



San Francisco Bay Regional Water Quality Control Board

**IN BOLD AND ITALICS BELOW ARE SFCJPA COMMENTS
ON THE REGIONAL WATER BOARD LETTER**

February 27, 2014
CIWQS Place No. 757384 (MB)

Sent via email: No hardcopy to follow

Board of Directors
San Francisquito Creek Joint Powers Authority 1231
Hoover Street
Menlo Park, CA 94025

SUBJECT: Response to the Application for Water Quality Certification for the San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project, Santa Clara and San Mateo Counties

Dear Board of Directors:

The San Francisquito Creek Joint Powers Authority (JPA) has applied for a federal Clean Water Act (CWA) section 401 water quality certification for the proposed San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project (Project). The JPA is proposing to increase flood flow capacity to contain the one percent flood by (1) excavating sediment within the channel; (2) installing flood walls; (3) rebuilding and, in some cases, setting back existing levees; (4) constructing a boardwalk at the existing Friendship Bridge; and (5) planting marshplain vegetation along the excavated sections of the creek.

SFCJPA comment: There are several important features of the SFCJPA project not mentioned that will enhance public safety, reduce erosion, facilitate sediment transport, and improve water quality. These include:

- 1. Widening the channel to reduce water surface elevation and flow velocities;***
- 2. Creation/restoration of 15 acres of tidal marsh around a low flow channel within the creek; and***
- 3. The replacement of a 1959 PG&E gas pipeline behind East Palo Alto homes with a modern pipeline through the Palo Alto Golf Course and away from residences.***

The project will also allow for the future restoration of the historic connection between the Creek and marsh that would sustain the marsh and promote resilience against Sea Level Rise.

This letter serves as notification that, at this time, the Regional Water Board has insufficient information on which to issue water quality certification, and, accordingly, cannot certify that the Project, as proposed, will not violate State water quality standards. Therefore, to preserve the Regional Water Board's ability to act on a certification for the Project, water quality certification for the Project is hereby denied without prejudice.

We recognize the significance of the Project to the community and the JPA's urgency in securing all permits for the Project and proceeding to construction. This letter is intended to provide guidance to the JPA on how best to move forward to secure permits from the Regional Water Board and other regulatory agencies. Further, the Regional Water Board is committed to working with the JPA on coordinating and streamlining the permitting process.

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

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SFCJPA comment: The U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service, and Bay Conservation and Development Commission did not have concerns with the project design following our modification in January 2014. The SFCJPA understands that these agencies put their work on our permits on hold due to concerns expressed by the Regional Water Board. We welcome a commitment by the Regional Water Board to streamline the process by moving forward with its Section 401 water quality certification that would allow the other regulatory agencies to complete their permits.

The Regional Water Board first received an application for certification for the Project on March 12, 2013. Our determination to deny water quality certification without prejudice is based on the CWA one-year statutory deadline approaching on March 12, 2014, and our inability to certify the Project by that date based on the information the Regional Water Board has received to date. When the JPA pursues water quality certification in the future, the Regional Water Board will need at least the following additional data to be able to consider certifying the Project: (1) a complete set of technical reports and corresponding data (e.g., hydrology and modeling reports); (2) an alternatives analysis consistent with U.S. EPA's Section 404(b)(1) Guidelines that demonstrates that the Project is the Least Environmentally Damaging Practicable Alternative (LEDPA) to the designated beneficial uses; and (3) an adequate description of water quality measures that will be implemented to address potentially polluted urban stormwater runoff entering the creek and the Faber Tract Marsh at higher flows. These materials are explained in further detail below.

SFCJPA comment: Over the past year, the SFCJPA and its consultants have provided the Regional Water Board with hundreds of pages of technical information – and several in-person briefings – on the proposed project's ability to solve the flood problem in the least environmentally damaging practicable way. The Regional Water Board has committed to streamline the process; we suggest that future Regional Water Board requests are specific, rather than overly broad such as “complete set of technical reports and corresponding data.” The SFCJPA will work with the Regional Water Board to submit requested new information and resubmit information that is consistent with Section 404(b) of the Clean Water Act.

Application History to Date

Due to the lack of design details contained in the initial application materials received by the Regional Water Board on March 12, 2013, we were not able to determine whether the Project as proposed would violate State water quality standards and sent a letter to the JPA on March 29, 2013, identifying the information the Regional Water Board would need to process the application. Regional Water Board staff also reviewed supplemental application materials submitted on August 1, 2013, and January 28, 2014, which responded to some of the deficiencies staff had noted. Regional Water Board staff discussed the remaining application deficiencies with the JPA and/or its staff during meetings/conference calls on August 29, September 18, November 7, and December 12, 2013; and February 3 and February 11, 2014.

SFCJPA comment: Missing from the above paragraph are two important facts related to the Regional Water Board's timeline and statement regarding application deficiencies:

- 1) In August 2012, the Regional Water Board provided specific comments on the SFCJPA's Draft Environmental Impact Report, an expansive document with a detailed analysis of the project. In those comments, the Regional Water Board did not indicate concerns with the project's fundamental design that are being expressed currently.***
- 2) On September 4, 2013, the Regional Water Board notified the SFCJPA in writing that the project application was complete. At that time, the Regional Water Board requested additional information on the alternatives analysis, which was provided by the SFCJPA. Again, the Regional Water Board did not express concerns about two key issues now being raised: impacts to water quality or impacts to the Faber Tract.***

The permit process is most efficient when expectations are clear and consistent throughout.

Future Application Guidance

Hydraulic Design

The JPA must demonstrate that the Project design, as proposed, constitutes the LEDPA, consistent with U.S.EPA's Section 404(b)(1) Guidelines. There appear to be alternative designs not presented in the January 28, 2014, or prior application materials that could effectively reduce the threat of flooding with less adverse impact on the environment and endangered wildlife species.

SFCJPA comment: The SFCJPA has provided information to the Regional Water Board on the water quality improvements that would result from the project. The Regional Water Board has not specified the project's "adverse impact(s) on the environment and endangered wildlife species". The project will improve water quality because stormwater going to the Bay will be filtered by a new 15 acre marshplain terrace within the widened creek channel. This is preferable to existing conditions where water overtops the channel just downstream of Highway 101, and flows over streets and through homes before being discharged to the Bay.

The future application should include a full evaluation of the feasibility of additional alternatives, some of which may have already been considered and possibly modeled by the JPA's consultants and staff. Examples of the types of alternatives that should be presented include: a) the feasibility of widening the hydraulic constriction at the north end of the airport and golf course to improve the hydraulic conveyance of flood flows to the Bay while reducing flood flow impacts on the Faber Marsh {refer to PWA's Alternative No. 3}; and b) constructing a bypass channel that would divert some of the flow from the San Francisquito Creek channel to the ball fields near the upstream end of the proposed flood wall, continue on down along the southern boundary of the golf course, and discharge to the tidal marsh at the southern end of the airport runway.

SFCJPA comment: The SFCJPA will provide its evaluation of alternatives in a different format. Example "a" above describes two different but related alternatives. PWA Alternative 3 (see image at right from the PWA report) was found to be infeasible for the following reasons:

- ***it would require building four levees instead of two as both the existing and new channels would need to convey floodwater within certified structures;***
- ***elevations of the creek and golf course relative to sea level, would require large levees along the bypass channel to create enough water elevation to push water out against the tide within the bypass channel;***
- ***these levees would require closing the course, an unnecessary step the community was unwilling to consider, especially since the proposed project is superior in terms of hydraulics and ecosystem restoration; and***
- ***it would require importing and grading four times as much levee fill and cost over five times more than the proposed project.***



Example “a” above also suggests that the SFCJPA should further study widening the channel mouth at the north end of the Palo Alto Airport runway. This would require shortening the runway, limiting its use and effectively closing the airport. A previous letter provided to the Regional Water Board from the consultant to the Palo Alto Airport indicated that attempting to close the airport for the purpose of the project would likely result in legal action and blockage from the Federal Aviation Administration. This is due to the airport’s role as a regional air traffic and emergency facility and the substantial federal investment in the facility. Suggestions by Regional Water Board staff to move the airport runway to the south or elevate it is not practical and would lead to enormous impacts to San Francisco Bay as a result of fill and construction in marsh lands or open water. By contrast, the project proposed by the SFCJPA has far fewer construction and permanent impacts on the environment.

All of the considerations that led the SCJPA to reject the Golf Course bypass alternative (except the closure of the golf course) also apply to example “b” suggested by the Regional Water Board. A bypass channel that follows an alignment south of the Golf Course would require building an engineered channel along a public road. A bypass would fill with Bay water unless an artificial flood basin with a tide gate was constructed at the Bay to manage tides and keep water levels artificially low. Example “b” is a much more costly and more structural alternative, and would have none of the environmental benefits of the SFCJPA’s proposed project.

Different modeling assumptions and techniques have been used by the two consulting firms hired by the JPA for the Project, Philip Williams and Associates (PWA) and HDR, Inc. (HDR). The modeling work provided by these two consulting firms has produced different results and conclusions. Future application materials should provide sufficient information regarding the various models that have been conducted to determine whether or not the proposed Project design avoids impacts to the extent practicable and constitutes the LEDPA.

SFCJPA comment: The two models were created for different purposes and used different design criteria and event volumes. The PWA model was used to test the technical feasibility of a project concept, while the HDR model was used to test the hydraulic performance of a specific design. It would be expected that the two models would yield differing results. The Regional Water Board should more clearly explain how two models used for different reasons impact whether the proposed project is the LEDPA.

HDR’s modeling indicates that the discharge into the Faber Tract marsh will be maintained at an 8-year recurrence interval. Even though the design proposal submitted January 28, 2014, did not include a change in the elevation of the Faber Tract or northern levee, the upcoming addition of a fourth bore for San Francisquito Creek under Highway 101 will result in a substantial increase in flood flows in the creek channel downstream of Highway 101. Under the January 28, 2014, design proposal, flows that would overtop the Faber Tract levee and flow into the marsh would significantly increase. The January 28, 2014, design proposal would increase the discharge into the Faber Tract marsh for the 30 and 100 year discharges by 5 to 7 times, respectively.

SFCJPA comment: Post-project, creek water will flow over a broad, new marshplain, which is far preferable to existing conditions, where excessive flows overtop the banks, flood developed areas, pick up contaminants, and then discharge into San Francisco Bay.

The Regional Water Board is correct that the January 28, 2014 SFCJPA submission described an increase in the volume of flows into the Faber Tract expected from a 30-year flow about three times per century. Since the January 28 submission, SFCJPA discussions with U.S. Fish & Wildlife Service staff have led to an additional design modification that would make uniform the differential settlement of the existing levee between the creek and Faber Tract.

The SFCJPA’s design firm, HDR, has examined the hydraulic impacts of this potential modification under the maximum flow (7,400 cfs – seen once in the 84 years since the USGS began recording creek flows) that could reach the Faber Tract after the proposed project and

improvements upstream from Caltrans' work at Highway 101 to the Pope-Chaucer Bridge are constructed. HDR's analysis determined that there would be a decrease in the frequency, volume and velocity of flow into Faber Tract, which the SFCJPA can present to the Regional Water Board and other permitting agencies in March.

Following the completion of the proposed project, and of the foreseeable Caltrans and SFCJPA projects upstream of the proposed project, there will be no increase in the frequency, volume or velocity of creek flows into the Faber Tract.

HDR's modeling supporting the January 28, 2014, design proposal uses an extreme high tide event as a boundary condition and concludes that high fluvial flood flows into the Faber Tract marsh will have a negligible impact on the marsh's habitat because the marsh will be submerged under several feet of tidal water. While impacts to marsh habitat may be negligible during extreme high tide events, the future application must provide an evaluation of potential adverse impacts resulting from any increased discharges into the Faber Tract marsh during tidal events more commonly experienced.

SFCJPA comment: The Faber Tract is currently inundated by Bay tides much more frequently than it is by San Francisquito Creek flows, and this will remain the case after the project is built. Thus, the Faber Tract would continue to be a tidal wetland inundated by normal tidal events at least 20 times each year. Post-project and with the suggested modification described above, even during extreme creek flows occurring on average once every 30 years, there would be no freshwater input to affect the marsh habitat.

In July 2009, JPA staff reported to the JPA's Board of Directors that the PWA model indicated that widening the levees in the downstream area and creating a wide marsh plain provided the flood benefit necessary to meet FEMA standards. In contrast, the 2014 HDR modeling indicates no benefits from widening the levees. The HDR model indicates that, under the current Project design, the flood water surface elevation of the creek rises through the golf course instead of falling in elevation. The future application must provide and explain all of the hydrologic and hydraulic modeling performed for the various alternatives evaluated for the Project. Additionally, the future application must provide a specific plan describing how habitat improvements will be realized by any increase in discharge into the Faber Tract marsh.

SFCJPA comment: Both the PWA and HDR models demonstrate that the desired 100-year flood protection is provided by widening the channel into the golf course and degrading the existing levee on the Palo Alto side to create a wide marshplain. These essential elements of the project are supported by both the PWA and HDR models. In January 2014, in response to a Regional Water Board inquiry about the potential benefits of additional widening beyond the PWA and HDR recommendations, the SFCJPA asked HDR to analyze any flood protection benefit from such additional widening. HDR confirmed that the proposed project optimizes the flood protection benefits of channel widening, which also creates 15 acres of new marsh habitat.

We are also concerned that the January 28, 2014, design proposal may not provide suitable protection to the residents of East Palo Alto. It appears that the levees on the East Palo Alto side and on the golf course side of the creek channel are designed to be approximately the same elevation, with the golf course levee potentially being a little higher than that on the East Palo Alto side. As such, the proposed Project seems to allow avoidable risks to the community of East Palo Alto. One of the possible alternatives that should be evaluated in the future application is to consider making the levee on the golf course side lower than on the East Palo Alto side.

SFCJPA comment: The levee on the Palo Alto side will be built on golf course land that is far less compacted than the soil beneath the existing East Palo Alto levee. Geotechnical investigations and load calculations demonstrate that the new levee in Palo Alto will settle one foot more than the improved levee in East Palo Alto within two years after construction. The proposed project is designed to accommodate this differential settlement. The proposed project has the strong support of East Palo Alto because it will provide substantial flood protection to a neighborhood with a demonstrated recurring flood threat to life and property, which is exacerbated by delays to the construction schedule.

Faber Tract Marsh

One of the beneficial uses of the waters of the State and the United States in and around the Project area is for endangered species habitat. The U.S. Fish and Wildlife Service (Service) has recently indicated to us that the tidal marsh of the Faber Tract has consistently supported the largest population of the endangered California clapper rail rangewide as well as a population of the endangered salt marsh harvest mouse. One of the primary threats to the California clapper rail and salt marsh harvest mouse is predation by mammal and avian predators, especially during flooding events when suitable marsh and upland refugia cover is submerged and unavailable. Therefore, due to the current status of the California clapper rail (only about 1,500 individuals are present rangewide) and the salt marsh harvest mouse, the Service is concerned about any changes to the hydrology within the Faber Tract that would increase the frequency of inundation of the Faber Tract marsh and upland refugia vegetation or increase the quantity or velocity of flows into the Faber Tract marsh relative to the existing (pre-Caltrans Highway 101 culvert installation) conditions. Thus, the future application should present Project design alternatives that would minimize any increases in the frequency of inundation of marsh and upland refugia vegetation within the Faber Tract and avoid any increases in the quantity or velocity of flows into the Faber Tract marsh relative to the existing (pre-Caltrans Highway 101 culvert installation) conditions.

SFCJPA comment: The modified project design in the January 28, 2014 submission to the Regional Water Board does not degrade the levee between the creek and Faber Tract and will not increase the frequency of creek discharge into the Faber Tract. The U.S. Fish and Wildlife Service (US FWS) manages the Faber Tract and has responsibility for writing a Biological Opinion for the federal U.S. Army Corps of Engineers permit. The US FWS communicated to the SFCJPA and to the Corps of Engineers before mid-February that the SFCJPA's project design was acceptable. As noted previously, tides inundate the Faber Tract at a far greater frequency than creek flows under current or post-project conditions. The proposed project decreases the amount of pollution entering the Bay because floodwaters will be contained in a widened creek channel and flow over a new marshplain instead of over streets and through homes prior to being discharged to the Bay. The real threat to water quality is also a threat to life/safety – under current conditions large storm events flood East Palo Alto and Palo Alto homes, businesses and streets. Following the design modification discussed on page 4 to make the existing Faber more uniform, there will be no increase in flow frequency, volume or velocity of creek water entering the Faber Tract.

Water Quality

Any future application should address water quality impacts related to urban stormwater runoff into the creek and the adjacent Faber Tract marsh habitats. The January 28, 2014, design proposal would allow a significant increase in the discharge of fluvial discharges into the Faber Tract marsh. The 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 future application must 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.

In general, all successful flood control projects in the Bay Area over the past 15 to 20 years have included a mix of up-watershed detention/peak reduction, bypasses around major constrictions, expansion of the low-watershed floodplain, and channel modification where appropriate. The January 28, 2014, design proposal seems to rely predominately on channel modification with some expansion of the low-watershed floodplain. Since it does not appear possible to expand the Project's low-watershed floodplain into the Faber Tract, the future application should present significant up-watershed detention/peak reduction alternatives. LID and associated up-watershed detention/peak reduction appears necessary to be able to minimize both flow and its associated pollutants into the Faber Tract marsh while maintaining the same level of flood protection. Other alternatives may include the use of pump stations to reduce runoff and pollutant loads, such as diverting first flush flows to publicly owned treatment works (POTW).

SFCJPA comment: Reducing the scale of the proposed project for any reason would reduce many of the benefits described above, including flood protection and ecosystem restoration. Future projects west of the proposed project being planned for San Francisquito Creek include channel widening, bridge replacements, and – potentially – the detention of waters upstream. The proposed project is moving forward as a separate project at this time because of the current high risk to life and property, and the fact that any viable scenario for upstream detention requires the implementation of these projects downstream, especially the proposed project.

Detention that benefits flood control can only be effective within areas of the watershed that are at higher elevations than flood-prone areas, yet low enough to capture a significant percentage of the watershed's total discharge into the creek. The only such locations within the San Francisquito watershed are on the private property of Stanford University.

For the past five years, the SFCJPA has been working to include upstream detention as one strategy within a suite of solutions to the flood problem, and we continue to discuss upstream floodwater detention opportunities with Stanford University. Stanford has indicated that detention for water supply and flood control are two of several objectives in a long-term, and as of yet undefined, plan for Searsville Lake and other areas and facilities on their property.

There is no known off-stream site that could contain enough water to eliminate the need for the level of protection required by the proposed project. The 100-year level of protection is not only needed to provide this "gold standard" to a vulnerable underserved community, it is also needed to enable future projects in the floodplain area upstream of Highway 101. These future projects would increase the flow capacity in the floodplain area to 6,700 cfs. Reducing a 100-year flow to this amount through upstream detention would require the capture of more than the expected 2,500 cfs (or 27% of the 100-year flow) over a period of several hours, because the flow during a large storm would begin diverting into the detention site well before it reaches the 100-year flow rate. Thus, the detention site would need to be much larger than the one available and potentially effective site described by a SFCJPA consultant's report in 2009.

The only way for detention to achieve the level of flow reduction needed to reduce the flood protection benefits created by the proposed project would be to build and operate a new or existing in-stream reservoir(s) as a flood control facility. As part of its Searsville study, Stanford is considering this option among many options, but it would need the support of the University and regulatory permitting agencies, and its implementation is many years off.

To delay the proposed project to wait for a private entity to complete plans that may provide flood protection far off in the future is unfair and dangerous to a community that has experienced multiple floods, including one as recently as 14 months ago. In addition, reducing the scale of the proposed project is poor public policy given its environmental benefits to the interface between this critical creek and the Bay.

In summary, the SFCJPA supports the use of upstream detention in this watershed and it is part of our broader planning effort to realize 100-year flood protection in areas farther west in the floodplain. However, we must not hold up a proposed project that eliminates an immediate threat to life and property in an underserved community by waiting for an upstream detention project by a private entity that is far off in the future, or may never happen. Particularly when the proposed project also improves environmental conditions.

In the San Francisquito Creek watershed, very large flows develop rapidly within the creek. This is due in part to the fact that the vast majority of the watershed is undeveloped, and the creek reaches flood stage only after the soils of the watershed are saturated in which case open space acts similar to paved ground. While a worthy goal in many circumstances and a practice supported by our local jurisdictions, LID would not reduce the flow rate during large events to such a degree as to alter the project's design criteria for flood protection.

The JPA has a unique opportunity to coordinate with the cities of Palo Alto, Menlo Park, and East Palo Alto; San Mateo County; and the Santa Clara Valley Water District to develop a plan to implement regional LID measures consistent with Municipal Regional Permit (MRP) requirements to address polluted urban stormwater runoff within the watershed upstream of Highway 101 and within the Project reach. The future application should indicate how such a plan would also identify the LID projects that have been implemented already, are in the process of being implemented, and will be implemented in the future to achieve flood control, water quality improvement, and habitat and species protection.

SFCJPA comment: SFCJPA member agencies understand the importance of water quality related activities and are leaders on this topic. However, LID would not provide a useful flood protection benefit in the San Francisquito watershed. Water quality measures resulting from LID are regulated by separate Regional Water Board countywide/municipal permits, to which the SFCJPA is not a party. Also, with the proposed modification, the post-project creek will not send stormwater into the Faber Tract and the project has no negative impact on water quality.

The Project as proposed in the January 28, 2014, design proposal reflected a single purpose design of conveying flood flows quickly to the Bay. The future application should present alternatives for the Project that have multi-objective incorporating features that (1) convey flows in a manner that is protective of both the community and the environment, such as through the use of multiple conveyance features to split flows and reduce velocities; (2) protect water quality; (3) protect endangered species; and (4) protect habitat along San Francisquito Creek and in the Faber Tract marsh.

SFCJPA comment: It is widely understood that the proposed project reflects a multi-objective design rather than a “single purpose design of conveying flood flows quickly to the Bay” as stated above. The multi-purpose design is described on page one of this letter, and the multiple benefits in addition to flood protection were described on page one and elsewhere. The proposed project is both the Least Environmentally Damaging Practicable Alternative (LEDPA) and the best alternative available to meet the needs of the communities. Information making this plain can again be submitted to the Regional Water Board, in a manner that complies with Section 404(b) of the Clean Water Act.

The JPA should reapply for water quality certification by submitting a new application for CWA section 401 water quality certification to the Regional Water Board. In that application, please indicate what application materials previously submitted are part of the new application.

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

Sent via email to the following:

Patrick Burt, SFCJPA Board, Council Member - City of Palo Alto
Kirsten Keith, SFCJPA Board, Council Member - City of Menlo Park
Ruben Abrica, SFCJPA Board, Mayor - City of East Palo Alto
Dave Pine, SFCJPA Board, Board of Supervisors – San Mateo County
Brian Schmidt, SFCJPA Board, Santa Clara Valley Water District Board
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