



San Francisco Bay Regional Water Quality Control Board

August 29, 2014
CIWQS Place No. 757384(MB)

Sent via electronic mail to Len@JPA.org: no hardcopy to follow

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

Subject: Incomplete Application for Water Quality Certification for San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project, Santa Clara and San Mateo Counties

Dear Mr. Materman:

San Francisco Bay Regional Water Quality Control Board (Regional Water Board) staff has reviewed the application for Clean Water Act (CWA) § 401 water quality certification submitted on July 31, 2014 (Application), by the San Francisquito Creek Joints Powers Authority (JPA) for the proposed San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project (Project). The Project as described in the Application proposes to increase flood flow capacity to contain the one percent rain event by (1) excavating sediment deposits within the channel; (2) constructing flood walls (upper reach); (3) setting back existing levees up to 125' and adjusting levee heights for consistent flood capacity elevations; (4) raising and grading a section of the levee between the creek and Faber Tract marsh; (5) removing the Bay levee located at the mouth of the creek; and (6) planting marsh vegetation. Additional activities proposed include constructing a boardwalk from the existing Friendship Bridge; re-locating some of the existing utility towers, one of which will be located within the creek post-project; and installing rock riprap in specific areas of the creek.

On July 24, 2014, I sent a letter (attached) to the JPA describing specific information that must be included in the JPA's next application in order for the Regional Water Board staff to assess the extent to which the Project as proposed would comply with the water quality standards specified in the San Francisco Bay Water Quality Control Plan (Basin Plan) and to expeditiously act on that application. The JPA provided in the Application much of the information described in the July 24 letter. However, the Application is incomplete and does not include sufficient information for the Regional Water Board to certify that the Project will not violate State water quality standards pursuant to CWA § 401. Additionally, the Project proposal as described in the application materials may not comply with State and Regional Water Board policies.

Summary of Information Required for a Complete 401 Certification Application and Request for Additional Information

In its present form, the Application is incomplete and lacks sufficient information related to sediment budget and transport, project design, project details, mitigation and monitoring, operation and maintenance, and CEQA. Also, since the Application was posted for public comment during the period of August 1 through August 22, 2014, we have received many letters commenting on the Project as proposed in the Application. The Application does not provide sufficient information to address all

DR. TERRY F. YOUNG, CHAIR | BRUCE H. WOLFE, EXECUTIVE OFFICER

comment letters. Below is a summary of additional information needed to complete the Application and to allow us to respond to comments. Further detail is provided after this summary.

1. Sediment Budget, Transport, and Deposition: Analyze sediment budget, transport, and deposition from upstream existing and potential future sources as well as from the Bay within the Project reach. This directly affects the long-term performance of flood conveyance capacity, habitat and species protection, and future maintenance needs.
2. Project Design:
 - a. The Application indicates that the Project incorporates a significant portion of the Palo Alto Golf Course Re-configuration Project, and the design of one project affects the design of the other project. The Application must include a discussion of cumulative impacts to sensitive habitats and endangered species associated with both projects together.
 - b. The Application should demonstrate that the Project is designed so as to not preclude any flood control options upstream of Hwy 101.
 - c. Levee Design:
 - i. Quantify the amount of primary settlement on East Palo Alto side of levee to support the overbuild of 1 foot along the new levee protecting the Palo Alto Golf Course and 1/2 foot along the modified levee protecting East Palo Alto.
 - ii. Provide supporting documentation demonstrating adequate levee heights, settlement rates, and future monitoring to verify the technical assumptions used in predicting the primary settlement on the Palo Alto and East Palo Alto levees.
 - d. Floodwall Design: The floodwall design should be modified to ensure the highest level of flood protection for East Palo Alto and Palo Alto and ensure the potential availability of the golf course for flood flow detention.
 - e. Channel Modifications and Endangered Species
Provide the National Marine Fisheries Service (NMFS) with technical information to review the Project for protection of endangered species within its purview.
 - f. The JPA must coordinate with the resource agencies and other organizations regarding the Faber Tract levee and Bay levee to ensure they meet the overall goals of the Project while protecting the environment and endangered species. Include the Rapid Permit Assessment Checklist, which was not included in Appendix G of the Application.
3. Project Description Details
 - a. Provide a full detailed description of dredge and fill information in linear feet and acres.
 - b. Provide a full detailed description of impacts by habitat type in linear feet and acres.
 - c. Provide more details on the specific locations of rock slope protection and associated vegetation planting.
 - d. Provide more details on the dewatering and water quality monitoring plan.
4. Mitigation and Monitoring Plan
 - a. Propose sufficient mitigation for impacts to waters of the State consistent with the Basin Plan and the goals of the No Net Loss Policy.
 - b. Describe the proposed mitigation by type (e.g., creation, restoration, and enhancement),
 - c. Provide a tidal marsh habitat plan

- d. Provide a riparian habitat re-vegetation plan
 - e. Provide a monitoring plan
5. Operation and Maintenance
- a. Identify responsible party(ies) to implement maintenance
 - b. Explain why maintenance activities will not be conducted under the District's SMP.
 - c. Describe maintenance activities and associated impacts and protective measures in sensitive habitats with endangered species; and mitigation areas.
6. CEQA: Additional CEQA analysis may be necessary due to changes in the Project design such as the Bay Levee Degrade element.

Specific Comments on the Application

Sediment Budget, Transportation and Deposition

The Application includes several reports in Appendix H that contain interesting watershed information characterizing the sediment regime for the watershed, which was one of our information requests. However, the appended reports do not inform or provide an adequate basis for the Project's design nor do the reports indicate that sediment transport has been incorporated into the design.

The reports do provide a context for the fact that the lower watershed is located on an alluvial fan and has been and will continue to be a depositional environment and that upper watershed changes will change the sediment regime in the Project area. Moffitt and Nichols Engineers' 2003 report states that, if the present period of high sediment contributions are made from the upper watershed and that when the Searsville reservoir fills, and/or the dam is lowered, the bedload and total sediment load to the Project area will presumably more than double over current conditions. The reports state that current aggradation in the tidal area of the Project will continue and/or increase. This theme is repeated in Northwest Hydraulics' 2004 and 2011 reports. The 2004 report projects an annual increase in coarse sediment delivery to the delta of the creek after sediment trapping behind Searsville Dam is reduced (the delta is illustrated in the figure as the golf course) to 12,500 cubic yards from an existing 2,300 yards deposition rate. The reports indicate sediment was deposited in the delta during the 1982 and 1998 floods and added about a foot in this area of the Project. Continued aggradation and raised flood levels of 0.5 to 1.0 feet can be expected with changes to Searsville Dam.

We recognize that there is no certainty in how or when Searsville Dam will be changed. However, the Application indicates that one of the Project's goals is to accommodate future flood protection measures that might be constructed upstream of the Project. As such, the Project's design should demonstrate that it anticipate changes to Searsville Dam.

Even if the Project design does not consider these expected future conditions (i.e., sediment will increase downstream either by over topping the current dam that is almost full or by increasing discharges by lowering or removing the dam) and is only designed based on current conditions, the Application must still provide a plan for the delta to continue to aggrade with flooding. The Project footprint as proposed widens the area between the levees and lowers the elevation of the marshplain-floodplain; these features alone would put the Project at risk for encouraging more sedimentation than current conditions. The Application's position that only fines are transported to this area and that these fines will all wash to the Bay on large flood flows conflicts with the information we have received on other marshplain-fluvial systems around the Bay. Fines and coarse material do get trapped in cohesive bay muds that form part of the sediment regime coming from the Bay in these tidal environments. The hardened, cohesive bay muds can form blockages of fluvial sediments, which fall

out behind them. Another overlooked part of this design is the need to take into consideration the deposition that occurs at the more frequent low and moderate flows. To use levees and floodwall height as the fall-back position for accepting more sediment is not appropriate because this means that when levee freeboard is reduced, the JPA will be obligated to do frequent maintenance dredging, which both greatly disrupts the environment and is costly to the JPA.

Many flood management agencies around the Bay would find that the sediment transport modeling and information available today is beneficial to inform pre-project design and to minimize their maintenance challenges in these tidal-fluvial systems. The current standard set for contemporary flood control project design is contained in the manuals of the Army Corps of Engineers and NRCS. The design manuals warn against project design using only hydraulics and not integrating sediment transport representing the projected performance of the channel at different flow scenarios.

For a project investing as much as \$37 million, it is appropriate to incorporate sediment transport as a function of the design. The NRC reports in the appendices of the Application indicate that sediment rating curves have been developed by other entities over time for the watershed, and, therefore, important groundwork for the sediment transport modeling is available to the JPA. The JPA must include in the Application a sediment budget and transport analysis that addresses sediment deposition and transport from upstream existing and potential future sources as well as from the Bay within the Project's reach.

Project Design

1. The Application indicates that the Project incorporates a significant portion of the Palo Alto Golf Course Re-configuration Project, and the design of one project affects the design of the other project. As such, the projects should be evaluated as one dependent project in the Application. It is difficult to understand and determine cumulative impacts from project activities that overlap and/or are directly related when presented as separate and independent projects. The Application must include a discussion of cumulative impacts to sensitive habitats and endangered species associated with both projects together.
2. The Application should demonstrate that the Project is designed so as to not preclude any flood control options upstream of Hwy 101.
3. Levee Design
 - a. Quantify the amount of primary settlement on the East Palo Alto levee to support the overbuild of 1 foot along the new levee protecting the Palo Alto Golf Course and 1/2 foot along the modified levee protecting East Palo Alto. If the Draft 100% design plans included in the Application reflect the May 2012 GEI/HDR Geotechnical report, then the levee design needs to be modified in accordance with the final geotechnical report of June 30, 2014 (Appendix H), also included in the Application.
 - b. The Application must include supporting documentation that the levee height is sufficient to protect East Palo Alto and Palo Alto. The Application should address settlement rates and potential flood events that would impact the surrounding communities.
 - c. The Application should address the situation that the new levee construction on the East Palo Alto side actually involves new construction on marsh ground for 50-60% of the structure's cross-section. Monitoring may or may not track non-uniform settling and provide the JPA with adequate time to repair or raise levees still undergoing compaction. Avoidance of emergency repairs during floods needs to be incorporated into the plan.
4. Floodwall design: The length of the floodwall on the golf course side of the creek extends further downstream than the floodwall on the East Palo Alto side. This appears to indicate a higher level of

flood protection is being proposed for the golf course and also precludes the potential use of the golf course as a flood flow detention basin. The Application should demonstrate that the floodwall design ensures the highest level of flood protection for human health and safety for East Palo Alto and Palo Alto and the potential availability of the golf course for flood flow detention.

5. Channel Modifications and Endangered Species:

- a. The Application should indicate how NMFS' requirements for endangered species have been integrated into the design. The JPA has clarified that the location of the low flow-tidal channel does not change the existing elevation. The HEC RAS model graph included in the Application may be useful to provide to NMFS to review velocity conditions at different flows. The Application should include a discussion of the modifications planned directly to the channel and the associated impacts and proposed protective measures related to endangered species under the jurisdiction of NMFS.
- b. Levees: Appendix D of the Application includes the final report on hydraulic evaluations of the project changes to the Faber Tract Marsh levee and degrade of the San Francisco Bay levee was negotiated between the U.S. Fish and Wildlife Service and the JPA. The JPA must coordinate with the resource agencies and other organizations on the two design elements to ensure they meet the overall goals of the Project while protecting the environment and endangered species.

Project Description Details

1. Application and Additional Pages

- a. The Application needs to separate out the temporary and permanent impacts for each activity/action proposed (i.e., levee, pavement, cut of floodplain bench, rock slope protection). The dredge and fill information provided should be revised. Column 1 Water Body Type should be organized by habitat types provided in the Wetland and Riparian Project Form. The description of each activity should be specific on what project impacts are considered temporary (e.g., staging area and construction activities) versus permanent (e.g., construction of levees and floodwalls).

The Application should also provide the total estimated linear feet of waters of the State that may be adversely impacted (i.e., the Application only provided impact totals in acres). In addition, the Application should include all temporary impacts to the channel and riparian area of San Francisquito Creek from construction activities, staging areas, etc. Application Appendices Figures 4.1-4.5 notes these impacts, but they are not included in Application Table 4, or Table 3 in the Mitigation and Monitoring Plan (MMP). Lastly, the MMP states, "Of impacts to diked marsh, 288 acres will be permanently lost in the Golf Course to move the existing levees to the south and provide a larger tidal floodplain (p. 18)." The 288 acres should be accounted for in Application Table 4 and MMP Table 3. This information is needed to determine that the Application has provided a full and accurate accounting of temporary and permanent impacts.

- b. Table 2: Include linear feet and acres for each Project element.

c. Table 4

- i. Include linear feet for both permanent and temporary impacts
- ii. Some line items in the table state "Reason for Action" but do not indicate associated impacts to that particular habitat. It should be clarified if the particular activity listed under "Reason for Action" will or will not result in a temporary or permanent impact to that particular habitat. For example, TSM-3 and TSM-11 show levee, RSP, and CFB work but

do not include any indication of impacts to tidal salt marsh habitat. The table should be revised to reflect all potential impacts.

- d. Rock Slope Protection (RSP) – Table 5
 - i. Describe all areas where RSP will be installed, including linear feet and dimensions of the rock slope protection feature. Indicate how much of rock will be buried, how much will be exposed, and how much of the exposed rock will have the 10-foot vegetation band.
 - ii. Table 5 should define and explain the relationship of the following terms to RSP:
 - 1. Additional Fill Volume
 - 2. Subsurface Volume
 - 3. Explain the difference between rock slope - 2ft / 3ft and levee toe rock or floodwall toe rock.
 - 4. Gravel - purpose and location
 - 5. Pavement - purpose and location
- e. Rock Slope Protection (RSP) – Continued
 - i. The Application states that 1.61 acres of RSP will be replaced with "vegetative levee protection and turf reinforcement mat that will provide soil stabilization and habitat improvements". The Design plans (L-1 through L-7) show zones of "high marsh transition planting", "high marsh planting", "erosion control seed mix", and "rock slope protection". The design plans do not indicate areas or zones where "vegetative levee protection and turf reinforcement mat" will be installed. Furthermore, the JPA had indicated many times that the RSP areas will have a 10-foot wide band of shrub vegetation planted. This should be indicated in the design plans. Please describe the "vegetative levee protection", "turf reinforcement mat", and "10-foot wide band of shrub vegetation," including, but not limited to, location and areal extent of each vegetative feature, plant species, number of plants, and plant spacing.
 - ii. The design plans show RSP within the area of Friendship Bridge and the proposed boardwalk and along the entire height of bank in select areas, which appears to be fairly extensive. The Application should demonstrate why the proposed amount of rock is hydraulically necessary at those locations.
- f. Dewatering Plan: The dewatering plan generally provides a good overview related to dewatering San Francisquito Creek. However, the dewatering plan needs to be revised to include the following information:
 - i. General Guidelines for Dewatering Plans
 - 1. All work performed within waters of the State shall be completed in a manner that meets the water quality objectives to ensure the protection of beneficial uses as specified in the Basin Plan.
 - 2. All dewatering methods shall be installed such that natural flow is maintained upstream and downstream of the project area.
 - 3. Any temporary dams or diversion shall be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the project area.
 - ii. The Plan should indicate that any changes to the approved plan that may have the potential to impact waters of the State must be acceptable to the Regional Water Board's Executive Officer.

- iii. Provide a description and design schematic of the proposed dewatering structure including, but not limited to, the following information:
 1. Dewatering method for the Project area: describe how water encroachment into the Project site from Bay tides, natural and urban runoff flows from upstream, outfalls near the East Bayshore Road bridge, discharge from the O'Connor Pump Station, and groundwater will be, diverted, monitored (for water quality), treated to meet water quality effluent limitations as specified in the Basin Plan, and discharged downstream of the Project site.
 2. Overtopping precautions
 3. Discharge locations (description and map)
 4. Upstream and downstream dewatering structures
 5. Start-up treatment location
- iv. Description of the dewatering schedule for construction and removal.
- v. Provide a description of water quality impact avoidance and minimization measures including, but not limited to, the following information:
 1. BMPs to meet water quality objectives
 2. cofferdams at the mouth of the creek
 3. tidal influences
- vi. Water quality monitoring plan including but not limited to, the following:
 1. Monitoring locations and frequencies including background (pre-, during-, and post-construction) and operational.
 2. Monitoring methods including visual observations, water quality sampling, and parameters. The plan only addresses treatment methods for turbidity.
 3. Monitoring of stockpiles.
 4. Description of the treatment of surface and groundwater to meet water quality objectives.
- vii. Protection of listed species (e.g., fish relocation, fish screens)
- viii. Provide a description of contingency plan including, but not limited to, the following information:
 1. Describe what measures will be taken if the dewatering system fails.
 2. Describe what measures will be taken if a water quality objective has been exceeded.
 3. Describe what measures will be taken in the event a BMP is determined to be ineffective?
- ix. Provide a description of the removal of the cofferdam including, but not limited to, the following information:
 1. Sequence of events
 2. Removal method
 3. Material disposal
 4. Monitoring and effective BMPs

Mitigation and Monitoring Plan

1. The proposed mitigation for impacts to waters of the State is insufficient and will not satisfy the Basin Plan and the goals of the No Net Loss Policy. Specifically, the amount of mitigation does not account for: (1) marshplain habitat mitigation as out-of-kind (for certain habitat impacts); (2) temporal loss until the marshplain habitat is fully functional; and (3) uncertainty with mitigation project design (see elements 9(a), 9(d), and 9(e) from the July 24 letter; repeated above). The Application should indicate what additional mitigation will be provided to ensure impacts are fully mitigated.
2. 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 Application indicates that the Project will re-establish/restore/enhance 13.59 acres of marshplain habitat for 11.93 acres of impacts to waters of the State (including diked marsh, tidal salt marsh, freshwater pond and marsh, tidal channel/Bay waters, and riparian habitat). The Application materials use the term "creation" when referring to this marshplain mitigation. From the figures provided in the Application Appendices (Figures 3.1-3.3 Mapped Wetlands and Waters of the United States and Figures 5.1-5.5 Marshplain Creation) it appears that the proposed mitigation will restore (in some places) and enhance (in others) marshplain habitat. The Regional Water Board does not consider the marshplain mitigation "creation". Please note the difference in terminology:
 - a. Restoration (re-establishment) means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Restoration results in re-establishing a former aquatic resource and results in a gain in aquatic resource area and functions and is acceptable mitigation for permanent impacts.
 - b. Creation means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist. Creation results in a gain in aquatic resource area and functions and is acceptable for permanent impacts.
 - c. Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area and is acceptable for temporary impacts.
 - d. Preservation means the removal of a threat to, or preventing the decline of, aquatic resources through appropriate legal, regulatory, financial, and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions and is acceptable when combined with other forms of mitigation.

The Application needs to distinguish between the type of mitigation proposed (i.e., restoration, creation, enhancement, preservation). Without this information, we cannot determine if proposed mitigation will satisfy the requirements of the No Net Loss Policy and the Basin Plan.

3. The Regional Water Board considers the following factors in determining the amount and type of mitigation required: (1) 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.

4. Tidal Marsh Habitat and Riparian Re-vegetation: Our request for a wetland restoration plan was only partially addressed as the Application refers to Appendix E (Mitigation and Monitoring Plan or MMP). The MMP does not include a wetland restoration plan. The construction plans submitted do contain landscape plans that designate grouping of specified plant species and contain planting notes, species lists, and plant spacing and an irrigation system design. While this is important information, the MMP should be revised to include the following:
 - a. Cross sections representing elevation changes through the channel reaches, which match the species to the elevations. The restoration plan should address whether the marsh plants will perform a function for wildlife or water quality. 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. The elevations and channel dimensions must support the functions and values of the creek including protection of sensitive habitats and endangered species. The separation of these marsh plants between levees means that the functionality of this type of isolated, restricted landscape will be difficult to establish.
 - b. To determine whether a site provides appropriate conditions for passive reestablishment 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 and wave wash. There is a threshold value for suspended sediment to sustain tidal marsh types. 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 the California Department of Fish and Wildlife should be consulted regarding what the planting plan should provide and the recommended species from a fisheries perspective.
 - c. The Application should include a Faber Tract Marsh protection and adaptive management plan to address whether the marsh is at risk of higher topography drowning with sea level rise and losing topographic complexity and habitat value if there are not enough episodic fluvial deposits of coarser sediments entering from the stream. Future adaptive management options must ensure the future ability to set back the golf course levee to spread the flooding and the flood sediment loads to the marsh area under low shear stress conditions. The marsh protection and adaptive management plan should be developed and periodically revised in coordination with all organizations, citizens and resource agencies with a mission to protect the marsh.
5. Riparian Impacts:
 - a. The Application indicates removal of between 162 and 256 trees. While we recognize that trees will need to be removed for construction purposes, the JPA should also consider that the any removal of trees for flood control purposes should balance flood control needs and habitat protection. The Application indicates removed trees will be replaced at a 1:1 ratio. This ratio is insufficient and should be revised to account for temporal loss and tree survival rates.
 - b. The MMP describes that, "The planting of an appropriate number of native trees at selected off-site locations (Arastradero Preserve and/or other foothills locations for Palo Alto in coordination with Palo Alto's Golf Course Project) to replace the removed canopy area would replace canopy along with associated ecosystem benefits at locations where an increased density of trees is needed (Appendix E p. 22)." In addition, the Application proposes providing 2 acres of restored marshplain as an out-of-kind mitigation for impacts to 0.5 acres of riparian habitat. As noted above, in general, compensatory mitigation should be of the same type and be located where it is most likely to successfully replace lost area, functions, and beneficial

uses. Out-of-kind mitigation will result in a net loss in the amount of the impacted aquatic resource type which will lead to an increase in the amount of mitigation required. Please provide more information in the MMP on alternatives considered for onsite, in-kind riparian restoration. The MMP should also describe the need for tree canopy (based on existing conditions, site characteristics, etc.) and the potential for tree planting success for any offsite mitigation alternatives.

6. Work Windows: The Application should clearly describe work windows for all construction activities and special work windows associated with protecting listed species.
7. Monitoring Methods:
 - a. We recognize the MMP includes the proposed monitoring method (5) a Corps-verified wetland delineation in year 5 to confirm that the mitigation acreage and success criteria requirements have been met. However, the MMP includes this under Section 6.1.2 Wetland Vegetation Quantitative Monitoring. A Corps-verified wetland delineation determines the presence of wetland soils, hydrology, and hydrophytic vegetation in a given area. The MMP should be modified to indicate use of the Corps' wetland delineation as a success criterion for the complete marshplain restoration project (Section 6.1) and not limit its use to only wetland vegetation (Section 6.1.2).
 - b. 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.
 - c. 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.
 - d. The MMP should describe proposed monitoring methods. The Wetland Regional Monitoring Program provides protocols for a variety of parameters (e.g., sedimentation and erosion, invasive species, tidal wetland vegetation). The Regional Water Board's Fact Sheet for Wetland Projects also contains useful references for monitoring methods.

Operation and Maintenance Plan (O&M Plan)

1. The O&M Plan does not indicate responsible parties for all maintenance. The O&M Plan must identify responsible parties for implementing all maintenance activities.
2. The Santa Clara Valley Water District has an existing Stream Maintenance Program (SMP) that could be implemented in maintaining features that would qualify under the SMP. The Application should be revised to indicate that maintenance activities for the Project will be conducted under the District's SMP.

3. The O&M Plan states in various locations that woody vegetation (trees and shrubs) will be removed, cut down, or limbed up. The proposed maintenance for the riparian mitigation area and Faber Tract levee is very general. The O&M Plan should be revised to clearly describe maintenance for the following vegetated areas, including, but not limited to, protective measures to ensure impacts to the habitats are avoided and minimized and methods to ensure these habitats are allowed to establish achieve the approved success criteria.
 - a. Marsh habitat and associated species
 - b. "Vegetative levee protection", "turf reinforcement mat", and "10-foot wide band of shrub vegetation"
 - c. Riparian trees that are proposed to be planted on-site as mitigation

CEQA

The Application describes modifications to the Project design as originally proposed in the March 2013 application and the Final EIR (October 2012). The JPA should conduct any additional environmental assessment as required by CEQA as the design modifications may pose additional impacts to the environment.

Protection of Human Health and Safety

It is of paramount and shared concern by the JPA, District, local residents, general public and the agencies that East Palo Alto and Palo Alto must have flood protection for human health and safety and those flood protection elements of the project should be implemented expediently. Given the extensive work needed to complete the Application for the Project, we recommend that the Application indicate how the Project can be phased to first implement the flood protection features associated with protecting East Palo Alto and Palo Alto for human health and safety. The certification of the Project could then permit the construction of the Project in phases. For instance, Phase 1 could include floodwall and levee construction as follows:

- a. Floodwalls
 - i. Palo Alto (east) side – c-line: from STA 77+50 (HWY 101) to STA 65+00
 - ii. East Palo Alto (west) side – c-line: from STA 77+50 (Hwy 101) to 54+00
- b. Levee – East Palo Alto side – c-line: from STA 55+00 to STA 30+00 (Friendship Bridge)

While the design details of other aspects of the Project are resolved, Phase 1 would not include other proposed Project elements (e.g. sediment removal, rock slope protection) within the station locations identified above. The remaining project elements would be permitted a second, which will allow additional time to resolve other concerns as described in this letter and expressed in the comments provided by the public.

Conclusion

In its present form the Application lacks sufficient information needed to determine whether or not the Project complies with State water quality standards. The Application needs to be revised to include the missing information discussed in this letter.

To protect the human health and safety in the most expedient way, the Application should propose phasing the Project's construction to first implement the flood control protection elements for East Palo Alto and Palo Alto to the extent feasible subject to all agencies' approval. We are willing to work with other agencies to consider permitting the first phase of the Project.

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

Sincerely,

Bruce H. Wolfe
Executive Officer

Cc: Kevin Murray, SFCJPA, kmurray@sfcjpa.org
Navroop Jassal, SCVWD, njassal@valleywater.org
Michael Martin, SCVWD, Michaelmartin@valleywater.org
Bill Springer, SCVWD, bspringer@valleywater.org
Jane Hicks, USCOE, Jane.M.Hicks@usace.army.mil
Katerina Galacatos, USCOE, Katerina.Galacatos@usace.army.mil
Lisa Mangione, USCOE, Lisa.Mangione@usace.army.mil
Ryan Olah, USFWS, ryan_olah@fws.gov
Anne Morkill, USFWS, anne_morkill@fws.gov
Eric Mruz, USFWS, eric_mruz@fws.gov
Joseph Terry, USFWS, joseph_terry@fws.gov
Cay Goude, USFWS, cay_goude@fws.gov
Joy Albertson, USFWS, joy_albertson@fws.gov
Melisa Amato, USFWS, melisa_amato@fws.gov
Gary Stern, NMFS, Gary.Stern@noaa.gov
Ellie K., BCDC, EllieK@bcdcc.ca.gov
Anniken Lydon, BCDC, annikenl@bcdcc.ca.gov
Tami Schane, CDFW, TSchane@wildlife.ca.gov