

San Francisco Bay Conservation and Development Commission

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May 15, 2015

TO: Commissioners and Alternates

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**SUBJECT: Staff Recommendation on BCDC Permit Application No. 2013.010.00;
Bon Air Bridge Replacement and Public Access Improvements
City of Larkspur, Marin County**
(For Commission consideration on May 21, 2015)

Recommendation Summary

The staff recommends approval of BCDC Permit Application No. 2013.010.00, to the City of Larkspur, for the replacement of the Bon Air Bridge, which, as conditioned, will result in the following:

1. The construction of an approximately 24,250-square-foot bridge of which approximately 21,000 square feet (0.49 acres) and approximately 880 cubic yards of solid fill will be located in the Commission's certain waterway jurisdiction at Corte Madera Creek—a net increase of approximately 4,807 square feet (0.110 acres) of Bay surface coverage resulting from demolition of the existing bridge and marsh restoration (i.e., mitigation);
2. The creation of public access for bicycles, pedestrians, and disabled visitors at an area totaling approximately 13,192 square feet (.302 acres) of which approximately 11,322 square feet (0.259 acres) will be located in the Commission's jurisdiction;
3. The installation of temporary trestles, access ramps, and cofferdams within an approximately 21,000-square-foot (0.49-acre) area of the Commission's jurisdiction, which will be removed at the completion of bridge construction;

4. The relocation of utility lines, one temporarily suspended above Corte Madera Creek and one permanently below the creek bed;
5. The improvement of public boat dock facilities located in the City of Larkspur to comply with Americans with Disabilities Act (“ADA”) standards; and
6. The creation of tidal marsh to mitigate for bridge construction impacts at an approximately 11,194-square-foot (0.257-acre) area in the City of Larkspur, and the contribution of funds (\$45,000.00) to enhance habitat for federally-endangered species at a site in the County of Marin.

Staff Recommendation

The staff recommends that the Commission adopt the following resolution:

I. Authorization

- A. **Authorized Project.** Subject to the conditions stated below, the City of Larkspur (permittee or City) is hereby granted permission, in a certain waterway, to replace the existing Bon Air Bridge located at Corte Madera Creek located approximately two miles west of its mouth at San Francisco Bay, in the City of Larkspur, Marin County, specifically:

In a certain waterway

1. Demolish an approximately 14,985-square-foot (0.34-acre) portion of the existing Bon Air Bridge, including 12 cubic yards (cy) of solid fill to minus 2 feet below the mudline, and dispose demolition materials at an authorized site located outside of the Commission’s jurisdiction;
2. Install, use, and maintain in-kind temporary structures covering approximately 21,372 square feet (0.49 acres), including 30-foot wide trestles supported by approximately 128, 12- to 14-inch pilings, and eight 500-square-foot cofferdams, remove the fill to minus 2 feet below the mudline, and dispose the fill at an authorized site located outside the Commission’s jurisdiction;
3. Construct, use, and maintain in-kind an approximately 21,372-square-foot (0.49-acre) section of a replacement bridge supported by eight, 8-foot-diameter columns (840 cy of solid fill) and abutments (44 cubic yards of solid fill), with the following features: two 11.6-foot-wide vehicle lanes; two 7-foot-wide Class II bicycle lanes; two 10-foot-wide sidewalks; two 46.5-inch-high barriers separating vehicle lanes from bike lanes; two 42- to 44-inch-high outer railings; 12 approximately 20-foot-tall light standards; utilities; signage; and seismic instrumentation equipment;

4. Install (via horizontal directional drilling), use, and maintain in-kind an approximately 535-foot-long, 30-inch-diameter telecommunication line located east of the bridge at depths up to 33 feet below the creek bed;
 5. Install, use, and maintain in-kind (temporarily) a 12kV electric line suspended approximately 40 feet above Corte Madera Creek northwest of the bridge, and, upon completion of bridge construction and no later than four years after project commencement, relocate and place the utility on the replacement bridge; and
 6. Restore, manage, and monitor an approximately 870-square-foot (0.020-acre) area of marsh vegetation upon completion of bridge construction.
- B. **Permit Application Date.** This authority is generally pursuant to and limited by the subject application dated September 6, 2013, including all accompanying and subsequent correspondence and exhibits, and subject to the modifications required by conditions herein.
- C. **Deadlines for Project Commencement and Completion.** Construction activities authorized herein must commence prior to January 1, 2016, and must be diligently pursued to completion and completed within four years of project commencement or by December 31, 2019, whichever is earlier, unless an extension of time is granted by amendment of the permit. All in-kind maintenance authorized herein is allowed as long as activities and uses authorized herein remain in place and as long as relevant title documents, including leases, remain valid.
- D. **Bay Fill and Mitigation.** In the Commission's jurisdiction, the project involves the demolition of a 14,985-square-foot section of a bridge and its replacement with a 21,372-square-foot section of a new bridge. A temporary structure of an approximate same size will be installed to facilitate traffic flow during demolition and construction, and removed upon project completion. Prior to mitigation, the net increase of permanent pile-supported fill is approximately 6,387 square feet (0.146 acres) and 872 cubic yards of solid fill. Mitigation for impacts of the temporary and permanent fill includes restoration of marsh at an approximately 11,200-square-foot (0.257-acre) area and, consequently, the net decrease in open water area will be approximately 4,807 square feet (0.110 acres).
- E. **Public Access.** The bridge authorized herein includes a public access area totaling approximately 13,192 square feet (0.302 acres)—11,322 square feet (0.259 acres) in the Commission's jurisdiction—with two 7-foot-wide, Class II bike lanes and two 10-foot-wide sidewalks, which are ADA-compliant (Exhibit A). The replacement bridge allows under-bridge access to non-motorized boats, but the new bridge deck will be thicker than the existing one and, consequently, boat clearance at bridge ends will be more restricted. To offset this impact, the permittee will implement ADA improvements at the City of Larkspur's public boat dock facilities at the Bon Air Landing (on South Eliseo Drive), and the Marin Rowing Club (50 Drakes Landing Road) (Exhibit B).

II. Special Conditions

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

A. Plan Review and Approval

1. **Construction in Accord with Plans.** The project constructed pursuant to this permit shall generally conform with the plans entitled "Project Plans for Bon Air Road Bridge Replacement" dated January, 2014 and prepared by Parsons Brinckerhoff, and all accompanying and subsequent correspondence and exhibits. Final project plans shall be prepared and submitted for staff review and approval by or on behalf of the Commission, as described below.
2. **Plan Review.** No work authorized herein shall commence until final site plans, including for demolition, staging, construction, engineering, architectural, and landscaping/vegetation restoration activities (for temporary and permanent activities) authorized herein, have been submitted, reviewed, and approved in writing by or on behalf of the Commission. Specific drawings and information required in such plans shall be discussed and determined in coordination with Commission staff prior to submittal. To save time, preliminary drawings should be submitted and reviewed prior to submittal of final drawings.

The plans shall be accompanied by a letter requesting plan review and approval. At a minimum, plans shall include: the shoreline (Mean High Water or, where wetland vegetation is present, +5 feet above Mean Sea Level), property lines, the boundaries of areas to be reserved for public access, and the location, dimensions, and materials of all elements of the project authorized herein. All plan review shall be completed by or on behalf of the Commission within 45 days of staff receipt of plans.

3. **Plan Approval.** Plan approval or disapproval shall be based upon:
 - (a) completeness and accuracy of the plans in showing features authorized herein;
 - (b) consistency of the plans with the terms and conditions of this permit;
 - (c) assurance that Bay fill does not exceed this authorization and all public access improvements authorized or required herein are reflected;
 - (d) the appropriateness of the types of fill material and their manner of placement;
 - (e) the preparation of the plans by professionals and their official stamp or certification of approval; and
 - (f) assurance that appropriate provisions have been incorporated for safety in case of a seismic or flooding event.
4. **Conformity with Final Approved Plans.** Prior to commencement of any work authorized herein, the appropriate design professional(s) of record shall certify in writing that, through personal knowledge, the work covered by the authorization will be performed in accordance with the approved design criteria and in substantial conformance with the approved plans. All

improvements constructed pursuant to this permit shall conform to the final approved plans. No changes shall be made thereafter to any final plans without first obtaining written approval of the change(s) by or on behalf of the Commission.

5. **Discrepancies Between Approved Plans and Special Conditions.** In case of any discrepancy between final approved plans and special conditions of this authorization, the special condition shall prevail. The permittee is responsible for assuring that all plans accurately and fully reflect the special conditions of this authorization.
 6. **Appeals of Plan Review Decisions.** Any plan approval, conditional plan approval, or plan denial may be appealed by the permittee or any other interested party to the Commission's Design Review Board ("DRB") or, if necessary, subsequently to the Commission. Such appeals must be submitted to the Commission's Executive Director within 30 days of the plan review action and must include the specific reasons for appeal. The DRB shall hold a public hearing and act on the appeal within 60 days of the receipt of the appeal. If subsequently appealed to the Commission, the Commission shall hold a public hearing and act on the appeal within 90 days of the receipt of the subsequent appeal.
- B. **Fill Removal.** The permittee shall remove demolition materials and temporary fill materials authorized herein by completion of the demolition and construction project phases, no later than four years from the date of project commencement. All existing and temporary pilings shall be removed to minus 2 feet below the Corte Madera Creek mud-line. Demolition and construction fill materials shall be disposed at an authorized site located outside of the Commission's jurisdiction.
 - C. **Temporary Utility Line Relocation.** By completion of the demolition and construction project phases and no later than four years from the date of project commencement, the electrical utility line relocated temporarily west of the bridge, as authorized herein, shall be removed and reinstalled on the replacement bridge in a manner that does not physically or visually impact public access areas authorized herein.
 - D. **Public Access.** By completion of the project authorized herein in Section I.A.3, the permittee shall make an area totaling 13,192 square feet (0.303 acres) located on the Bon Air Bridge, as generally shown on Exhibit A, available exclusively to the public for unrestricted access for walking, bicycling, viewing, and related purposes. If the permittee wishes to use the public access area for other purposes, it must obtain prior written approval by or on behalf of the Commission.
 1. **Improvements.** The permittee shall construct all public access improvements in compliance with the accessibility requirements of the California Building Code, and such improvements shall include:

- a. Two, 7-foot-wide Class II bicycle lanes, and two, 10-foot-wide sidewalks;
 - b. Two, 46.5-inch-high barriers separating vehicle lanes from bike lanes, and two outer bridge railings not to exceed 42- to 44-inch-high;
 - c. Twelve, approximately 20-foot-tall light standards with “acorn-style lights” that meet the International Dark Sky Association’s standards and meet national lighting safety criteria for pedestrians and bikes; and
 - d. A minimum of four public access signs located at the bridge southern and northern bicycle and sidewalk entry/exit points.
2. **Connections to Adjacent Pathways.** The permittee shall construct the two seven-foot-wide bike lanes and two 10-foot-wide sidewalks on the Bon Air Bridge to connect to adjacent or adjoining pathways; specifically: (a) at the northern end of the bridge, the bike paths and sidewalks shall connect to a multi-use path traveling west adjacent to Corte Madera Creek, a multi-use path traveling along northwest side of Bon Air Drive, and a bike lane traveling west at South Eliseo Drive, which ultimately connects to the San Francisco Bay Trail near the intersection of Sir Francis Drake Boulevard and Highway 101; and (b) at the southern end of the bridge, the bike paths and sidewalks will connect to a multi-use path traveling along the west side of Bon Air Drive and a bike lane at Bon Air Drive, both intersecting with Magnolia Avenue.
 3. **Maintenance.** The required 13,192-square-foot public area and associated improvements shall be permanently maintained by and at the expense of the permittee or its assignees. Such maintenance shall include, but is not limited to, repairs to all path surfaces, barriers, railings, light standards, and signage; cleanup of litter and other materials deposited within the access areas; and removal of any encroachments into the access areas. Within 30 days after notification by Commission staff, the permittee shall correct any maintenance deficiency noted in a staff inspection of the site.

Prior to assigning any portion of this permit, the permittee shall transfer maintenance responsibility of required public access area authorized and required herein to a public agency or other party acceptable to the Commission 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.

4. **Reasonable Rules and Restrictions.** The permittee may impose reasonable rules and restrictions for the use of the public access area to correct particular problems that may arise. 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 the permittee has identified and substantiated. Rules may include restricting hours of use and delineating appropriate behavior.

5. **Public Dock Upgrades.** Within one year of commencement of construction of the bridge authorized herein, the permittee shall submit a Commission permit application for implementation of public boat dock upgrades at the Bon Air Landing (on South Eliseo Drive, City of Larkspur), and at the Marin Rowing Club (50 Drakes Landing Road, City of Larkspur), sites generally shown on Exhibit B. By completion of the bridge project authorized herein, the permittee shall complete the authorized public boat dock upgrades. In the event that these upgrades are not feasible or are not implemented at these locations and within the time-frame specified herein, the permittee shall develop an alternative public access improvement proposal to offset restricted under-bridge clearance for non-motorized boats, seek Commission staff review of such proposal(s), obtain relevant Commission permit(s), and implement such improvements no later than four years from the date of commencement of the bridge project authorized herein.
- E. **Construction Measures to Protect Special-Listed Fish Species.** To minimize disturbance to special-status species (including the federally-threatened Central California Coast (CCC) steelhead and southern Distinct Population Segment (DPS) of the North American green sturgeon, and their designated critical habitat), the permittee shall conduct construction activities authorized herein in compliance with restrictions identified in the related National Oceanic and Atmospheric Administration Fisheries (NMFS) Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation Management Act Essential Fish Habitat Consultation dated March 30, 2012, including: (1) restrict in-water work to June 15 through November 30; (2) use a bubble curtain to dampen in-water sound levels from driving piles with an impact hammer (unless work is conducted inside a cofferdam); (3) use vibratory hammers to drive pilings associated with the temporary trestle, the bridge foundations, and the cofferdams, and use impact hammers to drive piles to their final depths; (4) cease impact hammer pile driving by November 15; (5) avoid night-time work; (6) employ a biologist to monitor installation and dewatering of cofferdams; (7) use screens on pumps during cofferdam dewatering to prevent entrainment and, if needed, conduct fish salvage in cofferdams; (8) implement a hydro-acoustic monitoring and reporting plan to ensure in-water sound pressure levels from pile driving to not exceed those considered by NMFS; and (9) conduct in-water work at low tide to minimize turbidity impacts.
- F. **Construction Measures to Protect Other Special-Listed Species.** To minimize disturbance to the federally-endangered Ridgway rail and the salt marsh harvest mouse, the permittee shall conduct construction activities authorized herein in compliance with restrictions identified in the related U.S. Fish and Wildlife Service's (USFWS) Endangered Species Act (ESA) Section 7(a)(2) Biological Opinions dated April 12, 2012 and June 10, 2014, including: (1) conduct construction outside the Ridgway rail breeding season

(February 1 through August 31) unless surveys show the rail is not present within 700 feet of the project site; (2) implement a spill prevention plan, a Stormwater Pollution Prevention Plan (SWPPP), and Best Management Practices (BMPs); (3) contain on-site trash; (4) hand-remove tidal marsh and upland refugia vegetation at the project site; (5) install exclusionary fencing to prevent sensitive species from entering the construction site; and (6) minimize night-time work and lighting near marsh.

- G. **Water Quality Certification.** The permittee shall implement activities authorized herein in compliance with the requirements of water quality certifications issued by the California Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB") on May 16, 2014 and February 9, 2015 including: (1) prepare a storm water control plan for Magnolia Avenue for the RWQCB's review and approval; (2) install, operate and maintain construction and post-construction BMPs to reduce erosion and control pollution sources; and (3) prepare and implement a HDD drilling contingency plan to minimize potential for release of drilling fluids to the creek and ensure an adequate response in the event of a release.
- H. **Seismic Instrumentation.** By completion of the project authorized herein in Section I.A.3 and within four years of project commencement, the permittee shall install seismic instrumentation equipment on the replacement bridge consistent with the prior review and advice of the Commission's Engineering Criteria Review Board.
- I. **Valid Title/Lease.** Prior to the expiration of the California State Lands Commission lease for the project site issued on April 23, 2015 and expiring on April 23, 2040, the permittee shall make good faith efforts to enter into a new or extended lease for the underlying property and provide evidence of the new or extended lease to the Commission. In the event that a new or extended lease is not obtained by the permittee and/or is not provided to the Commission prior to April 23, 2039, the permittee shall be responsible for and obtain any necessary Commission authorization for the removal or modification of facilities authorized herein located at property for which valid title no longer exists.
- J. **Mitigation.** To mitigate for temporary and permanent loss of tidal marsh associated with the project authorized herein, the following activities shall be undertaken by completion and within four years of commencement of the replacement bridge project:
1. **Marsh Revegetation.** The permittee shall restore, manage, and monitor marsh revegetation at an area measuring approximately 870-square-foot (0.020-acre) located within the bridge construction footprint.
 2. **Marsh Restoration.** Within one year of commencement of construction of the bridge authorized Section I.A.3, the permittee shall submit a Commission permit application to facilitate the restoration, management and monitoring of an approximately 11,200-square-foot (0.257-acre) area located adjacent to Piper Park, in the City of Larkspur. Within one year of said permit issuance, the permittee shall initiate the authorized restoration project. In the event that restoration is not feasible or is not implemented at this location and

within the time-frame specified herein, the permittee shall develop an alternative mitigation proposal to address marsh impacts associated with the project authorized herein, seek Commission staff review of such proposal(s), obtain a relevant Commission permit(s), and initiate implementation of such improvements no later than four years from the date of project commencement.

3. **Habitat Enhancement.** Upon completion of the bridge replacement authorized in Section I.A.3, the permittee shall submit to the Commission staff written verification that the implementation of a project to enhance approximately 20,000 square feet (0.459 acres) of special-listed species habitat at Creekside Park, in the City of Greenbrae, has received appropriate permits, including the Commission's, and has commenced. In the event that the enhancement project has not been initiated within four years of commencement of the Bon Air Bridge project, the permittee shall provide the Commission staff with a written statement explaining the project delay and a revised timeframe for implementation and completion of the Creekside Park enhancement project.

- K. **Sea Level Rise Resilience and Adaptation Measures.** To ensure that any elements of the bridge, which are anticipated to be submerged by future flooding and/or rise in creek level, remain resilient over the life of the project authorized herein, the permittee shall incorporate the following strategies during the bridge construction phase: (1) application of epoxy coating and concrete clear cover on all exposed steel, and use of stainless or galvanized steel on exposed structural steel to prevent corrosion; (2) design and build bridge bents taking into account applicable water loads according to Caltrans standards, and the anticipated channel velocity and the possibility of accumulation of debris at the bents and superstructure during an extreme storm event; (3) at each abutment, use of vertical restrainers to prevent un-seating of the girders and bearing uplift during an extreme storm event; (4) construction of abutment bearings with steel reinforced elastomeric bearing pads, that do not have exposed moving parts; and (5) use of an open railing system at the bridge deck to allow any potential flood water to pass through and over the bridge roadway, if needed.

III. Findings and Declarations

This authorization is given 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 (CEQA), and the Commission's amended management program for the San Francisco Bay segment of the California coastal zone for the following reasons:

- A. **Use.** The project is not located at a site with a Bay Plan priority use designation.
- B. **Bay Fill.** The Commission may allow fill when it meets the requirements of Section 66605 of the McAteer-Petris Act, which states, in part: (a) the fill should be limited to water-oriented uses and the public benefits of fill must clearly exceed the detriment from the loss of water areas; (b) no alternative upland location exists for the fill; (c) the fill should be the minimum amount necessary; (d) the fill should minimize harmful effects to Bay resources; (e) the fill should be constructed in accordance with sound safety standards; and (f) the fill should be authorized when valid property title has been obtained.

1. **Water-Oriented Use and Public Benefits.** The Bon Air Bridge was built in 1958 and provides a critical connection between Magnolia Avenue (City of Larkspur) and Sir Francis Drake Boulevard (City of Greenbrae) over Corte Madera Creek. It is an important link to Marin General Hospital and U.S. Highway 101. The bridge provides access to motorists, bicyclists, and pedestrians, and accommodates approximately 11,800 average daily trips (ADT), a volume expected to increase to 12,600 ADT by 2036.

Section 66605 of the McAteer-Petris Act defines bridges as a water-oriented use. The City of Larkspur will replace the 56-year-old bridge, which has been deemed “structurally deficient” by the State Department of Transportation (Caltrans). The City states that: “[t]idal flow has eroded the [existing] supporting bridge piles and caused cracks and deterioration.... In 2000, inspections of the bridge indicated crumbling at several support locations. Further inspections in 2003 revealed severe deterioration of the bridge concrete, including visible cracks and spalls with exposed rebar on some supports and poor deck conditions. Steel girders and bearing plates show excessive rust. Concrete spalls directly below the bearing plates result in multiple locations where bearing plates are mostly unsupported. The condition of the bridge continues to deteriorate and will likely result in restrictions on...use unless mitigation [i.e., replacement] occurs.”

Prior to mitigation, the replacement bridge will result in a 6,387-square-foot (0.146 acres) net increase of pile-supported fill and approximately 872 cubic yards (cy) of solid fill. The new structure will generally follow the existing bridge alignment, but be straighter and the pilings supporting the bridge will be oriented in relation to creek flow to reduce scouring at the piers, abutments and adjacent embankments. The bridge will have two 11.6-foot-wide vehicle lanes, two 7-foot-wide bike lanes, and two 10-foot-wide pedestrian sidewalks. The bridge will be wider along the upstream edge to widen existing bicycle and pedestrian pathways. The City will mitigate project-related impacts to Bay resources by restoring tidal marsh conditions in the project vicinity, as discussed below. In light of the increased Bay

surface area resulting from implementation of mitigation and the removal of the existing bridge, the bridge project will result in an approximately 4,807-square-foot (0.110-acre) net increase of Bay fill.

To maintain access along this transportation corridor during construction, the City will temporarily place approximately 21,000 square feet (0.49 acres) of fill for pile-supported trestles and embankment access ramps. These structures will facilitate a phased-construction approach to ensure generally continuous traffic flow during construction. Further, temporary cofferdams authorized herein, will segregate construction activities in the creek to protect sensitive resources. At project completion, all temporary fill will be removed resulting in no permanent change of water surface area or volume. Special Condition II.B requires that all bridge demolition and construction phase materials be removed from the Commission's jurisdiction within four years of project commencement. Marsh vegetation damaged during construction will be restored at project completion pursuant to Special Condition II.J.

The City will also temporarily install and suspend above the creek an electrical utility line. Following construction, the line will be relocated onto the new bridge. Special Condition II.C requires that, upon completion of the project, the City will relocate the electrical utility line onto the bridge in a manner that does not physically or visually impact public access areas required herein.

The Bay Plan Other Uses of the Bay and Shoreline Policy 6 states, in part, that "[p]ower distribution and telephone lines should either be placed underground (or in an attractive combination of underground lines with streamlined overhead facilities)...near the shores of the Bay." An approximately 500-foot-long telecommunication line will also be installed via horizontal directional drilling (HDD) west of the bridge and below the creek bed, resulting in no effects on water surface area or volume. According to the City, "HDD is less intrusive than traditional open-cut trenching and avoids direct soil disturbance of environmentally sensitive resources. The drilling will involve the use of high-pressure drilling fluids (bentonite slurry or similar)...." Special Conditions II.F and II.G require the City to minimize the risk of an accidental discharge of drilling fluids through the creek bottom through the preparation and implementation of various spill contingency plans, the application of best management practices (BMPs), and compliance with conditions required in state and federal authorizations for the project.

The Commission finds that the project, as conditioned, meets the definition of a water-oriented use and that the public benefits of the permanent and temporary fill outweigh the detriments.

2. **Alternative Upland Location and Minimum Amount of Fill.** The Initial Study (May 2011) for the replacement bridge identified project objectives, including correcting structural deficiencies, minimizing traffic disruption during construction, providing an “aesthetically-pleasing signature design,” and protecting the natural and recreational uses associated with the creek. Early public comments emphasized that the bridge be “aesthetically similar” to the existing one, “retain a minimal elevation profile,” and be “the least visually-detracting...relative to the surrounding scenery.” Hence, the City of Larkspur did not consider elaborate structural features (trusses, arches, cable stays, suspension or support-towers, etc.), which could have allowed a creek crossing with no or fewer support structures.

According to the City, the design involving the placement of piers in the creek was selected because building a free-span option would require raising the elevation of adjoining roadways. Because the bridge is part of “the main arterial between Larkspur and Highway 101 and between Larkspur and the nearest hospital,” the City states that vehicular access “must be preserved to the greatest extent possible during construction [and] the bridge has to be replaced one half at a time,” which is possible through temporary construction facilities to be removed completely at project completion. According to the City, “the construction phasing requirement for the sake of public safety makes infeasible the use of free-spanning truss and tied-arch bridges or suspension and cable stay structure types.”

The City states that “[t]he existing [bridge] right-of-way is limited...and there is limited space on either side of the existing bridge for expansion or re-alignment of the bridge. The approach roadway tie-ins are adjacent to sensitive wetland habitats.... Entire new alignments crossing Corte Madera Creek would result in significant impacts to existing sensitive habitats and adjacent natural and visual resources, rendering alternative alignments far more impracticable.” The thickness of the bridge deck will be approximately 4.8 feet compared with the existing 3.5-foot-depth. The thicker deck is stronger and allows for greater length between—and fewer number of—support piers. The reconfigured support system facilitates pier and abutment placement in the direction of creek flow, and opens up watershed views from the creekside. The City will remove the existing and temporary bridge structures to two feet below the creek mudline, pursuant to Special Condition II.B.

The City states that the various design alternatives would have resulted in a similar area and volume of fill as the project authorized herein with the exception of one alternative that would have involved constructing abutments further upland of the creek. This alternative would have involved a greater number of pier bents and pilings and, hence, more fill. The purpose of most of the net increase in fill is to provide improved access over the creek for all bridge users, including bicycles and pedestrians. The impacts of this

additional fill will be mitigated through marsh restoration and nearby public dock upgrades, as required in Special Conditions II.D and II.J. The City states that the bridge has no upland alternative and involves the minimum amount of fill necessary to achieve the project purpose.

The Commission finds that, as conditioned, the bridge has no upland alternative and, as designed, constitutes the minimum necessary fill.

3. **Bay Resources.** 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.

Water Surface Area and Volume Policy 1 states, in part: "[f]illing and diking that reduce surface area and water volume should therefore be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative." Policy 2 states, in part: "[a]ny proposed fills, dikes, or piers should be thoroughly evaluated to determine their effects upon water circulation...."

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....” Policy 5 states, in part: “...new development should be sited and designed consistent with standards in municipal stormwater permits and state and regional stormwater management guidelines, where applicable, and with the protection of Bay resources.”

- **Fish and Wildlife.** On March 30, 2012, the National Marine Fisheries Service (NMFS) issued a biological opinion (B.O.) regarding the project’s effects on: the federally-threatened Central California Coast (CCC) steelhead and southern Distinct Population Segment (DPS) of the North American green sturgeon, and their designated critical habitat; CCC coho salmon designated critical habitat; and Essential Fish Habitat (EFH) for Pacific salmon, groundfish, and coastal pelagic species. The opinion states that pile driving and temporary water quality impacts could affect green sturgeon and steelhead, and their critical habitats. In June 2014, NMFS reviewed modifications to the originally-considered project design and determined that the original B.O. remained valid.

To minimize effects, NMFS recommended that the City include the following measures when undertaking the project: restrict in-water work to June 1 through November 30, the time of year where protected species are least likely to be present; use a bubble curtain to dampen in-water sound levels from driving piles with an impact hammer (unless work is conducted inside a cofferdam); use vibratory hammers to drive pilings associated with the temporary trestle, the bridge foundations, and the cofferdams, and use impact hammers to drive piles to their final depths; cease impact hammer pile driving by November 15; avoid nighttime work; employ a biologist to monitor installation and dewatering of cofferdams; use screens on pumps during cofferdam dewatering to prevent entrainment and, if needed, conduct fish salvage in cofferdams; and implement a hydro-acoustic monitoring and reporting plan to ensure in-water sound pressure levels from pile driving do not exceed those considered by NMFS. Special Condition II.E requires the City to implement these measures and, in general, comply with NMFS biological opinion and consultation in undertaking the project authorized herein.

In addition, NMFS determined that EFH could be affected through the removal and installation of temporary and permanent fill from the related shading, turbidity, sound, and fill coverage. To minimize these effects, NMFS recommended conducting in-water work at low tide to minimize turbidity impacts. In conclusion, NMFS concluded that the project “is not likely to jeopardize the continued existence” of CCC steelhead or southern DPS green sturgeon, and “is not likely to adversely modify or destroy designated critical habitat for CCC steelhead, CCC coho salmon, or southern DPS green sturgeon.”

On April 12, 2012 and on June 10, 2014, the U.S. Fish and Wildlife Service (USFWS) issued a B.O. regarding the project's effects on the federally-endangered Ridgway rail and the salt marsh harvest mouse. The opinion identified a "saline emergent wetland [located] to the northeast of the Bon Air Road Bridge [that] provides suitable habitat for salt marsh harvest mouse [as well as adjacent refugia areas]," and suitable areas for Ridgway rail at areas upstream and downstream of the bridge. Further, it stated that project construction noise, vibration, and night-time work could cause flushing and behavior disruption for the species of concern, and work-site trash could increase the number of predators in the area. Potential colonization by invasive vegetation at construction areas could also degrade natural conditions.

To minimize these impacts, USFWS recommended that the City incorporate measures in implementing the project, including: conduct construction outside the Ridgway rail breeding season (February 1 through August 31) unless surveys show the rail is not present within 700 feet of project site; implement a spill prevention plan, a Stormwater Pollution Prevention Plan (SWPPP), and Best Management Practices (BMPs); contain on-site trash; hand remove tidal marsh and upland refugia vegetation at the project site; install exclusionary fencing to prevent sensitive species from entering the construction site; and minimize night-time work and lighting near marsh. Special Condition II.F requires the City to implement these measures and, in general, comply with USFWS' biological opinions in implementing the project authorized herein. The B.O. stated that habitat suitable for the salt marsh harvest mouse and Ridgway rail in the project vicinity should be improved, and evaluated relevant mitigation discussed below.

- **Water Surface Area and Volume.** The City states that the bridge "project site is located in the Corte Madera Watershed, also referred to as the Ross Valley watershed, which drains a 28-square-mile area of eastern Marin County...." Further, according to the City, "[t]he tidal reaches of the system are heavily impacted and have been modified for flood management..." and that "Corte Madera Creek is a flat-bottomed tidal channel with a direct connection to San Francisco Bay." In addition, the project site is influenced by tide fluctuations from the Bay.

According to the City, the area is "composed of fine-grained colluvium derived from the erosion of nearby hills and alluvial deposits of marsh sediments and Bay mud. The lower reaches of Corte Madera Creek are subject to ongoing siltation supplied by both [the Bay and Creek watershed]. Sand and gravel are deposited in the flood control channel downstream from Ross [north of the bridge] during major rainstorm

events in the winter months, while sediment from the Bay...is transported by summer winds and circulated throughout the Bay by tidal currents.”

The bridge pier design is partly intended to orient the bridge support system in the direction of creek flow to improve the creek’s conveyance and reduce potential for scouring and erosion at the site. According to the City, “[b]ased on the hydraulic model, it was determined that the proposed bridge would have no significant effect on the water surface elevation and flow velocities at the Project site....”

- **Water Quality.** On May 16, 2014, the San Francisco Bay Regional Water Quality Control Board (RWQCB) issued a water quality certification for the project authorized herein. In evaluating the project, the RWQCB found that water quality could be impacted during bridge construction and operation due to increased impervious bridge surfaces and construction in tidal marsh and open water areas. To address these impacts, the certification requires the City to, among other things, prepare a storm-water control plan for Magnolia Avenue for the RWQCB’s review and approval, and install, operate and maintain construction and post-construction BMPs to reduce erosion and control pollution sources. The City will implement these measures, ensure that construction complies with maximum thresholds for turbidity and water quality provisions established by the RWQCB, and comply with other measures contained in the certification.

On February 9, 2015, the RWQCB issued an addendum to the certification to cover the installation of the telecommunication line under the creek, in which it found that the activity would potentially impact water quality, in part, from the potential release of HDD drilling fluids and related materials. To address this impact, the certification requires the City to, among other things: prepare and implement a drilling contingency plan to minimize potential for release of drilling fluids to the creek and ensure an adequate response in the event of a release.

Special Condition II.G requires the City to comply with the RWQCB’s certifications for the Bon Air Bridge project and to comply with construction measures and restrictions contained therein.

The Commission finds that the project, as conditioned, will adequately protect fish, wildlife, water surface and volume, and water quality in part by complying with federal and state recommendations and authorizations to protect these Bay resources.

4. **Sound Safety Standards.** In addition to the provisions of Section 66605 of the McAteer-Petris Act regarding fill safety standards, the Bay Plan Safety of Fill Policy 1 states, in part: "...the Engineering Criteria Review Board (ECRB)...review[s] all except minor projects for the adequacy of their specific safety provisions..." Further, Policy 3 states, in part: "[t]o provide vitally needed information on the effects of earthquakes on all kinds of soils, installation of strong-motion seismographs should be required on all future major land fills." Policy 4 states, in part: "[a]dequate measures should be provided to prevent damage from sea level rise and storm activity that may occur on fill or near the shoreline over the expected life of a project.... New projects on fill or near the shoreline should either be set back from the edge of the shore so that the project will not be subject to dynamic wave energy, be built so the bottom floor level of structures will be above a 100-year flood elevation that takes future sea level rise into account for the expected life of the project, be specifically designed to tolerate periodic flooding, or employ other effective means of addressing the impacts of future sea level rise and storm activity."

On December 5, 2012, the Commission's ECRB reviewed the bridge project focusing on, among other issues, whether the structural and geotechnical design criteria (based on Caltrans bridge design criteria) would adequately address the load capacities of the bridge in light of potential ground liquefaction and seismic loading at the site, whether seismic instrumentation on the structure would be appropriate, and how the bridge would respond to future flood conditions. The ECRB requested additional information on the engineering criteria to which the City responded and the ECRB found sufficient. The City also responded to the ECRB's advice on seismic instrumentation with a proposal including, specific instrument installation method, management, and maintenance, and data collection and distribution, which the ECRB reviewed and endorsed. Special Condition II.H requires the City to install seismic instrumentation equipment upon completion of the bridge authorized herein. The ECRB also requested additional information on future flooding, including a fuller description of how the bridge would perform under future flood conditions. The City responded by preparing a risk assessment, which the ECRB endorsed and is discussed below.

In 2013, the City of Larkspur modified the design of the bridge bents and piers, which had been reviewed by the ECRB in 2012. According to the City, the revised design was intended "to have the location of the center span correspond to the center of the [creek] channel as well as correspond to the high point on the bridge profile, resulting in the largest opening for recreational water craft use while providing a superior aesthetic appearance." The City stated that the revised design did not result in a change in the number of

bridge spans, the bridge's hydraulic characteristics, or design criteria. Therefore, the modified project did not warrant a second formal review by the ECRB.

The Commission finds that the project, as conditioned, is consistent with its law and policies regarding the safety of construction and operation of fill in the Bay.

5. **Valid Title.** In 1957, the California State Lands Commission issued a Life-of-Structure Permit to the City and the County of Marin for construction, operation, and maintenance of the Bon Air Bridge. On April 23, 2015, the State Lands Commission issued a new General Lease to the City, including for areas affected by construction and staging, which is valid through 2040. Since the City of Larkspur will construct a bridge with a 75-year life span extending beyond the term of the lease, Special Condition II.I requires the City to obtain a renewed lease prior to April 23, 2040, and provide evidence of such a lease to the Commission for its review. Further, this special condition requires the City to remove the fill authorized herein in the absence of a renewed lease.

The Commission finds that the project authorized herein, as conditioned, is consistent with the Commission's law and policies regarding valid title of fill lands.

For these reasons, the Commission finds that the project, as conditioned, is consistent with the McAteer-Petris Act and relevant Bay Plan policies on fill.

- C. **Mitigation.** 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 5 states, in part: "[t]o increase the potential for the ecological success and long-term sustainability of compensatory mitigation projects...transition zones and buffers should be included in mitigation projects.... In addition, mitigation site selection should consider site specific factors that will increase the likelihood of long-term ecological success, such as...connections to other habitats." 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.

A narrow fringe of tidal marsh occurs in the area around the northeast and southwest ends of the existing Bon Air Bridge. The project will temporarily impact an approximately 870-square-foot (0.020 acre) area of marsh where construction-related activities will occur and permanently impact an approximately 45-square-foot (0.001-acre) area of tidal marsh. According to the USFWS biological opinion, the project will also affect 0.153 acres of habitat for the Ridgway rail and salt marsh harvest mouse in the project vicinity.

The City will mitigate these impacts by restoring the 870 square feet (0.020 acres) of marsh temporarily impacted by construction, as required in Special Condition II.J. Pursuant to this special condition, the City will also—under a separate Commission permit—restore, manage, and monitor an approximately 11,200-square-foot (0.257-acre) area located adjacent to nearby Piper Park, in the City of Larkspur. The Piper Park mitigation project will involve restoring tidal marsh at an area presently used as a dog park. The mitigation area is mostly located outside the Commission’s certain waterway jurisdiction, with the exception of one small area where an existing berm will be partly removed to reintroduce tidal action. The project will involve creating conditions that will promote the establishment and growth of pickleweed, saltgrass, alkali heath, and bulrush, and transition zones. Soil will be removed to achieve elevations determined by the hydrological conditions of nearby tidal channels as appropriate for wetland hydrology and marsh formation. If natural vegetation colonization does not occur after the first year, a planting plan will be implemented. According to the City, “[o]nce the vegetation matures, it is expected to replicate the species composition and structure of the naturally occurring habitats in nearby wetlands.” The City has developed a full set of biological and physical goals, and performance criteria for assessing the success of mitigation.

In addition, the City has provided funding (\$45,000.00) to enhance habitat suitable for the Ridgway rail and salt marsh harvest mouse at Creekside Park located north of the bridge. This project—pursuant to a separate Commission permit—will occur at an area with a breeding population of Ridgway rail and with habitat suitable for the salt marsh harvest mouse, which is currently impacted by recreational users and domestic pets. The goal is to improve 20,000 square feet (0.459 acres) of high tidal marsh plain and high-tide upland refugia habitat by: promoting growth of gumplant at the top of banks above areas populated with native cordgrass to provide rail nesting area and high-tide refugia; providing high-tide refugia (e.g., gumplant) at high marsh transition zones; and expanding high marsh plain vegetation into bare areas. The effort will involve planting in channels, high elevation areas, and unvegetated areas. The City will also fund site monitoring over a five-year period. As required in Special Condition II.J, the City will continue to facilitate implementation of this mitigation effort by keeping the Commission apprised of project status.

The site located adjacent to Piper Park and the Creekside Park are located within one mile of the bridge. The City has already provided funds for the Creekside Park improvements, and a BCDC permit application for the work is currently under review by Commission staff. Because both sites are geographically distinct from the bridge site, they will be authorized under separate Commission permit applications.

The Commission finds that the mitigation plan, as conditioned and required herein, adequately mitigates for impacts associated with the bridge project authorized herein.

- D. **Climate Change.** The Bay Plan Climate Change Policy 3 states in part: "...a risk assessment should be prepared by a qualified engineer and should be based on the estimated 100-year flood elevation that takes into account the best estimates of future sea level rise and current flood protection and planned flood protection that will be funded and constructed when needed to provide protection for the proposed project or shoreline area. A range of sea level rise projections for mid-century and end of century based on the best scientific data available should be used in the risk assessment. Inundation maps used for the risk assessment should be prepared under the direction of a qualified engineer. The risk assessment should identify all types of potential flooding, degrees of uncertainty, consequences of defense failure, and risks to existing habitat from proposed flood protection devices." Policy 4 states in part: "[t]o protect public safety and ecosystem services, within areas that a risk assessment determines are vulnerable to future shoreline flooding that threatens public safety, all projects—other than repairs of existing facilities, small projects that do not increase risks to public safety, interim projects and infill projects within existing urbanized areas—should be designed to be resilient to a mid-century sea level rise projection. If it is likely the project will remain in place longer than mid-century, an adaptive management plan should be developed to address the long-term impacts that will arise based on a risk assessment using the best available science-based projection for sea level rise at the end of the century." Policy 7 states in part: "[u]ntil a regional sea level rise adaptation strategy can be completed, the Commission should evaluate each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and capacity to adapt to climate change impacts. The following specific types of projects have regional benefits, advance regional goals, and should be encouraged, if their regional benefits and their advancement of regional goals outweigh the risk from flooding: a transportation facility, public utility or other critical infrastructure that is necessary for existing development or to serve planned development...."

The expected life of the replacement Bon Air Bridge is 75 years. The bridge deck and soffit will be shaped as a gentle arc to connect, at the northern and southern ends, with adjoining land areas where existing elevations will remain unchanged. The elevations along the new bridge deck range from 12.53 feet NAVD88, the lowest point at north end, to 18.14 feet NAVD88, the highest point at Bent No. 4. The elevations at the soffit range from 7.03 feet NAVD88, the lowest elevation at the northern end, to 12.64 feet NAVD88, the highest point at Bent No. 5.

In determining the effects of future creek levels at the bridge, the City's project engineer considered a combination of downstream conditions at the mouth of Corte Madera Creek—approximately two miles from the project site—and upstream conditions mostly related to fluvial or riverine forces. In addition, the following future sea level rise projections were taken into account: 16 inches (1.33 feet) NAVD88 in 2050, resulting in a projected tidal elevation of 9.15 NAVD88 at the replacement bridge, and 55 inches (4.58 feet) NAVD88 in 2100, resulting in a projected tidal elevation of 10.72 feet NAVD88 at the bridge.

Consequently, when water surface elevation reaches 9.15 NAVD88, the bridge deck and most of the soffit—except at the northern and southern ends, which will be located, respectively, at 7.03 and 7.55 feet NAVD88—will be located above water. Further, when water surface elevation reaches 10.72 feet NAVD88, the bridge deck will be located above water while the soffit's northern and southern ends, as well as the area at Bent No. 2 (located at 9.20 feet NAVD88) will be located below water.

To ensure that future submerged bridge elements remain resilient over time, as required in Special Condition II.K, the City will incorporate the following construction strategies: application of epoxy coating and concrete clear cover on all exposed steel, and use of stainless or galvanized steel on exposed structural steel to prevent corrosion; design bridge bents taking into account applicable water loads according to Caltrans standards, and the anticipated channel velocity and the possibility of accumulation of debris at the bents and superstructure during an extreme storm event; at each abutment, use vertical restrainers to prevent un-seating of the girders and bearing uplift during an extreme storm event; construction of the abutment bearings with steel reinforced elastomeric bearing pads, which do not have exposed moving parts; and use of an open railing system at the bridge deck to allow flood waters to pass through and over the roadway, if needed.

It is important to note that future periodic flooding is expected at the bridge roadway (Bon Air Bridge Drive) approaches located outside of the Commission's jurisdiction. Specifically, at the roadway located approximately 100 feet from the northern bridge end where the existing elevation is approximately 9.57 feet NAVD88, future flooding is expected. Similarly, at the roadway located approximately 100 feet from the southern bridge end, where the elevation is approximately 10.34 feet NAVD88, flooding is expected. The City of Larkspur is not currently planning to raise these roadway elevations, but is contemplating future protective measures, e.g. a floodwall system built along Corte Madera Creek.

The Commission finds that the bridge authorized herein, as conditioned, will remain resilient to future sea level rise and flooding and, thus, is consistent with its relevant law and policies.

- E. **Public Access and Appearance, Design and Scenic Views.** In assessing whether a project provides maximum feasible public access consistent with an activity, the Commission relies on the McAteer-Petris Act, Bay Plan policies, previous requirements of similar projects, and on relevant court decisions. In assessing whether a public project, such as

the City of Larkspur's, will provide the maximum feasible public access consistent with the project, the Commission also evaluates whether the access is reasonable given the scope of the project.

The McAteer-Petris Act Section 66602 states, in part, "...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." The Bay Plan Public Access Policy 1 states "[a] proposed fill project should increase public access to the Bay to the maximum extent feasible, in accordance with the policies for Public Access to the Bay." Policy 4 states, in part, "[p]ublic access should be sited, designed and managed to prevent significant adverse effects on wildlife." Policy 5 states, in part, "[p]ublic access should be sited, designed, managed and maintained to avoid significant adverse impacts from sea level rise and shoreline flooding." Policy 7 states, in part, "...improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier free access for persons with disabilities to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs." Policy 10 states, in part, "[t]he roadway...should provide for safe, separated, and improved physical access to and along the shore..." Policy 12 states, in part, "...[t]he Design Review Board should advise the Commission regarding the adequacy of the public access proposed."

The Bay Plan Transportation Policy 4 states, in part, "bridges over...certain waterways should include pedestrian and bicycle paths that will either be a part of the Bay Trail or connect the Bay Trail with other regional and community trails."

The Bay Plan Appearance, Design, and Scenic Views Policy 6 also states, in part, "[n]ew or remodeled bridges...should be designed to permit maximum viewing of the Bay and its surroundings by both motorists and pedestrians. Guard rails and bridge supports should be designed with views in mind."

According to the City, aside from the design needing to achieve seismic stability and resilience against the salinity of the creek, it is also intended to meet the local community's aesthetic recommendations including: the creation of a seamless connection to nearby multi-use paths; the use of aesthetic treatments on the sides of the bridge; the use of light fixtures, which are short and project downward; and the retention of views of surrounding hills.

The bridge is designed with ADA-compliant, seven-foot-wide bike lanes and 10-foot-wide sidewalks traveling in both directions. At the northern end of the bridge, the bike paths and sidewalks will connect to: a multi-use path traveling west adjacent to Corte Madera Creek; a multi-use path traveling along northwest side of Bon Air Drive; and a bike lane traveling west at South Eliseo Drive, which ultimately connects to the San Francisco Bay Trail near the intersection of Sir Francis Drake Boulevard and Highway 101. At the southern end of the bridge, the bike paths and sidewalks will connect to a multi-use path traveling along the west side of Bon Air Drive and a bike lane at Bon Air Drive, both intersecting with Magnolia Avenue. Special Condition II.D requires the City

to construct public access improvements that comply with the accessibility requirements of the California Building Code, and provide a connection to off-bridge bicycle pathways and sidewalks.

A 46.5-inch-high barrier will separate the on-bridge bike lanes from adjacent vehicle lanes. Outer bridge railings to be constructed no higher than 42 to 44 inches and are designed to preserve views of the creek for those traveling on the bridge. The City will install signage at the bridge to aid users of the bike paths and sidewalks. Lighting fixtures on the bridge will illuminate the bike paths and sidewalks, and are designed to minimize effects of lighting on wildlife and ensure safe conditions for pathway users. The City of Larkspur will maintain the public bike paths, sidewalks, and associated facilities. Special Condition II.D requires: outer bridge railings not to exceed 42 to 44 inches in height to preserve views; lighting standards be designed to minimize impacts to wildlife and ensure safe conditions for bridge visitors; public access signage be installed on the bridge, and on-going maintenance of the access improvements by the City.

As previously discussed, over the life of the project authorized herein, when water levels are expected to reach elevations up to 10.34 feet NAVD88, the bridge deck with the bike path and sidewalks will remain above flood levels. At the roadway located approximately 100 feet from the northern bridge end, where the existing elevation is (and will remain) approximately 9.57 feet NAVD88, and, at the roadway located approximately 100 feet from the southern bridge end, where the elevation is (and would remain) 10.34 feet NAVD88, projected mid-century and end-of-century flood conditions are expected to affect bridge approaches and, hence, off-bridge accessways to the bridge bike paths and sidewalks. According to the City, at that time, the possible design and implementation of a creek-wide program to protect such areas from flooding or raise existing elevations may occur to address this issue. These areas, however, are located outside the Commission's jurisdiction, and, at this time, addressing this particular issue is not part of the City's planned work.

The City states that the replacement bridge will be more attractive than the existing one and will take maximum advantage of the setting. The new bridge will be constructed with eight piers in Corte Madera Creek, which will be slightly bulkier than existing bridge columns but significantly fewer in number and will, hence, enhance the watershed views for visitors adjacent to and at the creek. The bridge will also include railings that provide greater transparency than the existing railings, and lighting on the bridge will be improved.

On December 10, 2012, the Commission's Design Review Board (DRB) reviewed the project during its design phase and requested that the City return for a second review with additional information concerning: the effects of bridge lighting on wildlife in the creek, and the lighting's capacity to ensure safe conditions for pedestrians and cyclists; the design of bridge railings and associated visual impacts; the off-bridge bike and pedestrian connections; and the amount of under-bridge clearance for non-motorized boats in light of future flooding conditions. On February 11, 2013, the City returned to

the DRB. During the second review, regarding the effects of lighting on Bay resources, the City stated that the “acorn-style lights” meet the International Dark Sky Association’s standards thereby minimizing light pollution on resources and also meeting national lighting safety criteria for pedestrians and bikes. The City also presented a revised barrier design with a reduced height—from 54 inches to 42 inches—to increase visibility of Corte Madera Creek for all users of the bridge. Further, the City clarified how the on-bridge bike lanes and sidewalks will connect to pathways located at the bridge ends. Lastly, it was stated that non-motorized boats will continue to have under-bridge access at the structure’s center point with clearance becoming more restricted when water levels reach 10.72 feet NAVD88; at that time, approximately two feet of under-bridge clearance will be possible. Special Condition II.D requires the City to implement public access improvements that comply with the DRB’s advice and, further, requires the City to offset restricted under-bridge access for non-motorized boats by implementing ADA upgrades at nearby public dock facilities.

In terms of public access, the bridge compares favorably to other bridges the Commission has authorized. In July 2014, the Commission issued Permit No. 2013.008.00 for the construction of an approximately 4,900-square-foot bridge at a certain waterway in the City of Fremont, which included two sidewalks (9.5 and 5.5 feet wide) and two 5.0-foot-wide Class II bike lanes. In 2007, the Commission issued Permit No. 2007.002.00 for reconstructing a 27,500-square-foot bridge at Lake Merritt Channel, which resulted in about 11,000 square feet of net fill in the Bay. The public access provided on the bridge included a five-foot-wide sidewalk and a twelve-foot-wide multi-use path, and, off the bridge, two six-foot-wide bike lanes approaching the bridge. By comparison, the bridge authorized herein, resulting in approximately 4,800 square feet of net fill in a certain waterway, will include two, ADA-compliant seven-foot-wide bike lanes and two 10-foot-wide sidewalks providing connections to off-bridge bike and pedestrian facilities. Further, the project will improve nearby public docks.

The Commission finds that, as conditioned, the project provides the maximum feasible public access consistent with the project, and that the access improvements required herein are reasonable given the scope of the project, are consistent with the Bay Plan’s appearance, design, and scenic views, and are designed to avoid impacts of future flooding.

- F. **Navigation.** Navigational Safety and Oil Spill Prevention Policy 1 states, in part, “[p]hysical obstructions to safe navigation, as identified by the U.S. Coast Guard [USCG] and the Harbor Safety Committee of the San Francisco Bay Region, should be removed to the maximum extent feasible when their removal would contribute to navigational safety and would not create significant adverse environmental impacts. Removal of obstructions should ensure that any detriments arising from a significant alteration of Bay habitats are clearly outweighed by the public and environmental benefits of reducing the risk to human safety or the risk of spills of hazardous materials, such as oil.”

The City of Larkspur received approval from the USCG under the federal General Bridge Act of 1946, which requires approval of location and plans for bridges prior to construction. The USCG found that the subject waterway is considered “navigable, but not actually navigated by other than logs, log rafts, rowboats, canoes, and small motor-boats. In such cases, the [proposed] clearances provided for high water stages will be considered adequate to meet the reasonable needs of navigation.”

The Commission finds that the project will ensure safe conditions to navigate Corte Madera Creek.

G. Review Boards

1. **Engineering Criteria Review Board (ECRB).** The Commission’s Engineering Criteria Review Board (ECRB) reviewed the project on December 5, 2012. The results of the review are summarized in Section B.4, above.
2. **Design Review Board (DRB).** The Commission’s DRB reviewed the project on December 10, 2012, and on February 11, 2013. The results of both reviews are summarized in Section E., above.

- H. **Compliance with the California Environmental Act/CEQA Findings.** Pursuant to California Environmental Quality Act (CEQA), the City of Larkspur approved a mitigated negative declaration (MND) on August 1, 2012. The City’s MND evaluated the potential impacts of constructing the replacement bridge, and included mitigation measures to reduce such impacts to “less-than-significant” levels, including measures to restore temporarily and permanently impacted tidal wetland vegetation and to protect special-listed species. Since federal funds from the Federal Highway Administration will be partly used to construct the bridge, compliance with the National Environmental Policy Act (NEPA) is also required. Caltrans is acting as the federal lead agency under NEPA. NEPA approval, in the form of a Categorical Exclusion, was issued on May 15, 2012.

On October 8, 2014, the City of Larkspur issued and certified a supplement to the MND to cover activities that were not addressed in the MND adopted in August 2012, including the temporary cofferdams associated with bridge construction and the installation of the telecommunication line under Corte Madera Creek. In certifying the supplemental declaration, the City found that these activities were “minor technical additions” to the original project that were identified with refinement of project design. Further, the City declared that the activities will not cause “significant new environmental effects” or substantially increase the effects of the original project for which mitigation measures were previously identified.

- I. **Coastal Zone Management Act.** The Commission further finds, declares, and certifies that the activities authorized herein are consistent with the Commission’s Amended Management Program for San Francisco Bay, as approved by the Department of Commerce under the Federal Coastal Zone Management Act of 1972, as amended.

- J. **Conclusion.** For all the above reasons, the Commission finds, declares, and certifies that, subject to the Special Conditions stated herein, the project authorized herein is consistent with the *San Francisco Bay Plan*, the McAteer-Petris Act, the California Environmental Quality Act, 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 permit shall not take effect unless the permittee executes the original of this permit and returns it to the Commission within ten days after the date of the issuance of the permit. No work shall be done until the acknowledgment is duly executed and returned to the Commission.
- B. **Certification of Contractor Review.** Prior to commencing construction authorized herein, the general contractor or contractors in charge of such work within the Commission's jurisdiction shall submit written certification that s/he has reviewed and understands the requirements of the permit and any final plans subject to BCDC approval.
- C. **Notice of Commencement.** The attached Notice of Commencement shall be submitted to the Commission within 30 days of commencing any portion of the project authorized herein.
- D. **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.
- E. **Permit Runs With the Land.** Unless otherwise provided in this permit, the terms and conditions of this permit shall bind all future owners and future possessors of any legal interest in the land and shall run with the land.
- F. **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 permit does not relieve the permittee of any obligations imposed by State or Federal law, either statutory or otherwise.
- G. **Built Project Consistent with Permit 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 permit and any plans approved in writing by or on behalf of the Commission.
- H. **Life of Authorization.** Unless otherwise provided in this permit, all the terms and conditions of this 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 permit exists, whichever is longer.

- I. **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 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 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 permit, subject to tidal action shall become subject to the Commission's "bay" jurisdiction.
- J. **Changes to the Commission's Jurisdiction as a Result of Natural Processes.** This 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 permit does not guarantee that the Commission's jurisdiction will not change in the future.
- K. **Violation of Permit May Lead to Permit Revocation.** Except as otherwise noted, violation of any of the terms of this 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 assignees if the permit has been effectively assigned. If the permit is revoked, the Commission may determine, if it deems appropriate, that all or part of any fill or structure placed pursuant to this permit shall be removed by the permittee or their assignees if the permit has been assigned.
- L. **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 permit shall be found illegal or unenforceable through the application of statute, administrative ruling, or court determination. If this 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 assignees if the 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.
- M. **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.
- N. **Best Management Practices**
 1. **Debris Removal.** All construction debris shall be removed to an authorized 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 assigns, or successors in interest, or the owner of the improvements, shall remove such material, at their expense, within ten days after they have been notified by the Executive Director of such placement.

2. **Construction Operations.** All construction operations shall be performed to prevent construction materials from falling, washing or blowing 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.
- O. **Permit Assignment.** Prior to entering into any agreement to transfer any interest in any property subject to this permit, the permittee or any assignees of this permit or any part of it, shall provide the third party with a copy of this permit and shall call their attention to any provisions regarding public access or need to obtain further Commission approval related to any activities authorized herein. No more than ten days after transferring any interest in any property subject to this permit to another party, the transferors shall: (a) notify the Commission of the nature of the transfer, the name, address, and telephone number of the transferee, and the effective date of the transfer; and (b) shall submit an assignment of this permit for the area transferred that has been executed by the transferor and the transferee and that indicates that the transferor has transferred the permit as it applies to the property that was transferred and that the transferee has read, understood, and has agreed to be bound by the terms and conditions of this permit.
- P. **Abandonment.** If, at any time, the Commission determines that the improvements in the Bay authorized herein have been abandoned for a period of two years or more, or have deteriorated to the point that public health, safety or welfare is adversely affected, the Commission may require that the improvements be removed by the permittee, its assignees or successors in interest, or by the owner of the improvements, within 60 days or such other reasonable time as the Commission may direct.
- Q. **Certificate of Use.** Prior to use of any of the improvements authorized herein, the permittee shall submit the Notice of Completion and Compliance required herein and request in writing an inspection of the project site by the Commission staff. Within 30 days of receipt of the written request for an inspection, the Commission staff will: (1) review all permit conditions; (2) inspect the project site; and (3) provide the permittee with written notification of all outstanding permit compliance issues, if any. The permittee shall not occupy or make use of any improvements authorized herein until the Commission staff has confirmed that the identified permittee compliance issues have been satisfactorily resolved and has provided the permittee with a Certificate of Use. Failure by the Commission staff to perform such review and inspection and notify the permittee of any deficiencies of the project within this 30-day period shall not deem the project to be in compliance with the permit, but the permittee may use the improvements authorized herein.
- R. **General Maintenance.** All maintenance of facilities authorized herein shall constitute in-kind work only and shall not result in an expansion of the Bay volume or footprint of the project or fill authorized herein.
- S. **Recording.** The permittee shall record this permit on all parcels affected by this permit with Marin County within 30 days after execution of the permit issued pursuant to this authorization and shall, within 30 days after recordation, provide the original recordation to the Commission.