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## San Francisco Bay Regional Water Quality Control Board

July 24, 2014  
CIWQS Place No. 757384(MB)

Sent via electronic mail to [Len@sfjcipa.org](mailto:Len@sfjcipa.org): no hardcopy to follow

Len Materman, Executive Director  
San Francisco Creek Joint Powers Authority  
615 B Menlo Ave.  
Menlo Park, CA 94025

**Subject: Application for Water Quality Certification for San Francisquito Creek Project, Santa Clara and San Mateo Counties**

Dear Mr. Materman:

This letter is intended to assist the San Francisquito Creek Joint Powers Authority (JPA) in preparing a complete application for a CWA § 401 water quality certification (Certification) for its San Francisquito Creek Project (Project) so that we can expeditiously act on the application. This letter provides a description of information that is requested of applicants that propose projects in creek channels and elaborates on the guidance we provided to the JPA in our February 27, 2014, letter.

Before we can act on an application to certify the Project, State regulations require us to post a complete application for public comment for 21 days. Further, since we plan to hold a public workshop on the Project as part of the August 13 Board meeting, we must post the application at least 10 days before the workshop. Therefore, we request that you submit the application no later than July 31, 2014. Please note that we may request supplemental information to complete the application once we review it. While the request for supplemental information would not delay the August 13 workshop, we still must post the supplemental information for 21 days before acting on the application. Thus, it is in all parties' best interests for the JPA to submit a complete application by July 31.

The JPA may submit its application using the application form located on our website (<http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>). A Rapid Permit Assessment Checklist (Checklist) is also located on our website (link above) and provides additional guidance for preparation of a complete permit application that will facilitate timely review and approval of the Project's application. The JPA may reference information from its initial application for certification but only if that information has not been changed or revised since submittal of the initial application or the submittal of supplemental information to that application. Any information that has changed or been revised must be described in detail in the new application.

The application must describe the Project's proposed changes to the environment, including changes to sediment transport and deposition within the creek, and corresponding potential adverse impacts such as causing erosion of the creek's bed and banks. It should also describe the potential for the Project to increase the creek's water temperature and impact aquatic

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habitat for steelhead and other rare and endangered species, including impacts to the riparian plant community. We review all of these potential Project impacts to assess the extent to which the Project as proposed will comply with the water quality standards specified in the San Francisco Bay Water Quality Control Plan (Basin Plan). Evaluating the channel hydraulics of the proposed Project is important because San Francisquito Creek is federally listed as impaired due to excess sedimentation, and due to the Project's potential to impact the excellent breeding habitat for the federally-listed California clapper rail, which currently exists in the Faber Tract Marsh adjacent to San Francisquito Creek.

So that we can expediently complete the Certification with conditions appropriate for the Project, the JPA must include in its application a detailed description of the following Project elements:

1. Provide a detailed description of the watershed and an evaluation of local influences on the channel at the Project site and future conditions of the channel that are proposed by the Project. Provide an assessment as to (a) whether or not the channel is experiencing excessive erosion or sediment deposition; (b) whether or not the channel is experiencing headcutting; (c) whether or not the channel shows signs of attempts to develop meanders; (d) and whether the channel banks have sufficient vegetative cover to provide stabilization of the channel at the Project site.
2. Provide an evaluation of the sediment discharge balance of the watershed and if the Project may improve or destabilize sediment equilibrium in the watershed. In assessing the potential impacts of the Project, the JPA should determine how the Project as proposed will function to capture additional sediment as the watershed's hydrology is modified upstream by future flood control projects that will deliver more discharges and sediment to the lower reaches of San Francisquito Creek. The Project design should have sufficient flexibility to accept more sediment from the Searsville Dam portion of the watershed, as the dam is either removed or modified in the future, and/or as water spills from the presently mostly full reservoir to the downstream portion for the watershed. As the Project is located at the lowest end of the watershed with lower gradient, it may provide a significant sediment storage function, and the Project's design must anticipate this storage function. In order to accommodate this future sediment storage function, the basis of design for the Project must address both its marsh plain features and, potentially, its floodplain features for accumulating sediment.
3. San Francisquito Creek is a significant steelhead watercourse. Accordingly, the application must include an evaluation of how the Project may affect steelhead migration in low and high water scenarios. The JPA's initial application was silent on the needs for steelhead migration except for avoidance of impacts during construction. The potential need for high velocity refuges, channel shading, or other habitat needs still needs to be described in the application and coordinated with the California Department of Fish and Wildlife (CDFW) and the U.S. National Marine Fisheries Service (NMFS).
4. In January 2014, we expressed concern that the Project calls for "excavating sediment in the existing channel to maximize conveyance." The Project as proposed at that time would create a new low flow channel below existing grade from station 44+00 to 55+00 (a distance of over a thousand feet). The current channel is most likely "graded" or stable at its current elevation. One of the greatest engineering legacy errors in Bay Area flood control designs is to design a channel gradient that is not sustainable. Selecting geomorphically-appropriate dimensions and elevations for a channel are critical to attaining effective sediment transport and sustaining the design channel capacity. The application must describe the basis of any proposed low flow channel designs below existing grade, such as was proposed between stations 44+00 to 55+00.

The Checklist contains a series of questions on the basis of design for channel features, including a low flow channel, a marsh plain, and/or other terraces. The application should include cross-sections with elevations and profiles of the low flow channel, marsh plain, and floodplain. The elevation changes over distance help to inform the development of feasible creek channel revegetation projects.

5. The application should describe the expected low as well as high flows for the 2-, 5-, 10-, 50-, and 100-year recurrence intervals. This information is necessary to determine conditions for fish migration as well as plant establishment. Depths of flow should be provided in cross-sections for the different recurrence intervals. These depths of flow, along with channel slopes, are then used to compute shear stress in pounds per square foot. Shear stress can be an output provided by the HEC-RAS model being used. Both velocities and shear stress values at these different flows should be provided to determine the basis for vegetative or rock cover of the levee side slopes. This information is also necessary for NMFS and CDFW to evaluate potential Project impacts and design features necessary for steelhead.
6. The JPA has submitted a geotechnical analysis that evaluates the potential for levee settling and addresses both "primary and secondary" settlement projections for the levees underlain by soft compressible bay mud. The analysis is focused on the Palo Alto Golf Course levee and estimates a short term or primary settlement of 18 inches over approximately two years. The East Palo Alto levee only discusses a long term "secondary" compression. We assume there will be a newly aligned levee constructed on the East Palo Alto side and that both short and long term levee subsidence would be part of the design considerations. The application should provide a detailed geotechnical analysis for the East Palo Alto levee including "primary and secondary" settlement projections.
7. Some of the Project's features have changed since the initial application. The new application should include a complete detailed description of the proposed channel dimensions of each Project feature including the total size (in acres), length (in feet) where appropriate, type, and description of the entire Project area, including areas outside of waters of the State. This description shall include channel dimensions for each Project feature including, but not limited to, (a) channel bed and bank; (b) channel slope; (c) levee heights and slope; and (d) levee widths (top and base).
8. For each habitat type impacted by the Project, provide the total estimated quantity (both in linear feet and acres) of waters of the State that may be adversely impacted temporarily or permanently by a discharge or by dredging. This should also include the quantity of waters to be impacted by any dredging or fill activities in cubic yards. Provide a map and figures to scale identifying the location, dimensions (in acres, linear feet, height, width) for each project feature.
9. Mitigation and Monitoring Plan (MMP): The application must include a detailed alternatives analysis describing how impacts to waters of the State will be avoided and minimized. The MMP must include a detailed description of compensatory mitigation for unavoidable impacts to waters of the State. The proposed mitigation must meet the goals of the California Wetlands Conservation Policy (Executive Order W-59-93; No Net Loss Policy; as described in Section 4.23.4 of the Basin Plan) to achieve no net loss and a long-term net gain the quality and quantity of stream and wetland resources. The Regional Water Board considers the following factors in determining the amount and type of mitigation required: (a) the type of compensatory mitigation (e.g., whether the mitigation is in-kind and/or onsite); (2) comparison of the aquatic resource functions lost at the impact site and the functions

expected to be provided by the mitigation project; (3) temporal losses of aquatic resource functions (i.e., functions lost due to the passage of time between loss of the impacted aquatic resource and creation/restoration of the full-functioning mitigation); and (4) the difficulty, uncertainty, and likelihood of success of mitigation. The MMP, at a minimum, must include methods for restoring and enhancing tidal marsh habitat, reestablishing native riparian vegetation, removing invasive plant species, and success criteria and monitoring methods based on the following:

- a. Tidal Marsh Habitat and Riparian Re-vegetation: The JPA's recent Project design materials describe the creation of new high marsh next to the channel and a "transition marsh" further from the channel. Earlier application materials described the creation/enhancement of new high marsh of 5 species next the channel and a "transition marsh" of 8 transition marsh species further from the channel. Most existing riparian trees are proposed for removal from the site and some mitigation riparian plantings in the southwest portion of the Project are impacted.

The MMP should describe (1) Project environmental conditions appropriate to support the proposed marsh habitats; (2) appropriate elevations for (a) low marsh habitats, which occur from approximately mean sea level to mean high water; (b) middle marsh habitats, which occur from approximately mean high water to mean higher, and (c) high marsh habitat and water zones, which occur near and above mean, higher, high water. Elevations for these zones should typically be shown on the design plans and in cross-sections. This level of detail is critical for assuring success for a marsh creation objective because the plant species must be carefully matched with their elevations in the marsh.

- b. The MMP should identify impacts to each habitat type and describe the methods and location in which each impacted habitat type will be compensated through preserved, enhanced, created, or restored mitigation habitat (habitat enhancement is generally required to compensate for temporary impacts, while habitat creation/restoration is required to offset permanent impacts to wetland habitat).
- c. The total quantity (in acres and linear feet) of mitigation habitat, by habitat type proposed to be preserved, enhanced, created, or restored should be described. If compensatory mitigation is to be provided in some other form, that must be explained. The MMP must also include drawings identifying the location of each habitat type to be preserved, enhanced, created or restored, and identify elevation markers appropriate for each habitat type and location.
- d. To determine whether a site provides appropriate conditions for passive re-establishment of tidal areas, a sediment budget for the site needs to be created to ensure that appropriate marsh elevations will be maintained during the plant establishment period and the foreseeable future. This sediment budget will need to include both fluvial and offshore sediment inputs and include an evaluation of erosion due to fluvial shear stresses. There is a threshold value for suspended sediment to sustain tidal marsh types. The upland transition plant community requires active restoration work and the proposed plan should address the 30 species in use in restoration as well as the use of seeding techniques. The fluvial system can build the high marsh with alluvium. Given the likelihood that more sediment will be transported downstream, it would be prudent to address the possibility of providing for a floodplain above the marsh plain. NMFS and CDFW should be consulted regarding what the planting plan should provide and the recommended species from the fisheries perspective.

- e. **Monitoring Methods:** The MMP should also describe proposed monitoring methods, including, but not limited to, (1) an assessment of hydric soil indicators annually for five years at a minimum of six locations within the restored areas, (2) an assessment of sediment deposition and erosion annually for five years, measured with topographic surveys at permanently established transects at a 100-meter interval, (3) an assessment of channel morphology in each re-established or re-habilitated tidal channel annually for five years, measured with topographic surveys at the channel mouth and every 100 meters upstream, (4) a qualitative hydrologic assessment of the restored and enhanced tidal marsh habitat annually for five years to determine the presence of unobstructed versus restricted exchange of tidal waters, and (5) a Corps-verified wetland delineation in Year 5 to confirm that the mitigation acreage and success criteria requirements have been met.

Monitoring should include a combination of photo documentation from at least six fixed points and estimations of absolute cover using transects, quadrants, or another quantitative method. Performance criteria should include minimum cover of native riparian vegetation and maximum cover of highly invasive non-native species listed in Tier 1 of the Regional Water Board's Fact Sheet for Wetland Projects. The Fact Sheet can be obtained at <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml> or by contacting Regional Water Board staff at (510) 622-2300.

10. **Maintenance Plan:** The Regional Water Board typically requires a long-term maintenance plan as a condition of certification. The maintenance plan is as much a part of the Project's design as the features constructed by the Project, since maintenance activities may have significant impact on aquatic habitat and the species that rely on that habitat. Based on our review of the channel dimensions previously proposed, the lower channel invert would quickly become filled with sediment and require regular maintenance dredging to maintain the channel design capacity. Rather than committing the JPA to ongoing channel dredging, Regional Water Board staff encourage the JPA to revise the design floodplain elevations to be set at higher elevations, so that sediment deposition can occur over time. This design revision would avoid regular, environmentally disruptive and expensive maintenance dredging. Since the Project is located in two counties, the specific parties responsible for maintenance should be identified.
11. The application should address water quality impacts related to urban stormwater runoff into the creek and the adjacent Faber Tract Marsh habitats. Increase in flow would also increase the loads of urban runoff pollutants, such as trash, pathogens, heavy metals, pesticides, petroleum hydrocarbons, fertilizers, and other pollutants of concern, into sensitive endangered species marsh habitat. The application should include a proposal to implement effective measures designed to improve water quality both upstream and within the Project reach by reusing, detaining, infiltrating, and treating urban runoff.

If you have any questions, please contact me at 510-622-2314 or ([bwolfe@waterboards.ca.gov](mailto:bwolfe@waterboards.ca.gov)) or Maggie Beth at 510-622-2338 or ([mabeth@waterboards.ca.gov](mailto:mabeth@waterboards.ca.gov)).

Sincerely,

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Executive Officer

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