



US Army Corps
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SAN FRANCISCO DISTRICT

PUBLIC NOTICE

Regulatory Branch
333 Market Street
San Francisco, CA 94105-2197

Project: Mission Creek Restoration

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1. INTRODUCTION: Alameda County Flood Control District and Water Conservation District (District), through their agent Questa Engineering (contact: Sydney Temple, Questa Engineering, P.O. Box 70356 Point Richmond, California, 94807, 510-236-6114), has applied to the U.S. Army Corps of Engineers (USACE) for a permit to permanently impact 1.21 acres of jurisdictional waters of the U.S. to restore habitat and creek functions in a 3,100-linear-foot section of Mission Creek located between Driscoll Road and Palm Avenue in the City of Fremont, Alameda County, California (Figure 1). This application is being processed pursuant to the provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. PROJECT PURPOSE AND NEED: The basic project purpose is creek restoration. The overall project purpose is to stabilize eroding banks, stop down cutting, restore floodplain functions and improve habitat in Mission Creek between Driscoll Road and Palm Avenue. The applicant stated that the project is needed because this rapidly-eroding, down-cut section of creek is threatening adjacent properties and causing down stream sedimentation problems.

3. USACE JURISDICTION: USACE has taken jurisdiction over 1.21 acres of jurisdictional waters of the U.S. within the project site (Figure 2). Of the total amount of jurisdictional waters, 0.43 acre meet the criteria for in-stream and adjacent wetlands; the remaining 0.78 acre of waters is classified as a jurisdictional tributary to navigable waters of the U.S.

4. PROJECT DESCRIPTION: As shown in the attached drawings, the applicant plans to restore

3,100 linear feet of Mission Creek in the City of Fremont, California (Figure 3). Project components include the removal of exotic vegetation, construction of stable bed and banks, biotechnical bank stabilization methods, meander restoration and extensive riparian revegetation. Newly graded slopes, banks and channels would be planted with native riparian species. Planting would be designed to stabilize banks, replace exotic with native vegetation and enhance habitat value. As part of the restoration activities, an adjacent trail, sewer line and a bridge would be relocated out of jurisdictional waters.

Existing bank conditions along the project reach are moderately to highly eroded; approximately 500 to 600 feet of bank repair revetment actions have been constructed over the past 10 years. Channel incision has also occurred at several nick points, most dramatically below the Palm Avenue culvert. Further geomorphic field evidence that supports a moderate rate of historic channel bed incision includes: high steep banks along the creek; toe undercuts ranging from 0.5 to 6 feet high along a majority of channel length; geotechnical slumping visible along the upper banks throughout the reach; and numerous exposed tree roots.

The restoration project has been divided into two segments: upper and lower. The lower segment begins at Driscoll Road culvert and extends upstream to the Covington Drive footbridge. The upper segment extends upstream from the footbridge to Palm Avenue culvert.

Lower Segment Restoration Plan: This segment

currently exhibits minimal natural sinuosity with no obvious low flow channel. The channel is generally trapezoidal in character and has little or no adjacent floodplain terrace. Banks are vegetated with annual grasses, ruderal vegetation and a few scattered trees. The open tree canopy promotes growth of in-channel vegetation (mostly watercress). On the north bank, there are a paved access road, school ball fields and a few black walnut trees. The south bank exhibits a more developed riparian canopy with a cluster of severely undercut Monterey pines downstream of the footbridge.

The general approach to the restoration of the Lower Segment is to stabilize eroded banks, increase meandering of the creek, and develop a low flow channel and adjacent flood plain terrace. To accomplish this task, a new channel must be graded. Eroded areas on the left bank would be repaired to a moderate (3:1) channel slope and the low flow channel would be moved northeast of its present alignment. The right bank would be set back approximately 45 feet from its current location causing the existing sewer line and pedestrian trail to be relocated to accommodate the proposed restoration.

The basic layout of the new channel involves installing several new meander bends within the Lower Segment (Figure 4). Adding meander bends to Mission Creek would promote streambed diversity development, and increase the value and diversity of aquatic habitat. In general, a new low flow channel would be established measuring 25 feet wide and 2.5 feet deep. Adjacent to this low flow channel would be a flood plain terrace. This terrace would generally be inundated once every two years during larger storm events. Side slopes of the banks would be laid back to a minimum 3:1 slope and floodplain terraces would be created on the inside of meander bends. The terraces would be approximately 2.5 to 3 feet above streambed elevations and would be approximately 30-ft. across at their widest point. The terraces would be built using soil from excavation of the new low-flow channel and north bank.

Large stumps and rootwads of the excavated trees would be used as in-stream bank stabilization structures at the outside of meander bends. The structures would be secured with boulders and cables and would also provide aquatic habitat.

On the south bank, adjacent to Chadbourne School, a series of Monterey pines have been severely undercut. At this site, a meander bend would move the active channel away from these trees allowing soil to be backfilled into the root zone. The fill would create a new stable bank (Figure 5).

Other structural changes would occur as part of the overall restoration project. The bridge at Covington Drive would be replaced with a clear-span, pedestrian bridge. Upstream of the Driscoll Road culvert, bank revetment provides access to a trash rack and has been partially undermined. To correct this, the failed revetment would be removed. To armor the bank against scouring flows, vegetated rock riprap would be placed at the bank's toe. The existing trash rack, consisting of seven, 6-ft high metal poles in the channel bottom may also be removed.

After the new channel is constructed, the bed and banks would be initially devoid of vegetation and would require additional measures to prevent erosion while vegetation is establishing. The erosive forces of a stream are naturally directed towards the outer bends of meanders; therefore, slope protection would be placed at these outside bends to maintain the new low-flow channel. The meander bend slope protection would include a row of large, embedded "footer" boulders at the toe of the slope, or coir logs (cylindrical structures comprised of coconut husk fibers bound together with coconut twine). Coir logs would also be installed along bank toes of the newly constructed terraces. These logs provide immediate erosion control and a stable medium to support the growth and development of riparian plants. They are also flexible and adaptable, conforming to irregularities of the bank with little need for excavation and site disturbance. Live willow stakes are inserted through or between the rolls. Coir logs gradually degrade as they trap sediment. Degradable

coir fiber erosion control blankets or straw wattles would be installed on all slopes that are steeper than 3:1.

Upper Segment Restoration Plan: Currently, a eucalyptus riparian canopy with scattered oaks and cottonwoods dominates this segment. Approximately eight feet of down cutting has occurred below the Palm Avenue culvert producing steep banks with narrow channel top widths and exposed eucalyptus roots. Over the years, the District has installed grouted rock grade control structures and long sections of bank revetment during several unsuccessful attempts to halt the down cutting. To stop further down cutting, prevent additional bank failure and promote channel restoration, the applicant has proposed to remove the existing revetments, elevate the channel bed, install a series of boulder/rock weir structures, stabilize the banks and create a vegetated floodplain terrace (Figure 6). The existing channel alignment would remain.

The following sections describe the proposed restoration concepts:

- *Revetment Removal:* All existing concrete and rock revetment would be removed from the creek channel. This would allow a new channel bed configuration to be established.

- *Channel Bed Stabilization:* The project would be designed to keep the same overall gradient but more evenly distribute it along the upper segment. Fill material obtained from the lower segment channel excavation would be placed within the severely incised upper channel. The fill would be compacted and then stabilized using a series of low rock weirs. Gradient control would reduce down-cutting, excessive sediment discharge and bank erosion. New energy dissipation devices would be constructed at existing culvert outfalls. These would typically consist of placed riprap, planted with willow stakes.

- *Rock Weir Structures:* The change in elevation would be stabilized with a series of rock weirs. Each weir would provide an approximate one-foot drop in elevation with a 0.75 percent slope between each weir. This slope allows for sediment transport and reduces the chance of significant channel migration

within the channel banks. A pool would be created at the base of each weir to increase habitat diversity and dissipate energy.

- *Erosion Control:* Between the rock weirs, bank stabilization would be completed at existing erosion sites. Where possible, these banks would be graded to a less steep angle, stabilized at their toe and replanted. However, in some areas mature oak trees and a pedestrian trail preclude slope reconstruction. In order to stabilize these slopes without losing valued vegetation, an alternative approach would be used. This entails placing compacted fill to raise the bed and stabilize the existing deep bed incision. Rock and coir log protection would be installed and planted with willow stakes at the bank's toe. As the willows mature, the roots bind the rock to the toe making it erosion-resistant. Other plants would naturally re-colonize the bank slope once stabilized.

- *Floodplain Terrace Creation:* As part of the upper segment restoration, a new flood plain terrace would be created (Figure 7) in the area where approximately sixty eucalyptus trees would be removed. The terrace is expected to flood once or twice yearly, reduce potential channel erosion and provide an area for more diverse riparian vegetation to establish. Willows and alders would be planted along the low flow channel banks while other riparian species such as Fremont cottonwood, native blackberry and other native shrubs would be planted on the terrace.

5. PROPOSED MITIGATION: The proposed project is considered self-mitigating. To mitigate for the loss of 1.21 acres of jurisdictional wetlands and waters of the U.S., the District has proposed to restore and enhance approximately 1.85 acres of aquatic habitat on the project site. Mitigation would involve protecting existing sensitive habitat; creating new stream-bottom wetland habitat; and restoring degraded wetland and riparian habitat. Their stated overall objective is to ensure that no net loss of aquatic area or decrease in functional habitat value would occur as a result of their restoration project.

To replace wetlands and waters that would be lost as a result of the work, four new habitats would be created or enhanced as described below:

1. *Low-Flow Channel:* This habitat type includes open-water areas excavated for regular creek flow. These areas would serve as shallow water habitat for frogs, as well as willows, alders, sedges, rushes and wetland forbs.

2. *Lower Bank Riparian Zone:* This habitat type includes use of biotechnical slope protection (coir fiber rolls/blankets) and planting the lower creek banks and in-stream terrace with appropriate native vegetation.

3. *Upper Bank Riparian Zone:* This area consists of the upper banks that are available for upland riparian enhancement. The total bank length to be enhanced is approximately 3,100 feet long and would be planted with native trees and shrubs.

4. *In-Stream Pools and Aquatic Habitat:* The project provides for a net increase of pond-like aquatic habitat by placement of low rock weir drop structures and accompanying rock-lined plunge pools to slow the flow of water, provide shallow ponding areas, and create diversity within the channel section.

Overall habitat value of the creek would be increased by creating new, stable terrestrial and aquatic habitat, as well as by preserving and protecting existing sensitive habitat. This enhanced habitat would support a diversity of native wetland species, as well as provide for improved water quality.

The District has proposed to plant a mixture of appropriate native woody plants as dictated by the soil conditions and water regime within the mitigation area. Grasses and herbaceous plants would be seeded or planted as plugs.

Native woody plant materials would be collected from nearby sources, if practical, or obtained from local commercial sources. Propagules for other perennial species would be collected as cuttings.

The complete mitigation plan is available for review at our office.

6. ALTERNATIVES ANALYSIS: Projects involving fill discharged into waters of the U.S. must comply with the guidelines promulgated by the

Administrator of the Environmental Protection Agency under Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). An evaluation pursuant to the guidelines indicates the project is dependent on its location in, or proximity to waters of the United States to achieve the basic project purpose. This conclusion means that the applicant does not have to rebut the presumption that there is a practicable alternative to the project that would have less adverse effect to the aquatic ecosystem.

The applicant has submitted an analysis of alternatives for the project to facilitate a compliance determination of the guidelines. An off-site alternative was not required, as this project is site dependent. The District considered an alternative that met the purpose of the project with less effect on jurisdictional waters of the United States. This alternative involved performing structural repairs at severely eroded sites and leaving the rest of the creek alone. This alternative did not allow for complete habitat restoration and increased the chances that future bank stabilization work would be required.

After review of the alternatives, USACE determined that the proposed project was the least environmentally damaging, practicable alternative.

7. STATE APPROVALS: State water quality certification is a prerequisite for the issuance of a USACE permit to conduct any activity that may result in a fill or pollutant discharge into waters of the U.S., pursuant to Section 401 of the Clean Water Act (33 U.S.C. 1341). The applicant's request for state water quality certification is currently under review by the San Francisco Bay Regional Water Quality Control Board. No USACE permit will be granted until the applicant obtains the required certification. A certification may be presumed if the State fails or refuses to act on a valid request for certification within 60 days of receipt, unless the District Engineer determines a shorter or longer period is reasonable for the State to act. Water quality issues should be directed to the Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland,

California 94612, by the close of the comment period.

The project is not subject to the jurisdictional purview of the San Francisco Bay Conservation and Development Commission (SFBCDC) or the California Coastal Commission (CCC).

8. COMPLIANCE WITH FEDERAL LAWS:

National Environmental Policy Act of 1969 (NEPA): At the conclusion of the public comment period, USACE will assess the environmental impacts of the project in accordance with the requirements of NEPA (Public Law 91-190), the Council on Environmental Quality's Regulations at 40 CFR 1500-1508, and USACE's Regulations at 33 CFR 230 and 325. The final NEPA analysis will normally address the direct, indirect and cumulative impacts that result from regulated activities within USACE's jurisdiction and other non-regulated activities deemed to be sufficiently within its purview of federal control and responsibility to justify an expanded scope of analysis for NEPA purposes. The final NEPA analysis will be incorporated in the decision documentation that provides the rationale for issuing or denying a Department of the Army permit for the project.

Endangered Species Act of 1973 (ESA): The proposed project does not contain any known federally listed species or designated critical habitat. USACE has determined that the proposed project will not affect endangered species; no consultations will be pursued.

National Historic Preservation Act of 1966 (NHPA): USACE's archaeologist will be requested to conduct a cultural resources assessment of the permit area, involving a review of published and unpublished data on file with city, state, and federal agencies. If, based on assessment results, a field investigation of the permit area is warranted, and cultural properties listed or eligible for listing on the National Register of Historic Places are identified during the inspection, USACE will coordinate with

the State Historic Preservation Officer to take into account any project effects on such properties.

9. PUBLIC INTEREST EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable effects, including cumulative effects, of the proposed activity and its intended use on the public interest. Evaluation of the probable effects that the proposed activity may have on the public interest requires a careful weighing of all those factors that become relevant in each particular case. The benefits that reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision will reflect the national concern for both protection and utilization of important resources. All factors that may be relevant to the proposal must be considered including the cumulative effects thereof. Those factors include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

10. CONSIDERATION OF COMMENTS: The USACE is soliciting comments from the public; Federal, State and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the effects of this proposed activity. Any comments received will be considered by the USACE to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess effects on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. To make this decision, comments are used to assess effect on endangered species, historic properties, water quality,

and the other environmental factors that are addressed in a final Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

11. SUBMITTING COMMENTS: During the specified comment period, interested parties may submit written comments to the San Francisco District, Regulatory Branch, South Section, citing the applicant's name and public notice number in the letter. Comments may include a request for a public hearing on the project prior to a determination on the application; such requests shall state, with particularity, the reasons for holding a public hearing. All comments will be forwarded to the applicant for resolution or rebuttal. Details on any changes of a minor nature that are made in the final permit action will be provided on request. Other information may be obtained from the applicant or by contacting Phelicia Gomes of our office at 415-977-8452 or by email at pgomes@spd.usace.army.mil