and associated structural components (e.g., micropiles, shotcrete walls, pile capes, etc.) will remain in place and covered with a sculpted and stained shotcrete that will be constructed to simulate surrounding rock surfaces. As such, the work authorized under Amendment No. Thirty-Five consists of the placement of small amounts of inert, inorganic fill that will have no effect on present or future maximum feasible public access to the Bay or Bay resources, consistent with Regulation Section 10601(b)(1) for which the Executive Director may issue an amendment to an existing permit pursuant to Regulation Section 10810 and Government Code Section 66632(f).

~~DD.~~ 27. **Amendment No. Thirty-Seven.** The project authorized under Amendment No. Thirty-Seven involves the following: (1) retaining a 10-square-foot section of the temporary construction access trestle in the Bay at the eastern end of YBI through the duration of the dismantling phase of the project and adding two timber mats and associated plywood covering 565 square feet of the Bay that will prevent construction debris from entering the Bay during dismantling activities; (2) retaining a 314-square-foot abutment and ramp (associated with the temporary construction access trestle) within the 100-foot shoreline band through the duration of dismantling; (3) deleting previous authorization to place 100 H-piles to construct a trestle to assist dismantling activities; and (4) authorizing 100-H piles to be used to construct falsework to support the west-end of the cantilever during dismantling activities. The remaining construction access trestle at the eastern end of YBI,

timber mats and associated plywood will be in place through the duration of dismantling the former east span of the Bay Bridge but will be removed from the Bay upon completion of these activities, anticipated to be complete by the end of 2019.

As such the activities authorized under Amendment No Thirty-Seven consist of routine repairs, reconstruction, replacement, removal and maintenance that do not involve a substantial enlargement or change in use of improvements in the Bay, as defined in Regulation Section 10601(a)(6) and alterations that do not result in a material alteration of the originally authorized project, consistent with Regulation Section 10800 for which the Executive Director may issue an amendment to an existing permit pursuant to Government Code Section 66632(f) and Regulation Section 10622(a).

~~EE.~~ 28. **Amendment No. Thirty-Nine.** Amendment No. Thirty-Nine authorizes the placement of approximately 5,600 cubic yards of debris from the demolition of the Pier E3 pier cap inside the Pier E3 caisson. It is expected that the demolition debris will fall deep below the mud line (-175 feet), will be completely contained within the interior of the caisson, and will cover approximately 3,345 square feet of the Bay bottom within the caisson. While the placement of the debris is considered “fill in the Bay” under the Commission’s laws and regulations, because the fill will be contained within the caisson, the fill will not displace Bay volume nor will it cover additional Bay area. In addition, impacts to Bay resources are not anticipated as a result of the placement of the pile cap debris within the caisson because the area within the caisson is not connected to Bay waters. Demolition of the decommissioned SFOBB span is a requirement of the original BCDC authorization contained herein and has long been considered a critical component of the “SFOBB Replacement Span” project. Because the debris associated with the pier cap will be inert consisting of concrete and associated rubble, the placement of the debris is similar in nature and effect on the Bay, as defined by Regulation Section 10601(e)(3), to the installation of new protective works that cover less than 10,000 square feet of area and constitute the minimum amount necessary to stabilize existing banks or provide improved fish or wildlife habitat, as defined by Regulation Section 10601(a)(2) and to the placement of utility cables underneath the Bay, pursuant to Regulation Section 10601(a)(5). Thus, the project authorized under Amendment No. Thirty-Nine is considered a “minor repair or improvement” for which the Executive Director may issue an amendment to an existing permit, pursuant to Regulation Section 10822 and Government Code Section 66632(f).

29. **Material Amendment No. Thirty-Eight.** Amendment No. Thirty-Eight authorizes the use of controlled explosives to demolish one of the marine foundations (the largest of them) of the original east span of the Bay Bridge. It is anticipated that the resulting debris will fall into the open cellular chambers of the pier foundation below the Bay's mudline.

    a. **Fill**. The demolition debris resulting from the implosion will be considered fill once the walls of Pier E3 are gone. The Commission may allow fill when it meets the requirements identified in Section 66605 of the McAteer-Petris Act, which provide, in part, that: (a) fill "should be limited to water-oriented uses;" (b) fill in the Bay should be approved only when "no alternative upland location" is available; (c) fill should be "the minimum amount necessary to achieve the purpose of the fill"; (d) "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…"; (e) "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 (f) "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."

    The Bay Plan Map 4 designates the SFOBB as a scenic drive. Removing the former east span would improve views from the new east span, whose low railing and lack of overhead structures have been designed to promote views of the Bay.

    Questions about the project's consistency with the fill requirements of the McAteer-Petris Act revolve around the placement of rubble from the former Pier E3 into the interior of the former pier. Because the pier was constructed 30 years prior to the Commission's creation, Pier E3 currently is considered to be within the 100-foot shoreline band even though it is located in the middle of the Bay. However, in the seconds following the implosion, the area now occupied by the pier will become part of the Bay, and rubble-filled. The implosion has been designed so that the demolished rubble from former Pier E3 will fall into the cellular voids of the former pier. Charges will also be placed in the pier's walls 20 feet below the mudline so that as much as 20 feet of the pier below the Bay bottom will also fall within the pier's voids to a depth 175 feet below the Bay bottom. But it is likely that not all the rubble will fall into the voids. Caltrans will use barge-mounted cranes to remove this concrete debris, sort it, and place it back into the pier's voids. Because the former pier will be in the Commission's Bay jurisdiction after the implosion, the Commission must be able to find that disposing of the fill within the former chambers of the pier is a water-oriented use.

Water-Oriented Use and Upland Alternative. Section 66605 of the McAteer-Petris Act identifies "bridges" as a water-oriented use. While Pier E3 provided critical support for the former bridge, with the opening of the new bridge, the former bridge became surplus. The Commission must determine whether disposing of demolition debris from the former bridge in the Bay is consistent with the Commission's fill policies.

In the original BCDC Permit to Caltrans for constructing the new east span of the Bay Bridge, the permit authorized the removal of "... the former SFOBB East Span to approximately minus 1.5 feet below the existing mud line and dispose or recycle the bridge debris at an approved location outside the Commission's jurisdiction…." [Authorization Section I.A.5]. The permit also required the removal of "…all pilings, support piers and footings to at least 1.5 feet below the existing mudline. Prior to removal of the existing East Span, the permittee shall prepare and submit a removal plan to be approved by or on behalf of the Commission to ensure that the removal plan does not adversely impact Bay-related resources, endangered species, navigation and public health and safety and that sufficient safeguards are included to protect human safety and capture all demolition debris and related substances."

The placement of demolition debris "that is determined to be inert, non-hazardous, and not-toxic may be deposited within the footings of the existing bridge up to but no higher than an elevation of minus 10-feet below the pre-construction mudline elevation with express written approval by or on behalf of the Commission…" was required in BCDC Permit No. 2001.008, Special Condition II-V. The result of the implosion and subsequent rubble management will mean that the removal of Pier 3 will comply with this condition – that is, that the pier will be removed to at least five feet below the mudline. While the Commission has urged that wherever possible, former structures in the Bay be fully removed when no longer in use, in practice, those portions of abandoned structures lying 1.5 feet to 3.0 feet below the mudline are abandoned in place. Full removal of such structures is not always possible because the structures may break during removal, because the environmental disturbance (e.g., resuspending contaminants, increased turbidity, impacts to benthic communities, etc.,) resulting from fully removing structures from the Bay may be significant, and because of the high cost of full removal. As a result, the Commission has typically required that structures be cut 1.5 feet to 3.0 feet below the mudline and therefore, remnants of former bridge piers, port piers, pipelines, utilities, etc. are found below the mudline throughout the Bay.

The Commission finds that the disposal of concrete rubble from the implosion within the cells of the former Pier E3 are consistent with the Commission's fill policies because the demolition debris originates from a former bridge, a water-oriented use, because the debris will be five below the mudline or lower so

unlikely to affect navigation, water movement, or benthic organisms that will reestablish once the depression of former Pier E3's footing fills with sediment, and because of near impossibility of safely fully removing a large, concrete structure that extends 165 feet below the mudline.

b. **Bay Biological Resources and Mitigation**. In addition to the provisions of Section 66605 of the McAteer-Petris Act regarding fill effects on resources, the Bay Plan contains the following relevant policies:

Fish, Other Aquatic Organisms, and Wildlife Policy 2, states, in part: "...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, in part: "[t]he Commission should: (a) consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened… species….; [and] (c) give appropriate consideration to the recommendations of the [resource agencies] in order to avoid possible adverse effects of a proposed project on fish, other aquatic organisms and wildlife habitat."

Tidal Marshes and Tidal Flats Policy 1 states, in part: "…[f]illing, diking, and dredging projects that would substantially harm tidal marshes…should be allowed only for purposes that provide substantial public benefits and only if there is no feasible alternative." Policy 2 states: "[a]ny proposed fill, diking, or dredging project should be thoroughly evaluated to determine the effect of the project on tidal marshes and tidal flats, and designed to minimize, and if feasible, avoid any harmful effects." Further, the Bay Plan Subtidal Areas Policy 1 states, in part, projects in subtidal areas "should be designed to minimize and, if feasible, avoid any harmful effects" on Bay resources.

The Bay Plan's Subtidal Areas Policies 1 and 2 state: "[a]ny proposed filling or dredging project in a subtidal areas 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. Subtidal areas that are scarce in the Bay or have an abundance and diversity of fish, other aquatic organisms and wildlife (e.g., eelgrass beds, sandy deep water or underwater pinnacles) should be conserved. Filling, changes in use, and dredging projects in these areas should therefore be allowed only if: (a) there is no feasible alternative; and (b) the project provides substantial public benefits."

The Bay Plan Mitigation Policy 1 states, in part, that projects should avoid adverse environmental impacts and, if unavoidable, impacts minimized to the greatest extent practicable and, moreover, require measures to compensate for such impacts. Policy 2 states, in part: "…compensatory mitigation projects should be sited and designed…as close to the impact site as practicable…." The

Bay Plan Mitigation Policy 4 states, in part: "[t]he amount and type of compensatory mitigation should be determined…based on a clearly identified rationale that includes an analysis of: the probability of success of the mitigation project; the expected time delay between the impact and the functioning of the mitigation site; and the type and quality of the ecological functions of the proposed mitigation site as compared to the impacted site." Policy 6 states, in part, mitigation should occur "prior to, or concurrently with those parts of the project causing adverse impacts." Policy 7 states, in part, that the program should include goals, performance standards to evaluate success, and plans for site monitoring, adaptation, maintenance, and management.

Caltrans originally proposed to mechanically dismantle the marine foundations of the former east span. While precise details of the demolition were not developed, such demolition would likely involve the construction of coffer dams around piers so work could be performed in the dry, to isolate the foundations from Bay waters, and to prevent discharge of demolition rubble into the Bay. The installation of pilings to support coffer dams, the dewatering of the area enclosed by the coffer dams to allow work, and the length of time needed to mechanically demolish the piers would have significant environmental impacts. For example, installation of a coffer dam around Pier E3 was estimated to take 1,415 construction days (approximately 46 months). Although pile driving would follow the hydroacoustic regulations required of all pile-driving for SFOBB, the long time-period needed to install the cofferdam would increase the likelihood of unintended exposure to high noise levels and sound pressure waves. Caltrans believes that the short duration of the implosion blast, although creating a high density soundwave, will have less impact overall compared to a lengthy mechanical demolition. The California Department of Fish and Wildlife and the National Marine Fisheries Service have come to a similar conclusion.

It is difficult to determine the number and species of fish and wildlife that may be impacted by the implosion. Fish and wildlife can rapidly move though an area and it is not always possible to determine the abundance or types of animals that may be present in an area at any given time. According to Caltrans, animals immediately adjacent to the blast zone will be killed by the sound pressure waves and noise from the implosion. Animals farther away may experience permanent or temporary injury. Caltrans modeled expected sound pressure levels to be experienced in areas near the blast site, as attenuated with the bubble curtain. Caltrans estimates that the maximum total amount of temporarily affected marine habitat during the controlled implosion would be approximately 1,026 acres. Studies over the last several years have attempted to determine those sound pressure levels where injury or behavioral disturbance to animals may occur. Those studies inform the marine mammal exclusion zone where the blast will be postponed if marine mammals are detected within the zone and could suffer mortality or injury at that distance from the blast (approximately 1,160 feet from the blast site), the Level B Harassment Zone where marine mammals may experience temporary hearing

loss or “ringing in the ears” (between 1,160 feet and approximately 5,700 feet from the blast site), and the level B Harassment Zone where marine mammals may exhibit a behavioral response to the blast but are not otherwise injured (between 5,700 feet and approximately 9,700 feet from the blast site). Similar studies informed the herring exclusion zone (approximately 820 feet from Pier E3) where the blast will be delayed if herring are detected within that radius.

Caltrans determined that the best way to minimize impacts to fish and wildlife is to set the implosion to a time when the least amount of animals would be present in the project vicinity. November 7, 2015 has been selected as that time. None of the salmon runs (several endangered), herring, or nesting birds are typically in the area at that time. To further limit exposure of animals to the potential harmful effects of the blast, Caltrans will install a bubble curtain that will reduce blast wave pressures by an estimated 80%. In addition, monitors will be employed to observe the area with binoculars, and use hydrophones, fish finding equipment, and sonar technology to monitor fish assemblages, and to discourage the presence of animals within the blast area. The implosion will be delayed or postponed if marine mammals or bird species of concern (e.g., peregrine falcon, brown pelican, or least tern) are observed in areas where they could be harmed. The presence of human observers will also act to discourage some animals from entering the blast zone. Hazing and auditory deterrents may be used to encourage marine mammals and bird species of concern to avoid areas where they may be injured. In addition, a plan to rescue and rehabilitate any marine mammals injured by the blast is being developed with the National Marine Fisheries Service (NMFS) and will be submitted for review and approval by or on behalf of the Commission prior to the explosion.

With the avoidance and minimization measures described above, no marine mammals are expected to be injured, impacts to birds should be minimal, and most endangered species should be unaffected. However, there is limited experience with controlled implosion technology in marine environments so the actual extent of impacts cannot be known or precisely predicted. And one species of concern is likely to be in the area during the blast-the threatened longfin smelt.

In 2014, longfin smelt abundance was at its second lowest on record. The California Department of Fish and Wildlife (CDFW), concerned that the longfin smelt was at a critical point in its survival, required in its Incidental Take Permit a mitigation measure and a monitoring measure to protect and better understand the implosion’s impact on this species. Specifically, the take permit requires Caltrans to purchase four acres of mitigation credits for longfin smelt prior to beginning activities related to the implosion of Pier E3. CDFW’s requirement has been incorporated as a requirement of this authorization.

Caltrans will perform extensive monitoring of all fish and wildlife species prior to the implosion, to determine the presence of species, to guide deterrence efforts, and determine the exact time of the implosion. Such monitoring will include using fish finding equipment to detect the presence of large schools of fish such as Pacific herring staging in the project areas, and hydrophones to confirm the absence of marine mammal species prior to the implosion. Monitoring will continue immediately after the implosion to determine any effects from the blast. Bird predation monitoring (e.g., increased feeding activity by birds immediately after the explosion) will be used as an indicator of fish mortality and observers will monitor increased bird feeding after the implosion and collect any fish floating on the surface. A requirement of CDFW's Incidental Take Permit is that Caltrans will perform as many oblique and otter trawls as possible with three trawl boats in the hour following the implosion to assess potential project related mortality, and to perform necropsy on all covered species collected during the trawls to determine the cause of death.

The Commission finds that while there are some risks associated with using implosion as a way to remove a large marine pier that once supported the former east span of the SFOBB, the project has incorporated reasonable safeguards to minimize the adverse impacts of the blast to the extent practicable. Intensive monitoring following the blast should provide valuable information to help reduce the impacts of future use of explosives to remove other remaining marine piers of the former SFOBB, and to inform any future use of explosives in demolishing obsolete Bay structures. For these reasons, the Commission finds that as conditioned, the project is consistent with the Commission's policies protecting Bay resources.

c. **Water Quality.** The Bay Plan Water Quality Policy 2 states: "[w]ater 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 Regional Water Quality Control Board's Basin Plan. The policies, recommendations, decisions, advice and authority of the State Water Resources Control Board and the Regional Water Quality Control Board, should be the basis for carrying out the Commission's water quality responsibilities." Policy 3 states, in part: "[n]ew projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay…."

The implosion has three potential impacts on water quality-the release of contaminated water from the caissons of the Pier, increased turbidity as a result of the blast, and impacts on water quality from rubble management operations following the implosion.

Water within the caissons of Pier 3 will be released with the implosion. Caisson water has been sampled and indicated that, except for a small volume of water near the water line, caisson water quality is comparable to ambient Bay water and below regulatory trigger limits. Near the water surface, dissolved oxygen is depressed and in some cells, elevated levels of lead, zinc, and silver was

measured. Caltrans has already begun removing water that contains elevated levels of contaminants for treatment off site, or has treated it and released it back into the Bay after it met water quality requirements.

To minimize water quality impacts from the implosion, the controlled implosion is anticipated to occur during a peak high tide to ensure the largest water column within the bubble curtain. The lag time between the peak high tide and ebb current would create relatively still and quiescent conditions while the flood current reverses direction, allowing sediment to fall out of suspension thereby reducing sediment concentration and turbidity. Strong currents would limit the ability of the suspended sediment to move into nearby eelgrass beds. Still, a turbidity plume is expected to occur on either side of Pier E3 following the implosion, but it is expected to dissipate within two hours.

Following the implosion, water quality monitoring will be performed to detect and measure conductivity, temperature, pH, dissolved Oxygen, metals and other contaminants. Water quality monitoring will be continued during the rubble disposal period to assure that those activities don't adversely impact water quality.

On July 21, 2015, the San Francisco Bay Regional Water Quality Control Board (RWQCB) accepted the Stormwater Pollution Prevention Plan to demolish Pier E3 by controlled implosion. That acceptance concluded that "…aside from minor, temporary impacts, the implosion demolition of Pier E3 will have acceptable impacts on water quality." Required monitoring shall test the conclusion that the blast should have minimal impacts to water quality.

For these reasons, the Commission finds that the proposed project is consistent with relevant Bay Plan policies on water quality.

~~FF.~~ E. **Review Boards.**

1. **Engineering Criteria Review Board.** The Engineering Criteria Review Board (ECRB) evaluated the engineering criteria for the original project on June 13, 2000 and concluded that Caltrans' design criteria for seismic safety were adequate. The ECRB did not review the work associated with Material Amendment No. Thirty-Two, as the project authorized herein does not involve permanent Bay fill.

2. **Design Review Board.** The Commission's Design Review Board (Board) evaluated the project at its September 11, 2000 and November 6, 2000 meetings. The Board supported the bike trail and the belvederes, but felt there should be more belvederes than the six proposed, that seating should be provided at the belvederes, and that Caltrans should consider various alternatives to minimize potential conflicts between bicyclists and pedestrians on the bridge. The Board also requested more information to support Caltrans' contention that a lower railing (48 inches high instead of the proposed 55 inches) would be unsafe along the Bridge path, and that more transparent bridge railings along the roadway were infeasible. The Board requested that Caltrans develop more detailed information about how the bridge path would connect to paths in Oakland and Emeryville. The Board also

made a number of recommendations regarding the bridge appearance, recommending that Caltrans explore low cost means of making the bridge white and suggesting changes to the bridge lighting. The Board asked that the project come back to the Board so the Board could make a final recommendation. Caltrans made some modifications to the bridge in response to the Board's comments, but decided that many of the Board's comments would be too costly to implement within the budget. Thus, the project was never taken back to the Board and the Board has not reviewed the latest project revisions. The Board did not review the project associated with Material Amendment No. Thirty-Two because the project does not involve additional public access improvements.

~~GG.~~F. **Environmental Review.** According to Caltrans, pursuant to the California Streets and Highways Code Section 180.2 and the California Environmental Quality Act (CEQA) Section 21080, the East Bay Bridge replacement project is statutorily exempt from the requirement to prepare an environmental impact report. CEQA Section 21080, subdivision (b) sets forth the types of activities that are excluded from CEQA and paragraph (4) of this subdivision specifically includes actions necessary to prevent or mitigate an emergency. According to the California Streets and Highways Code, as amended, the structural modification of an existing highway structure or toll bridge (Section 180.2(a)); and the replacement of a highway structure or toll bridge within, or immediately adjacent to, an existing right-of-way (Section 180.2(b)) shall be considered to be activities under subdivision (b), paragraph (4) of CEQA. Caltrans has concluded that the East Bay Bridge Replacement Project meets the definition of Section 180.2(b)— that it is a "specific action necessary to prevent or mitigate an emergency"—and, therefore, does not require any environmental review under CEQA.

Nevertheless, pursuant to the National Environmental Protection Act and federal permitting requirements, Caltrans prepared an Environmental Impact Statement (EIS) for the project. The U. S. Department of Transportation, Federal Highway Administration, and Caltrans, in cooperation with the USCG, published the Final EIS in May 8, 2001, and the approved the Record of Decision on July 11, 2001. The Final EIS identified several project impacts including the displacement of residential units, the loss of wetlands, new Bay fill, noise, use of historic structures and visual effects. The EIS also imposed several mitigation measures including habitat creation, historic recordation, and aesthetic design of the new bridge and roadway structures.

The permittee is required under the Federal Highway Administration (FHWA) guidelines for the NEPA process to reevaluate its EIS and determine whether the revised dismantling approach and temporary fill associated with Material Amendment No. Thirty-Two could result in significant environmental impacts not evaluated in the original FEIS, and to evaluate the project authorized herein in Material Amendment No. 32 in light of any new regulatory requirements or special status or endangered species concerns. As part of its reevaluation process, the permittee prepared a number of technical memoranda on various subjects evaluated under NEPA, such as water quality and natural resources. These technical memoranda were provided to Commission staff in January 2012. Because the original FEIS evaluated potential impacts for pile-driving activities associated with both permanent and temporary fill for

the construction of the new span, which is similar to the activities associated with the East Span demolition project, the technical memoranda did not identify potential new impacts not previously mitigated. For this reason, the permittee determined that the original environmental determination is valid.

~~HH.~~G. **Public Trust.** The approximately 46.05 acres of suspended, solid and pile supported fill for the new bridge and the fill associated with the East Span demolition is for a water-oriented use, and the new Bridge will improve public access as defined by Section 66605 of the McAteer-Petris Act. Fill for water-oriented uses and public access is consistent with the public trust. Thus, the Commission finds that the fill is consistent with the public trust.

~~I.~~ H. **Conclusion.** For all of the above reasons, the benefits of the project clearly exceed the detriment of the loss of water areas and the project will provide the maximum feasible public access to the Bay and its shoreline. Therefore, the project is consistent with the *San Francisco Bay Plan*, the McAteer-Petris Act, the Commission's Regulations, and the Commission's amended management program for the San Francisco Bay segment of the California coastal zone.

IV. Standard Conditions

A. **Permit Execution**. This amended permit shall not take effect unless the permittee executes the original of this amended permit and returns it to the Commission within ten days after the date of the issuance of the amended permit. No work shall be done until the acknowledgment is duly executed and returned to the Commission.

B. **Notice of Completion**. The attached Notice of Completion and Declaration of Compliance form shall be returned to the Commission within 30 days following completion of the work.

C. **Permit Assignment**. The rights, duties, and obligations contained in this amended permit are assignable. When the permittee transfers any interest in any property either on which the activity is authorized to occur or which is necessary to achieve full compliance of one or more conditions to this amended permit, the permittee/ transferor and the transferee shall execute and submit to the Commission a permit assignment form acceptable to the Executive Director. An assignment shall not be effective until the assignee executes and the Executive Director receives an acknowledgment that the assignee has read and understands the amended permit and agrees to be bound by the terms and conditions of the amended permit, and the assignee is accepted by the Executive Director as being reasonably capable of complying with the terms and conditions of the amended permit.

D. **Permit Runs With the Land**. Unless otherwise provided in this amended permit, the terms and conditions of this amended permit shall bind all future owners and future possessors of any legal interest in the land and shall run with the land.

E. **Other Government Approvals**. All required permissions from governmental bodies must be obtained before the commencement of work; these bodies include, but are not limited to, the U. S. Army Corps of Engineers, the State Lands Commission, the Regional Water Quality Control Board, and the city or county in which the work is to be

performed, whenever any of these may be required. This amended permit does not relieve the permittee of any obligations imposed by State or Federal law, either statutory or otherwise.

F. **Built Project must be Consistent with Application**. Work must be performed in the precise manner and at the precise locations indicated in your application, as such may have been modified by the terms of the amended permit and any plans approved in writing by or on behalf of the Commission.

G. **Life of Authorization**. Unless otherwise provided in this amended permit, all the terms and conditions of this amended permit shall remain effective for so long as the permit remains in effect or for so long as any use or construction authorized by this amended permit exists, whichever is longer.

H. **Commission Jurisdiction**. Any area subject to the jurisdiction of the San Francisco Bay Conservation and Development Commission under either the McAteer-Petris Act or the Suisun Marsh Preservation Act at the time the amended permit is granted or thereafter shall remain subject to that jurisdiction notwithstanding the placement of any fill or the implementation of any substantial change in use authorized by this amended permit. Any area not subject to the jurisdiction of the San Francisco Bay Conservation and Development Commission that becomes, as a result of any work or project authorized in this amended permit, subject to tidal action shall become subject to the Commission's "bay" jurisdiction.

I. **Changes to the Commission's Jurisdiction as a Result of Natural Processes**. This amended permit reflects the location of the shoreline of San Francisco Bay when the permit was issued. Over time, erosion, avulsion, accretion, subsidence, relative sea level change, and other factors may change the location of the shoreline, which may, in turn, change the extent of the Commission's regulatory jurisdiction. Therefore, the issuance of this amended permit does not guarantee that the Commission's jurisdiction will not change in the future.

J. **Violation of Permit May Lead to Permit Revocation**. Except as otherwise noted, violation of any of the terms of this amended permit shall be grounds for revocation. The Commission may revoke any permit for such violation after a public hearing held on reasonable notice to the permittee or its assignee if the amended permit has been effectively assigned. If the amended permit is revoked, the Commission may determine, if it deems appropriate, that all or part of any fill or structure placed pursuant to this amended permit shall be removed by the permittee or its assignee if the amended permit has been assigned.

K. **Should Permit Conditions Be Found to be Illegal or Unenforceable**. Unless the Commission directs otherwise, this permit shall become null and void if any term, standard condition, or special condition of this amended permit shall be found illegal or unenforceable through the application of statute, administrative ruling, or court determination. If this amended permit becomes null and void, any fill or structures placed in reliance on this permit shall be subject to removal by the permittee or its

assignee if the amended permit has been assigned to the extent that the Commission determines that such removal is appropriate. Any uses authorized shall be terminated to the extent that the Commission determines that such uses should be terminated.

L. **Permission to Conduct Site Visit**. The permittee shall grant permission to any member of the Commission's staff to conduct a site visit at the subject property during and after construction to verify that the project is being and has been constructed in compliance with the authorization and conditions contained herein. Site visits may occur during business hours without prior notice and after business hours with 24-hour notice.