

**CALIFORNIA COASTAL COMMISSION**

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**PROPOSED FINDINGS**  
**ON CONSISTENCY DETERMINATION**

Consistency Determination No.	<b>CD-046-06</b>
Staff:	MPD-SF
File Date:	6/9/0226
60th Day:	8/8/2006
75th Day:	8/23/2006
Commission Vote:	8/11/2006
Hearing on Findings:	10/15/2006

**FEDERAL AGENCY:** U. S. Army Corps of Engineers

**DEVELOPMENT LOCATION:** Lower Mission Creek, Santa Barbara (Exhibit 1)

**DEVELOPMENT DESCRIPTION:** Phase II of Lower Mission Creek flood-control improvements: tidewater goby, flood control channel maintenance, pilot channel design, and landscaping plans (Exhibits 2-9)

**PREVAILING COMMISSIONERS:** Commissioners Achadjian, Burke, Clark, Neely, Potter, Reilly, Vargas, and Chairman Caldwell

**SUBSTANTIVE FILE DOCUMENTS:** See page 17.

**[Staff Note – These proposed findings are presented in “tracked changes” mode.]**

## EXECUTIVE SUMMARY

On August 9, 2001, the Commission conditionally concurred with the U. S. Army Corps of Engineers' (Corps') consistency determination for a flood control project to improve flood protection on Mission Creek, in the City of Santa Barbara (CD-117-99). The flood control project was located both within and inland of the coastal zone and consisted of: (1) increasing the channel capacity to 3400 cubic feet per second (cfs), thereby providing an approximately a 20-year storm level of protection; (2) replacing four bridges along the study reach; (3) installing a new culvert bypassing the oxbow below Highway 101 ("oxbow bypass") (the oxbow would be left in place as a low-flow channel); (4) planting of native riparian species along sloped banks stabilized by riprap and creation of additional riparian habitat by enlarging planted slopes in areas where the Corps must purchase property adjacent to the stream; (5) creek banks consisting of either a vertical wall or a combination vertical wall and riprap sideslope (combination vertical wall/riprap sideslope would consist of vertical wall for the bottom half, with ungrouted riprap for the upper half, and with native riparian vegetation planted within the riprap); (6) maintaining existing natural stream bottom, and restoring concrete lined stream bottom to natural conditions (except immediately underneath bridges and through the oxbow); and (7) fish habitat improvements.

As originally proposed, mitigation measures included: (1) creation of riparian habitat on the banks of the stream; (2) widening the estuary; (3) construction of a pilot channel functioning as a low flow channel for the entire creek above the estuary; (4) instream features improving fish habitat; and (5) seasonal limitations on construction and maintenance activities. The Commission conditioned its concurrence to require the Corps to: (1) prepare and submit to the Commission plans for (a) the pilot channel, (b) maintenance and adaptive-management activities, and (c) landscaping with native riparian vegetation adjacent to the vertical floodwalls in the coastal zone; and (2) accelerate the goby portion of the comprehensive estuary management plan and incorporate relevant recommendations of that portion of the plan into the proposed project. In addition, the Corps agreed to participate in the development of a comprehensive management plan for the estuary and submit a consistency determination for that plan. The Commission found the original flood control project was necessary for flood-control purposes, was the least damaging feasible alternative, included feasible mitigation and, with the mitigation and proposed design, would, as conditioned, protect stream resources, water quality, and environmentally sensitive habitat (including federally listed threatened species - steelhead trout and tidewater goby), scenic views, and archaeological resources.

Under the "phased review" federal consistency procedures,<sup>1</sup> the Corps has submitted a consistency determination for this second phase of the project, consisting of four plans

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<sup>1</sup> 15 CFR §930.36 (d) provides: *Phased consistency determinations.* In cases where the Federal agency has sufficient information to determine the consistency of a proposed development project or other activity from planning to completion, the Federal agency shall provide the State agency with one consistency determination for the entire activity or development project. In cases where federal decisions related to a proposed development project or other activity

(tidewater goby management, flood control channel maintenance, pilot channel design, and landscaping plans). For this phase, the Corps has submitted the following plans:

1. Tidewater Goby Management Plan – Lower Mission Creek Flood Control Project, April 2005.
2. Channel Design Recommendations – Lower Mission Creek Flood Control Project, June 2005.
3. Lower Mission Creek Flood Control Project Adaptive Channel Maintenance Plan. Santa Barbara County Flood Control District. June 2005 (This is contained as Appendix C in #2 above).
4. Genetics of *Eucyclogobius newberryi* in Mission Creek Santa Barbara: a regional metapopulation analysis using mitochondrial control region sequence and microsatellites, August 19, 2005. (Supplement to the Tidewater Goby Management Plan).
5. Landscaping Plan, May 2006.
6. Santa Barbara County Streams – Lower Mission Creek, Feasibility Study, Hydraulic Technical Appendix, Sedimentation Engineering, November 1999.

In preparing these plans, the Corps convened the experts needed to analyze the biological, hydrological, water quality, and other specific design issues raised. The pilot channel design plan is based on input from technical experts at the Corps, City, County, University of California, NOAA Fisheries, as well as input from environmental organizations (EDC and Santa Barbara Channel Keeper). The refined plan maximizes feasible fish enhancement features, minimizes (to the extent feasible) artificial walls and stream bottom, includes a pilot channel lined with gravel/cobbles designed to concentrate flows and maintain temperatures beneficial for fish year-round, and provides for continued monitoring and adaptive management, including continuing consultation with the City, County, NOAA Fisheries, and other members of the Channel Design Working Group to monitor and modify the project, if warranted.

The Corps has also included the County's adaptive Channel Maintenance Plan, as the County will be performing the maintenance activities. This plan includes inspection and adoption of

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will be made in phases based upon developing information that was not available at the time of the original consistency determination, with each subsequent phase subject to Federal agency discretion to implement alternative decisions based upon such information (e.g., planning, siting, and design decisions), a consistency determination will be required for each major decision. In cases of phased decisionmaking, Federal agencies shall ensure that the development project or other activity continues to be consistent to the maximum extent practicable with the management program.

methods to protect fish enhancement features of the project, minimizing effects of vegetation removal and channel desilting, minimizing use of herbicides (and continuation of the original "no use of herbicides in the coastal zone" feature), re-creating pilot channels where needed, and removal of non-native vegetation.

The tidewater goby management plan discusses the result of the tidewater goby genetic studies conducted since the Commission's original review, notes the importance of Mission Creek as one of the primary regional "source" estuaries, notes that fish habitat improvements (e.g., baffles, ledges, slower velocities along the perimeter of the lagoon) discussed above will also benefit gobies, notes that only very limited construction would occur within the estuary itself, contains measures addressing and minimizing impacts from construction impacts on the goby, and provides for continuing goby monitoring.

Measures to protect water quality (including preparation of a storm water pollution prevention plan (SWPPP)), and sediment testing to determine the suitability of maintenance dredging for beach nourishment, have not yet been finalized. Thus, the Corps will still need to provide these details for Commission review and concurrence prior to any construction or maintenance dredging.

Five conditions are necessary to assure consistency with Sections 30236, 30231, 30233, 30240, and 30251 of the Coastal Act, due to the need to: a) avoid misunderstandings over the terms of the Tidewater Goby Management Plan (because several differing drafts had been circulated prior to the Commission's scheduled public hearing); b) clarify future review procedures and monitoring responsibilities; c) memorialize agreements between the Corps, the Commission staff, and the City over avoiding lagoon breaching, planning and implementing an appropriate lagoon buffer zone based on the applicable Coastal Act policies (and including coordination with interested parties); and d) clarify creekside riparian monitoring responsibilities. With the measures included in the revised design, monitoring, maintenance, mitigation, and adaptive management plans, and the on-going review of water quality plans and maintenance dredging, as well as any future project modifications, and as conditioned, the Commission finds the project would protect stream resources, water quality, environmentally sensitive habitat (including steelhead trout and tidewater goby), scenic views, and would therefore be consistent with Sections 30236, 30231, 30233, 30240, and 30251 of the Coastal Act.

#### **STAFF SUMMARY AND RECOMMENDATION:**

**I. Project Description.** The Corps has submitted four plans comprising the second phase of its previously-concurred-with Lower Mission Creek flood-control improvement project (CD-117-99). The overall flood control project is described on pages 4-8 of the attached Commission Findings for CD-117-99 (Exhibit 10). The four plans that are the subject of this consistency determination and are intended to satisfy the four conditions below consist of: (1) a tidewater goby management plan; (2) a flood control channel maintenance plan; (3) a refined pilot channel design; and (4) a landscaping plan. The Commission's conditions of concurrence provided:

- 1. Tidewater Goby Studies, Management Plan and Recommendations:** *The Corps of Engineers with input from interested biological experts shall conduct Tidewater Goby studies and develop a Management Plan for Tidewater Gobies in the Mission Creek Estuary that evaluates project specific impacts and includes recommendations to minimize those effects. . The Corps shall implement all feasible short- and long-term recommendations in the plan to mitigate impacts associated with the project or intended to lessen project-specific or cumulative impacts to Tidewater Gobies. The Corps shall also make recommendations regarding whether or not to proceed with a Tidewater Goby genetic study to help assess project impacts related to potential extirpation and recolonization. In addition, the Corps shall make recommendations regarding allowing the Mission Creek and Laguna Creek estuaries to merge under natural conditions (or as recommended by the team of biologists) in order to benefit Tidewater Gobies. The results of the tidewater goby Management studies and recommendations shall be submitted to the Commission as part of the consistency determination for the design phase review of the Lower Mission Creek Flood Control Project.*
- 2. Maintenance Plan:** *The Corps shall develop a new adaptive creek maintenance plan that includes hand clearing and that minimizes the use of herbicides and heavy equipment. The Maintenance Plan shall be submitted to the Commission as part of the consistency determination for the design phase review of the Lower Mission Creek Flood-Control Project.*
- 3. Pilot Channel Design:** *The Corps shall develop a new pilot channel configuration for the Lower Mission Creek Flood Control Project. The Corps shall consider, as design alternatives, all feasible suggestions and recommendations on the pilot channel's physical characteristics (e.g., dimensions, morphology, sinuosity, substrate, etc.) received from the Environmental Defense Center, Dr. Ann Riley, Dr. Ed Keller, Dr. Scott Cooper, Dr. Camm Swift, Dr. Kevin Lafferty, National Marine Fisheries Service, and the City and County of Santa Barbara. The new configuration shall be developed with the goal of promoting effective and efficient transport of sediment through the creek, minimizing streambed erosion and sedimentation impacts and related creek maintenance impacts associated with the project, and protecting aquatic habitat. The pilot channel design shall be submitted to the Commission as part of the consistency determination for the design phase review of the Lower Mission Creek Flood Control Project.*
- 4. Landscaping Plan:** *The Corps shall develop a new Landscaping Plan that includes native landscaping along all reaches of the project length on both sides of the creek including segments adjacent to vertical floodwalls where vegetated rip-rap banks are not proposed. The Plan shall include provisions for planting on private property to ensure a continuous riparian corridor wherever space physically permits.*

*The Landscaping plan shall be submitted to the Commission as part of the Lower Mission Creek Flood Control Project.*

**II. Federal Agency's Consistency Determination.** The Corps of Engineers has determined the project consistent to the maximum extent practicable with the California Coastal Management Program.

**III. Staff Recommendation.**

The staff recommends that the Commission adopt the following motion:

**MOTION:** ~~I move that the Commission concur with consistency determination CD-046-06 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).~~

**Staff Recommendation:**

~~The staff recommends a YES vote on the motion. Passage of this motion will result in an agreement with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.~~

**Resolution to Concur with Consistency Determination:**

~~The Commission hereby concurs with the consistency determination by the Corps of Engineers, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.~~

**MOTION:** I move that the Commission conditionally concur with consistency determination CD-046-06 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

**RESOLUTION TO CONDITIONALLY CONCUR WITH CONSISTENCY DETERMINATION:**

The Commission hereby conditionally concurs with the consistency determination CD-046-06 by the Corps of Engineers on the grounds that, if modified as described in the Commission's conditional concurrence, the project would be consistent with the enforceable policies of the CCMP, provided that the Corps of Engineers satisfies the condition specified below pursuant to 15 CFR §930.4.

**Conditions:**

**1. Lagoon Management Plan.** The Management Actions and other commitments contained in the Tidewater Goby Management Plan – Lower Mission Creek Flood Control Project, dated April 2005, shall be binding on the Corps of Engineers and on any future agencies implementing the management plan, except as provided below. Any changes to the management plan or other actions inconsistent with the Management Actions in the Tidewater Goby Management Plan shall not be implemented unless the Coastal Commission has authorized any such changes or actions through the federal consistency review and/or coastal development permit review process. Any future Corps or agency management plans or projects involving the Mission Creek Lagoon or, to the extent the Laguna Channel is addressed in the Tidewater Goby Management Plan, involving the Laguna Channel estuary shall be coordinated with the Tidewater Goby Management Plan.

**2. Lagoon Breaching Prohibition.** As provided in Management Action 13 A in the above-referenced plan, the Corps of Engineers, the City of Santa Barbara and the County of Santa Barbara shall not breach the lagoon, and to the extent practicable, the Corps shall assure that the City and the County will not artificially breach the lagoon (unless there is an imminent threat to public health and safety, and, in that event, only after the Coastal Commission has reviewed and authorized any such breaching).

**3. Lagoon Buffer.** As provided in Management Action 13 C in the above-referenced plan (also contained in Exhibit 8 of this staff report), the Corps of Engineers (and any future agencies implementing the management plan) shall modify the second sentence as follows: "In addition, the City will establish a 20-50 foot wide buffer zone along both sides of the lagoon that extends 150-200 feet downstream of the ends of the existing wing walls at the downstream side of the Cabrillo Boulevard bridge (Figure 5 of the above-referenced plan)." Prior to commencement of construction of the flood control project the Corps shall submit the final management plan (including buffers) to the Commission staff for its review and concurrence. The Commission staff will only consider activities which are consistent with the Coastal Act and will involve all known interested parties prior to concurring with the final plan.

**4. Landscaping Commitments Adjacent to Mission Creek.** Prior to commencement of construction of any portion of the flood control project, the Corps will provide a detailed monitoring plan for the native landscaping to be provided outside the creek bank edges, for Commission staff review and concurrence. The detailed plan shall specify performance and success criteria acceptable to the Coastal Commission, shall specify what incentives are being provided to encourage private landowners to plant and maintain native, non-invasive, trees and shrubs, shall provide for use of local stock wherever possible, shall establish performance and success criteria, shall provide for increasing the incentives in the event monitoring shows that

success criteria are not being met, and shall provide that, in the event the Corps is no longer conducting the monitoring, the City or County shall assume all monitoring responsibilities for the life of the project.

**5. Water Quality and Habitat Monitoring Plans.** Prior to commencement of construction of any portion of the flood control project, the Corps will submit to the Commission staff, for its review and concurrence, all water quality and stormwater protection plans. In addition, all annual monitoring plans for tidewater gobies and steelhead habitat monitoring submitted to the Fish and Wildlife Service and National Marine Fisheries Service shall also be submitted to the Commission staff for its review.

#### **IV. Applicable Legal Authorities.**

Section 307 of the Coastal Zone Management Act (CZMA) provides in part:

(c)(1)(A) Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.

##### **A. Conditional Concurrences.**

15 CFR § 930.4 provides, in part, that:

(a) Federal agencies, ... agencies should cooperate with State agencies to develop conditions that, if agreed to during the State agency's consistency review period and included in a Federal agency's final decision under Subpart C ... would allow the State agency to concur with the federal action. If instead a State agency issues a conditional concurrence:

(1) The State agency shall include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies. The State agency's concurrence letter shall also inform the parties that if the requirements of paragraphs (a)(1) through (3) of the section are not met, then all parties shall treat the State agency's conditional concurrence letter as an objection pursuant to the applicable Subpart...

(2) The Federal agency (for Subpart C) ... shall modify the applicable plan [or] project proposal, ... pursuant to the State agency's conditions. The Federal agency ... shall immediately notify the State agency if the State agency's conditions are not acceptable; and ...



(b) If the requirements of paragraphs (a)(1) through (3) of this section are not met, then all parties shall treat the State agency's conditional concurrence as an objection pursuant to the applicable Subpart.

15 CFR § 930.34 (d) and (e) elaborate, providing that:

(d) ... At the end of the ... [statutory time] period the Federal agency shall not proceed with the activity over a State agency's objection unless: (1) the Federal agency has concluded that under the "consistent to the maximum extent practicable" standard described in section 930.32 consistency with the enforceable policies of the management program is prohibited by existing law applicable to the Federal agency and the Federal agency has clearly described, in writing, to the State agency the legal impediments to full consistency (See §§930.32(a) and 930.39(a)), or (2) the Federal agency has concluded that its proposed action is fully consistent with the enforceable policies of the management program, though the State agency objects.

(e) If a Federal agency decides to proceed with a Federal agency activity that is objected to by a State agency, or to follow an alternative suggested by the State agency, the Federal agency shall notify the State agency of its decision to proceed before the project commences.

#### **B. Consistent to the Maximum Extent Practicable.**

Section 930.32 of the federal consistency regulations provides, in part, that:

(a)(1) The term "consistent to the maximum extent practicable" means fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.

The Commission recognizes that the standard for approval of Federal projects is that the activity must be "consistent to the maximum extent practicable" (Coastal Zone Management Act Section 307(c)(1)). This standard allows a federal activity that is not fully consistent with the CCMP to proceed, if compliance with the CCMP is "prohibited [by] existing Federal law applicable to the Federal agency's operations" (15 C.F.R. § 930.32). the Corps of Engineers did not provide any documentation to support a maximum extent practicable argument in its consistency determination. Therefore, there is no basis to conclude that existing law applicable to the Federal agency prohibits full consistency.

#### **IV. Findings and Declarations:**

The Commission finds and declares as follows:

**A. Stream Alteration and Environmentally Sensitive Habitat.** The Coastal Act provides:

**Section 30236.** *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*

**Section 30233**

*(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to [eight specified uses]: ...*

**Section 30240**

*(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

*(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

As discussed in its findings on the original consistency determination for this flood control project (Exhibit 10)(hereby incorporated by reference), the Commission found that the flood control project was an allowable use for stream alteration and fill, was the least environmentally damaging feasible alternative, included adequate monitoring and mitigation, and would benefit the stream resources by widening of the stream and estuary and removal of artificial hard bottom in the estuary and stream. The Commission conditioned its concurrence to address any remain impacts to stream resources (see pages 4-5 above for condition language). Aside from these conditions, during the Commission's original review, the Corps had also incorporated a number changes into the project, as follows:

1. Pursuant to section 930.36(d) of the regulations that implement the CZMA, the Corps will submit to the Commission one or more additional consistency determinations for future phases of the project and the maintenance thereof. In the future consistency determination(s), the Corps will 1) describe the specific characteristics of the design, and 2) consider all design-related issues including design of the pilot channel, adaptive management plan, and maintenance plan.

2. The Corps will convene a team of biologists with expertise on the tidewater goby. The team will consider issues related to the management of the tidewater goby within Mission Creek. Among other issues, the team will discuss the need for a study of tidewater goby genetics. If there are regional benefits and the team recommends proceeding with the study, the team will define the scope, parameters and protocols to be followed.
3. The Corps will perform additional hydraulic analyses to investigate the feasibility and effectiveness of raising the State Street and Cabrillo Boulevard Bridges independently or together. The Corps will submit to the Commission and EDC [the Environmental Defense Center] results of these analyses.
4. The Corps will compile the adaptive management and maintenance plan into a single document and will present the document to the Commission upon completion. In that plan, the Corps will clarify the methods for maintenance (e.g., herbicide and heavy equipment vs. hand clearing of vegetation).
5. The Corps will submit to the Commission as part of a consistency determination for a future phase of this project 1) a final design for the pilot channel, and 2) analysis that supports the Corps' final design choice. This analysis will reflect the fact that the current (feasibility level) characteristics and functions are not necessarily appropriate to optimal fluvial behavior for sediment transport and conveyance through Lower Mission Creek.
6. The Corps will participate with the City of Santa Barbara in the development of a management plan for the Mission Creek estuary, which will include an analysis of tidewater goby habitat as part of the overall plan along with water quality, flood control concerns, aesthetics, safety, and recreational opportunities. The Corps will submit to the Commission a consistency determination for this comprehensive management plan.
7. The Corps will accelerate the goby portion of the comprehensive estuary management plan as part of the proposed flood-control project. This goby plan will consider, among other issues, the commingling of the Laguna Channel and Mission Creek at the estuary. To the extent feasible, the Corps will implement recommendations from the plan that are associated with the flood-control project.

In compliance with the above commitments and Commission conditions, the Corps has convened the experts needed to analyze the biological, hydrological, water quality, and other specific design and has submitted the results of these more refined analyses, in the form of a tidewater goby management plan, a flood control channel maintenance, a refined pilot channel design, and landscaping plans. The pilot channel design plan is based on input from technical experts at the Corps, City, County, University of California, NOAA Fisheries, as well as input from environmental organizations (EDC and Santa Barbara Channel Keeper). The refined plan includes: (1) unlined stream bottom (except under existing bridges); (2) wider openings at four bridges; (3) widened stream sections, including (a) 2,200 ft. of widening from Canon Perdido to Haley St. (from 25 ft. to 42 ft), 1000 ft. from Haley St. to Highway 101 (25 ft. to 50 ft.), and 1,100 ft. from Yanonali St to the Beach (27 ft. to 60 ft.);

(4) removal of existing concrete bottom; (5) installation of riprap lining to protect bridges from scour due to increased widths; (6) construction of a pilot channel lined with gravel/cobbles designed to concentrate flows and maintain temperatures beneficial for fish year-round; (7) placement of clusters of boulders as rock energy dissipaters; (8) installation of fish ledges and fish baffles to provide fish protection and resting areas (particularly for steelhead); (9) consideration of measures to reduce the extent of riprap; and (10) an adaptive management program including consultation with the City, County, NOAA Fisheries, and other members of the Channel Design Working Group to monitor and modify the project, if warranted, including adding or removing weirs, modifying the size of instream boulders, placing additional boulders to encourage formation of a more stable and deeper low flow channel and series of pools. (See Exhibit 7 for further recommendations, details and mitigation measures the Corps has agreed to implement.)

The Corps' submittal also includes the County's adaptive Channel Maintenance Plan, as the County will be performing the maintenance activities. This plan includes inspection and adoption of methods to protect fish enhancement features of the project, minimizing effects of vegetation removal and channel desilting, minimizing use of herbicides (and continuation of the original "no use of herbicides in the coastal zone" feature), re-creating pilot channels where needed, and removal of non-native vegetation (see Exhibit 9 for further details and mitigation measures).

The tidewater goby management plan, which is a combined City, County, and Corps proposal, discusses the result of the tidewater goby genetic studies conducted since the Commission's original review and notes the importance of Mission Creek as one of the primary regional "source" estuaries (i.e., for repopulation to other estuaries) for tidewater gobies in southern Santa Barbara County, due to its relatively large size and long history of goby occupation, larger tidal reach, and longer upstream accessibility. The management plan also notes fish habitat improvements (e.g., baffles, ledges, slower velocities along the perimeter of the lagoon) discussed above will also benefit gobies, which are poor swimmers and need refuge during high flow events. The plan notes that, as discussed above, limited construction (primarily repair of damaged channel walls) would occur within the estuary itself. The plan contains measures addressing construction impacts on the goby and proposes the following measures to protect gobies:

- (1) limit construction in the estuary to avoid the peak spawning season (i.e., limit construction to June 15-Dec. 15);
  - (2) separate construction areas from the estuary using cofferdams and leave at least half the estuary (upstream of Cabrillo Blvd.) watered at all times;
  - (3) remove gobies using seine netting supervised by a qualified biologist and replace them in undisturbed portions of the estuary;
  - (4) conduct pre- and post-construction goby monitoring;
  - (5) float intake pumps to the maximum extent possible to minimize effects on gobies;
  - (6) use 1/8 inch or smaller mesh size for intake pump and frequently monitor mesh;
- and

- (7) provide annual reports to the U.S. Fish and Wildlife Service analyzing effects on gobies and recommending any needed modifications.

The Plan also reflects the Corps' agreement to implement the recommendations from its "goby genetics" study, including: (a) assuring no construction will occur in Arroyo Burro during construction at Mission Creek (Arroyo Burro is located upcoast (and west) of Mission Creek and is one of the other regionally critical goby habitat areas); (b) maintaining Mission Creek and Laguna Channels as separate channels during construction; and (c) creating a small artificial lagoon "a modest distance down the beach" and populating it with gobies "until well after construction is complete."

Exhibit 8 provides a complete list of the tidewater goby Management Objectives, Management Actions for the Design Phase, Construction Phase, and Post-construction Phase, Other Actions/Lagoon Management, including limiting estuary breaching, allowing the Mission Creek and Laguna Channel lagoons to merge, planting stabilizing native vegetation, and placement of interpretive signs, monitoring and developing plans for enhancing tidewater goby recolonization after any "extirpation" events, and, finally, a Monitoring and Adaptive Management Program.

In order to find the proposed project consistent with Sections 30236, 30231, 30233, 30240, and 30251 of the Coastal Act, the Commission finds that several conditions are necessary due to the need to: (a) avoid misunderstandings over the terms of the Tidewater Goby Management Plan (in part because several differing drafts had been circulated prior to the Commission's scheduled public hearing); (b) clarify future review procedures and monitoring responsibilities; (c) memorialize agreements between the Corps, the Commission staff, and the City over avoiding lagoon breaching, planning and implementing an appropriate lagoon buffer zone based on the applicable Coastal Act policies and including coordination with interested parties; and (d) clarify creekside riparian monitoring responsibilities.

To address these concerns, the conditions on pages 7-8 are intended to: (a) clarify which version of the Tidewater Goby Management Plan is the agreed-upon plan; (b) clarify that any changes to the plan will necessitate further Commission review; (c) clarify that any Laguna Channel plans are coordinated with the Tidewater Goby Management Plan; (d) clarify that artificial lagoon breaching is prohibited (except under emergencies, and even then only with Commission authorization); (e) reflect an agreement to amend the lagoon buffer provisions of the Tidewater Goby Management Plan to provide for a 20-50 ft. buffer on both sides of the lagoon; (f) provide for submittal of the final management plan (including buffers) to the Commission staff for its review and concurrence, which review will involve all known interested parties, and which will only consider activities which are consistent with the Coastal Act (including the habitat, wetland and stream alteration policies, and public access and recreation policies, and, if any conflicts should occur, the conflict resolution provisions of Section 30007.5 of the Coastal Act); (g) provide for Commission staff review of the riparian landscaping plan outside the creekbed, including plans and ongoing monitoring

responsibilities; and (h) provide for Commission staff review of the water quality plans and monitoring.

With the measures included in the revised design, monitoring, maintenance, mitigation, and adaptive management plans, and the on-going review of water quality plans and maintenance dredging, as well as any future project modifications, and as conditioned, the Commission finds the project would protect stream resources, water quality, environmentally sensitive habitat (including steelhead trout and tidewater goby), scenic views, and would therefore be consistent with Sections 30236, 30231, 30233, 30240, and 30251 of the Coastal Act.

~~With the measures included in the revised design, monitoring, maintenance, mitigation, and adaptive management plans, and the on-going review of water quality plans (discussed in the following section) and of any future project modifications, the Commission finds the project, as refined, would maximize the project's stream and estuary habitat benefits (including benefits to steelhead and tidewater goby habitat), would minimize adverse construction-related impacts, and would be consistent with the stream alteration and fill and environmentally sensitive habitat policies (Sections 30236, 30233 and 30240) of the Coastal Act.~~

**B. Water Quality.** Section 30231 of the Coastal Act provides:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

In its original review the Commission found:

*The proposed flood-control facility provides the Corps with an opportunity to restore water quality resources in Mission Creek by incorporating appropriate measures or technologies into the project design to reduce non-point source pollution. The reconstruction of the flood-control facility, including the replacement of bridges, installation of a culvert under Highway 101, and construction of floodwalls, provide the Corps with an opportunity to design the facility to incorporate measures into the project in order to reduce non-point source pollution. Section 30231 of the Coastal Act requires the restoration of water quality resources where feasible. However, based on discussions with water quality experts within the Commission staff and Santa Barbara County, it is undesirable to install non-point source pollution treatment devices at the storm drain outfall into the flood-control channel because*

*that location makes maintenance of the treatment device more problematic.<sup>2</sup> It seems preferable to place the treatment devices away from the creek where it is more accessible for maintenance purposes. In addition, the City of Santa Barbara is applying for a Phase II Stormwater NPDES to address non-point source pollution and the City has other programs to address water quality. Finally, the Corps has agreed that prior to construction it will coordinate with the City's water quality staff to determine if any of the activities proposed by the City could be coordinated with the flood-control project. With these measures, the project is consistent with the water quality policies of the Coastal Act.*

*In conclusion, the Commission finds that the proposed project will not significantly affect water quality resources of the coastal zone. Specifically, the project provides for water quality protection measures for construction and maintenance of the flood-control channel. Additionally, the Corps will coordinate its construction activities with the City's non-point source pollution program to avoid redundant construction efforts and increasing construction efficiency. Therefore, the Commission finds that the proposed project is consistent with the water quality policies of the CCMP.*

Measures to protect water quality in the original project included: (1) no vegetation removal or herbicide use in the coastal zone; (2) use of silt curtains and mosaic vegetation removal where such activities occur inland of the coastal zone boundary; (3) coordinating the construction of the flood-control facility with the water quality efforts within the City of Santa Barbara, so that, if necessary and advantageous, the City could construct measures to control appropriate non-point source pollution concurrent with the project; and (4) preparation of a storm water pollution prevention plan (SWPPP) to minimize water quality impacts from the construction of the flood-control facility, to be subject to further Commission consistency review (both the SWPPP and the maintenance plan). Final water quality plans have not been included in this second phase of the submittal; thus, the Corps will still need to provide these details for Commission review and concurrence prior to any construction. The Commission reiterates its previous water quality conclusion that, with the opportunity to review the final SWPPP/water quality plans, the five conditions are necessary to assure consistency with Sections 30236, 30231, 30233, 30240, and 30251 of the Coastal Act the project is consistent with the water quality policy (Section 30231) of the Coastal Act.

**C. Sand Supply.** Section 30233(d) of the Coastal Act provides for the use of suitable material removed from coastal streams to be used for beach replenishment purposes. This section provides that:

*Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be*

---

<sup>2</sup> Personal Communication, Santa Barbara County, 3/29/01. [footnote in original]

*placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

In its original review the Commission noted that maintenance activities including removal of sediment from the stream should be tested prior to excavation to determine if it is suitable for beach disposal. The Commission noted that the final EIS for the proposed project did not include an evaluation of the suitability of this material for beach replenishment. Without this information, the Commission was unable to determine if sediment disposal activities would adversely affect coastal resources, but since the Corps agreed to provide this information at a later phase, like the water quality plans, the Commission determined the proper procedures were in place to enable beach replenishment where appropriate. The Commission therefore concluded that "With the commitments for phased consistency review and use of suitable material for beach replenishment purposes, the Commission finds that the proposed project is consistent with the sand supply policies of the Coastal Act." This information is still unavailable; thus, like the water quality issue discussion contained in the previous section, sediment analysis and beach replenishment options will need to be reviewed at a later phase when the information becomes available. The Commission reiterates its previous sand supply conclusion that, with the opportunity to review the final sediment test results and disposal proposals, the project is consistent with the sand supply policy (Section 30233(d)) of the Coastal Act.

**D. Visual Resources.** Section 30251 of the Coastal Act provides, in part, that:

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas....*

The Commission previously found:

*As stated above, most of the Creek within the coastal zone will be developed with vertical walls and will not appear as a natural stream. However, most of the stream within the coastal zone (approximately 85%) is already developed with some manmade structures. The remaining portion of the stream within the coastal zone still has some natural appearance. The proposed project will change that appearance of the entire stream within the coastal zone to a channelized hardened stream. Despite this change in character, the Corps believes that the project will improve the visual character of the creek. This conclusion is based on several factors: 1) the project will remove trash and debris from the creek and project fences will make it more difficult to dispose of trash in the stream; 2) the project will remove buildings that are immediately adjacent to the creek (in some cases the walls of the buildings are the banks of the stream); 3) removal of several different types of*



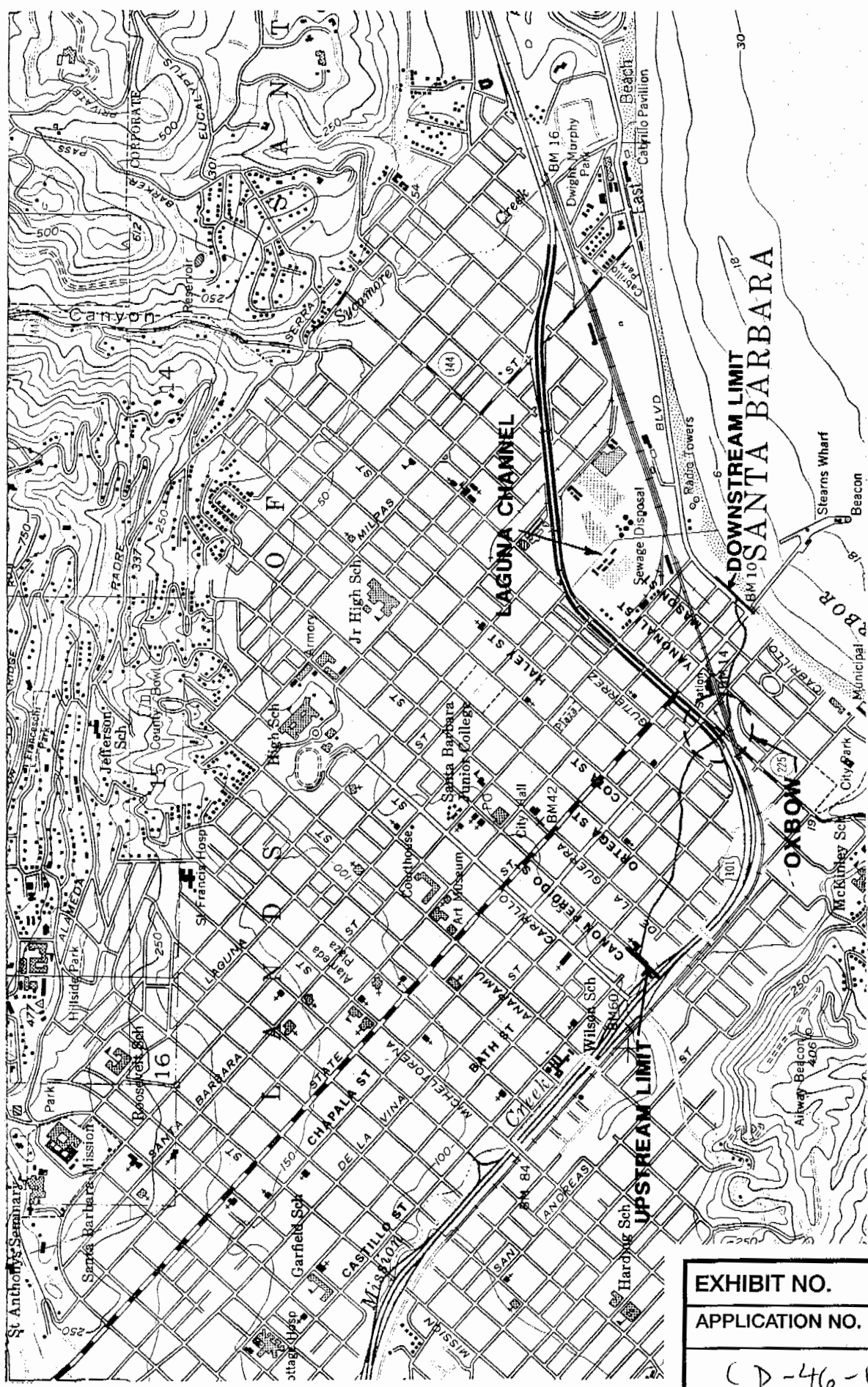
*existing bank treatments that have already adversely affected the stream's visual quality; and 4) the floodwalls will be constructed out of sandstone which will be more aesthetically pleasing than the current bank treatments and the project will include planting of vegetation that will also improve the visual quality of the stream. Finally, through the PED consistency review, the Commission will be able to ensure that the final design will protect and improve visual resources. Therefore, the Commission finds that the proposed project is consistent with the view protection policies of the Coastal Act.*

The Corps's submittal includes several measures providing both habitat benefits, as described above, as well as aesthetic improvements. The landscaping proposal (Exhibits 5-6) provides for planting, monitoring, and maintaining native riparian habitat within the creek, planting riparian habitat within Corps'- and City-controlled areas adjacent to the creek banks, providing incentives for private landowners to plant additional riparian habitat adjacent to the creek banks, monitoring the landscaping plans to assure they meet identified success criteria, removing concrete from the creek bottom (except under four bridges), and the above-discussed designs for floodwalls that, to the degree possible, mimic a natural creek bank. With the measures included in the revised design, monitoring, maintenance plans, and as conditioned, the Commission finds that the project would improve scenic public views and be consistent with the visual resource protection policy (Section 30251) of the Coastal Act.

**VI. Substantive File Documents:**

1. Consistency Determination CD-117-99, Army Corps, Mission Creek Flood Control Project.
2. Landscape Plan, Lower Mission Creek Flood Control Project, U.S. Army Corps of Engineers and City of Santa Barbara, April 2006.
3. Genetics of *Eucyclogobius newberryi* in Mission Creek Santa Barbara: a regional metapopulation analysis using mitochondrial control region sequence and microsatellites. Prepared for Army Corps of Engineers 8/19/05, D. K. Jacobs, K. D. Louie, D. A. Earl, C. Bard, C. Vila & C.C. Swift, Department of Ecology & Evolution, UCLA.
4. Santa Barbara County Streams – Lower Mission Creek, Feasibility Study Hydraulic Technical Appendix, Sedimentation Engineering, Army Corps of Engineers November 1999.
5. Final Environmental Impact Statement/Environmental Impact Report and Feasibility Study for Lower Mission Creek Flood Control Project, Santa Barbara, California, September 2000.

6. Biological Assessments, Lower Mission Creek Flood Control Project, Santa Barbara, California, December 1999.
7. Draft Fish and Wildlife Coordination Act Report, Lower Mission Creek Flood Control Project, Santa Barbara, California, U.S. Fish and Wildlife Service, September 1999.
8. Biological Opinion for the Lower Mission Creek Flood Control Project, Santa Barbara, County California, National Marine Fisheries Service, August 2, 2000.
9. Biological Opinion for the Lower Mission Creek Flood Control Project, Santa Barbara, County California, U.S. Fish and Wildlife Service, June 1, 2001.



SANTA BARBARA COUNTY STREAMS  
 LOWER MISSION CREEK

EXHIBIT NO. 1  
 APPLICATION NO. CD-117-99

California Coastal Commission

LOCATION MAP

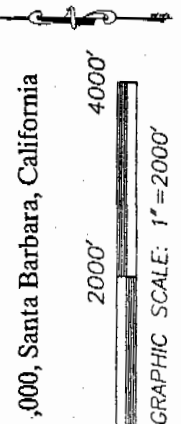


EXHIBIT NO.	1
APPLICATION NO.	CD-46-06

1000, Santa Barbara, California

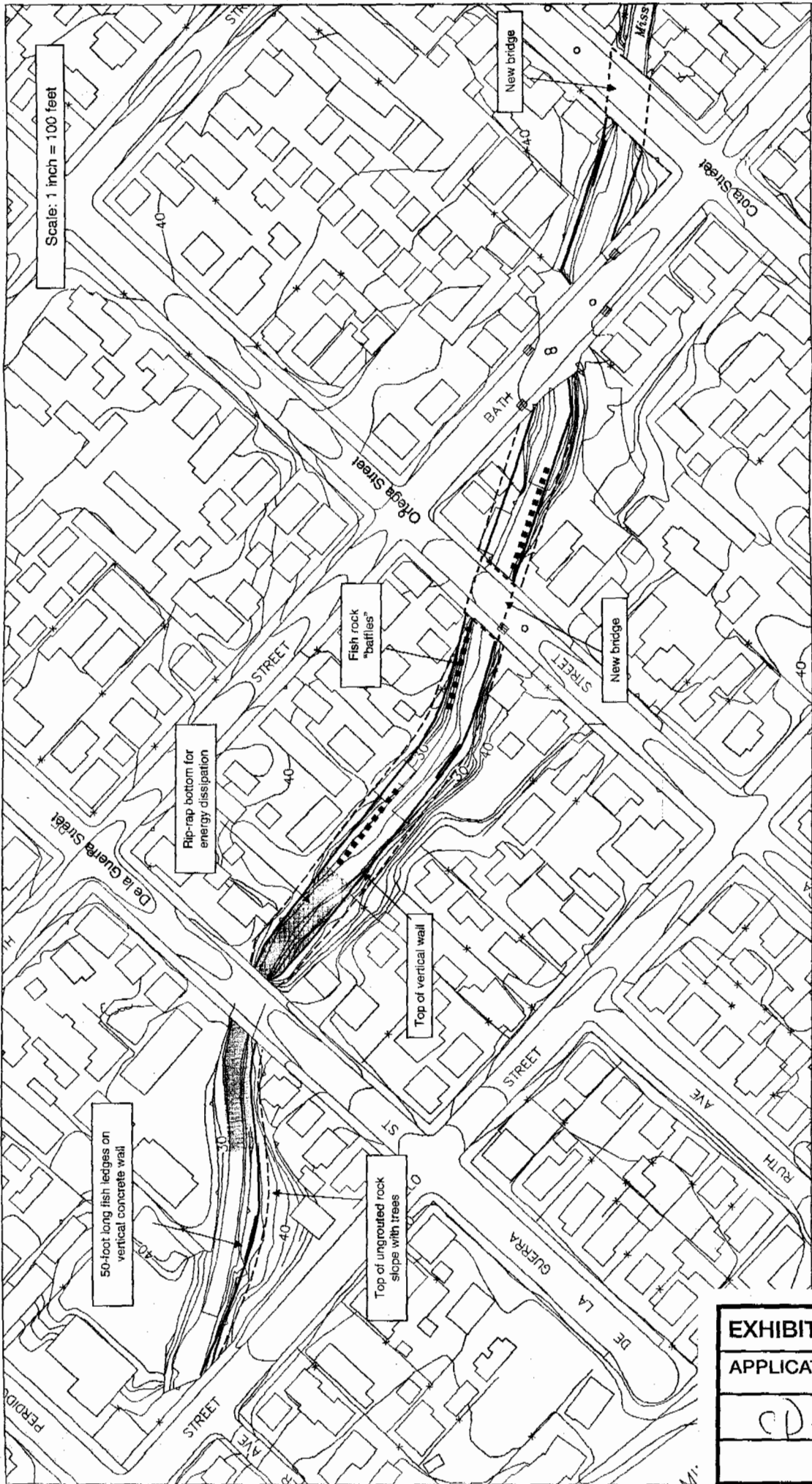


Figure 2a. Overview of New Channel Upstream of Highway 101

EXHIBIT NO.	2
APPLICATION NO.	
CD-46-06	



Figure 2b. Overview of New Channel Upstream of Highway 101

EXHIBIT NO.	3
APPLICATION NO.	
	CD-46-06

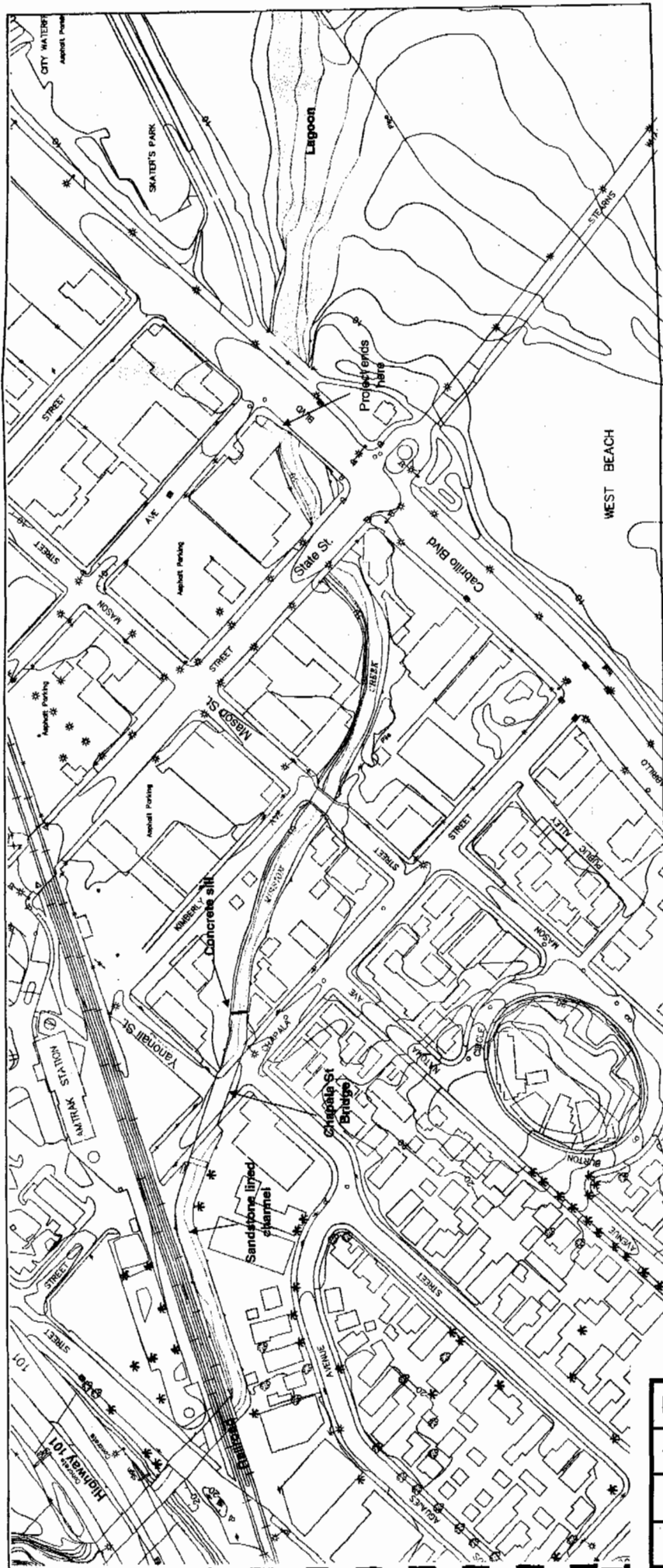
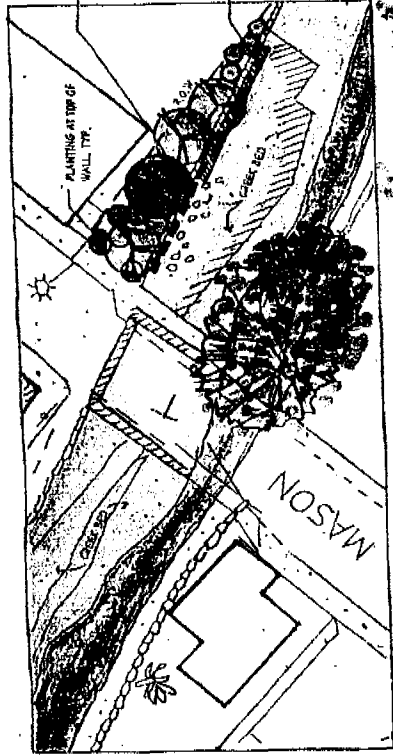
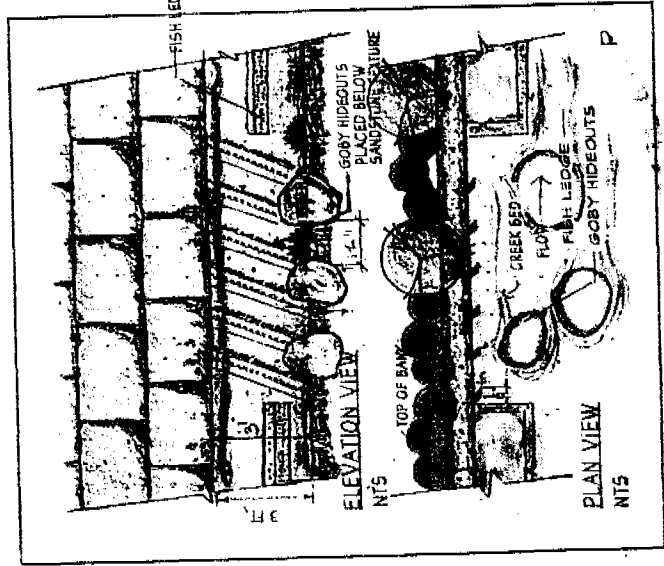


Figure 1. Mission Creek Estuary

EXHIBIT NO.	4
APPLICATION NO.	
	CD-46-06



- Goby HIDEOUTS (CONCRETE)**
- 3 FT. HIGH (AT HIGH WATER MARK)
  - PROTRUDES 3 IN. FROM FACE OF VERTICAL WALL
  - 5 IN EACH SEQUENCE, SPACED AT 12' O.C.
  - PLACED BELOW SANDSTONE-TEXTURE FACE OF VERTICAL WALL
  - TEXTURED/ROUGH FINISH (SANDBLASTED PLYWOOD FORMS)

- FISH LEDGE**
- CONC. LEDGE 24" WIDE, 30 TO 50 LENGTH
  - RAISED 10-20 IN ABOVE CREEK BED
  - 5 IN. CONC. LIP ON TOP SURFACE TO HOLD 6 IN. SOIL LAYER FOR SALTGRASS PLANTINGS TO SOFTEN VISUAL IMPACT

**PLANTING AT TOP OF WALL, TYPICAL**

**VERTICAL WALL WITH SIMULATED SANDSTONE TEXTURE**

R.O.W.

60'-0"

- Goby HIDEOUTS (CONCRETE)**
- 3 FT. HIGH (AT HIGH WATER MARK)
  - PROTRUDES 3 IN. FROM FACE OF VERTICAL WALL
  - 5 IN EACH SEQUENCE, SPACED AT 12' O.C.
  - PLACED BELOW SANDSTONE-TEXTURE FACE OF VERTICAL WALL
  - TEXTURED/ROUGH FINISH (SANDBLASTED PLYWOOD FORMS)

- FISH LEDGE**
- CONC. LEDGE 24" WIDE, 30 TO 50 LENGTH
  - RAISED 10-20 IN ABOVE CREEK BED
  - 5 IN. CONC. LIP ON TOP SURFACE TO HOLD 6 IN. SOIL LAYER FOR SALTGRASS PLANTINGS TO SOFTEN VISUAL IMPACT

**CREEK CHANNEL**

**Goby HIDEOUTS AND FISH LEDGES**  
TYPICAL SECTION  
NOT TO SCALE

**LOWER MISSION CREEK - ARMY CORPS OF ENGINEERS**

**PREFERRED PROJECT: ALTERNATE 12**

PREPARED FOR THE CITY OF SANTA BARBARA, AND THE COUNTY OF SANTA BARBARA  
BY PENFIELD AND SMITH AND DAVID R. BLACK AND ASSOCIATES

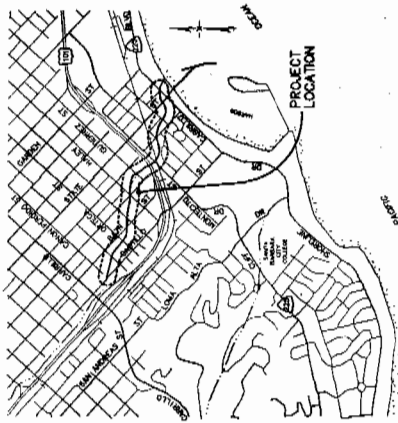
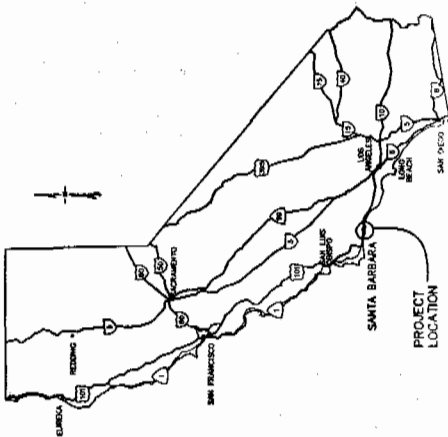
EXHIBIT NO.	5
APPLICATION NO.	1
CA-46-06	

Figure 3. Fish Enhancement Features

# LANDSCAPE PLAN LOWER MISSION CREEK

CITY OF SANTA BARBARA  
US ARMY CORPS OF ENGINEERS  
SANTA BARBARA COUNTY FLOOD CONTROL  
AND WATER CONSERVATION DISTRICT

APRIL 2006



- INDEX TO SHEETS
- 1 TITLE SHEET
  - 2 LANDSCAPE PLAN - CANTON PERDIDO ST. TO DE LA GUERRA ST.
  - 3 LANDSCAPE PLAN - DE LA GUERRA ST. TO COTA ST.
  - 4 LANDSCAPE PLAN - COTA ST. TO GUTIERREZ ST.
  - 5 LANDSCAPE PLAN - GUTIERREZ ST. TO YANONALI ST.
  - 6 LANDSCAPE PLAN - YANONALI ST. TO CASRILLO BLVD.
  - 7 LANDSCAPE PLAN - DETAILS AND SECTIONS
  - 8 LANDSCAPE PLAN - DETAILS AND SECTIONS
  - 9 LANDSCAPE PLAN - DETAILS

GENERAL NOTES:

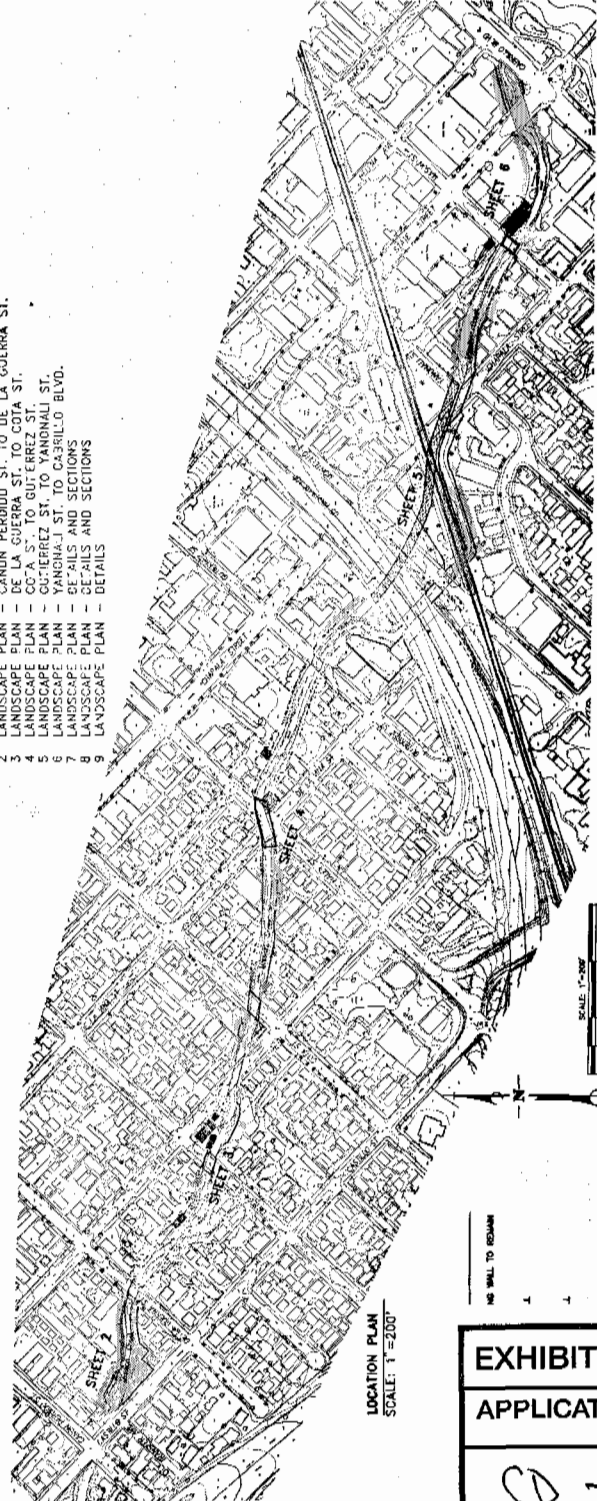
ALL CHANNEL MEASUREMENTS TO BE COMPLETED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

1. MEASUREMENTS TO BE COMPLETED BY THE LOWER MISSION CREEK FLOOD CONTROL DISTRICT SURVEYORS. CHANNEL SURVEYING SHALL INCLUDE THE FOLLOWING:
  - A. U.S. TOP AND MIDDLE SURVEYING PLANS, INCLUDING ALL SURVEY POINTS AND MARKS.
  - B. WIRELESS TOTAL STATION SURVEYING AND BENCHMARKS.
2. CHANNEL DESIGN ASSUMPTIONS: LOWER MISSION CREEK FLOOD CONTROL PROJECT, JUNE 2004, PREPARED BY LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS.
3. LOWER MISSION CREEK FLOOD CONTROL PROJECT ACQUIRE CHANNEL MAINTENANCE PLAN, SANTA BARBARA COUNTY FLOOD CONTROL DISTRICT, JUNE 2005.

SURVEYOR'S NOTES:

DESIGNED BY PENFIELD & SMITH AND TOTAL DESIGN SERVICES FOR THE CITY OF SANTA BARBARA. FIELD SURVEYING AND DESIGN DURING THE DATE OF PHOTOGRAPHY IS APRIL 11, 2006.

DATE: 04/11/06  
DRAWN: J. SMITH  
CHECKED: J. SMITH  
SCALE: AS SHOWN



		CITY OF SANTA BARBARA, CALIFORNIA REVIEWED BY: _____ SIGNATURE: _____ DATE: _____
PROJECT NO.: 06-001 SHEET NO.: 1 OF 9 PLAN DATE: 10 MAY 2006	LANDSCAPE PLAN LOWER MISSION CREEK CITY OF SANTA BARBARA, CALIFORNIA	CITY OF SANTA BARBARA, CALIFORNIA REVIEWED BY: _____ SIGNATURE: _____ DATE: _____

EXHIBIT NO. 6  
APPLICATION NO.  
CD-46-06

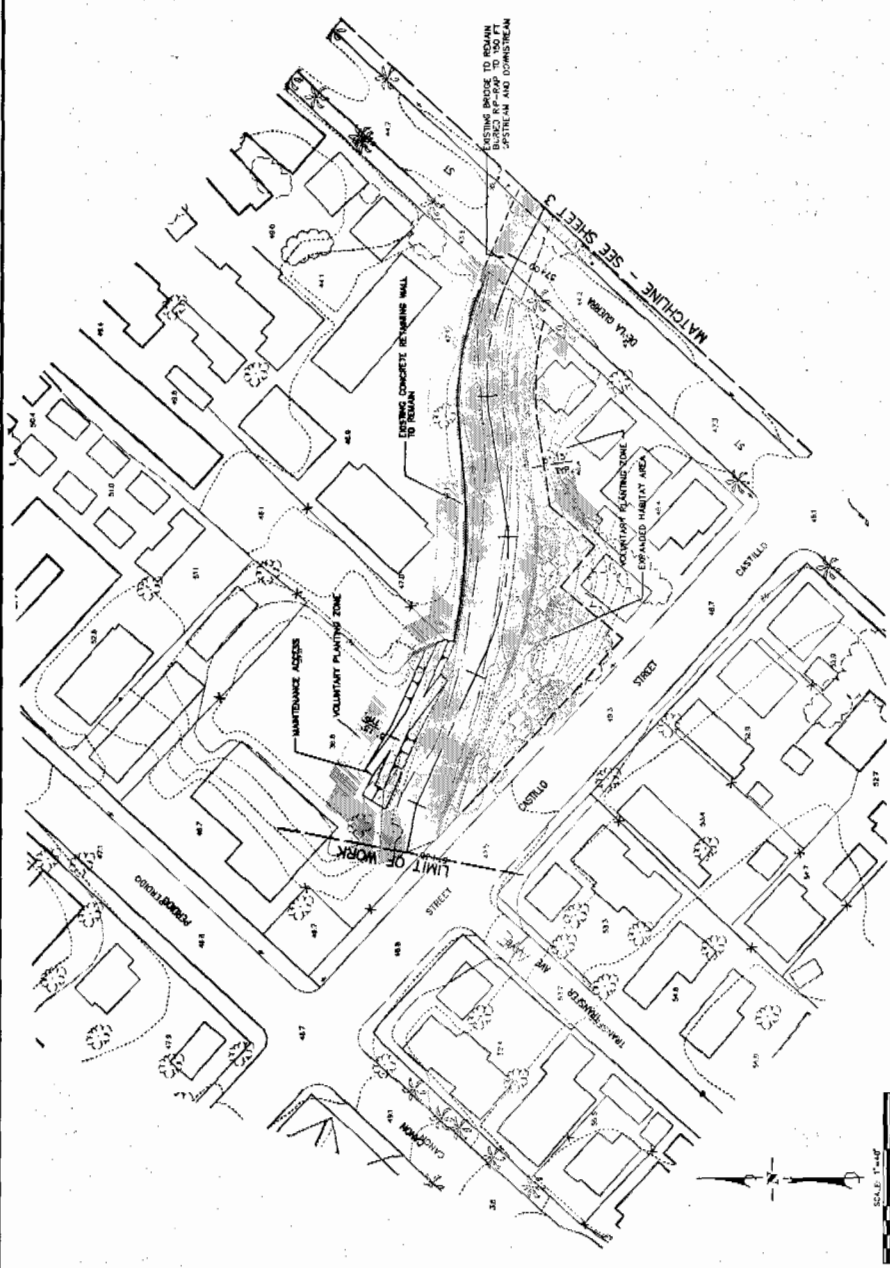


**PLANTING NOTES:**

1. ALL TREES AND SHRUBS PLANTED AS PART OF THE RESTORATION PLAN SHALL BE OBTAINED FROM CUTTINGS AND SEED FROM THE RESTORATION PROJECT. ALL PLANT MATERIALS SHALL BE COLLECTED FROM THE MESSON CREEK WATERSHED. ALL PLANT MATERIALS SHALL BE SUPPLIED BY THE OWNER AND DELIVERED TO THE PROJECT SITE. ALL TREES SHALL BE A MIN. OF 10, 8 AND 4 GALLON SPECIMENS. ALL SHRUBS AND GRASSES SHALL BE 1 GALLON SIZE.
2. PLANTS FOR THE VOLUNTARY PLANTING ZONE WILL BE PROVIDED BY THE CITY TO PROMOTE PROPERTY OWNERS FOR PLANTING AND CARE. THE PLANTS WILL BE ACCOMPANIED BY APPROPRIATE INSTRUCTIONS FOR PLANTING AND CARE OF NURSERY PLANTS. PLANTS MADE AVAILABLE OF THE VOLUNTARY PLANTING ZONE WILL BE A SUBSET OF THE SPECIES TO BE PLANTED WITHIN THE PROJECT AREA.
3. ALL TREE AND SHRUB PLANTINGS SHALL BE PLANTED IN ACCORDANCE WITH ALL LANDSCAPE INDUSTRY STANDARDS AND PRACTICES FOR THE PLANTING OF NATIVE PLANT MATERIALS.
4. ALL TREE PLANTINGS SHALL BE INSTALLED IN CONCRETE BEDS OF APPROPRIATE SIZE AND DIAMETER WHICH HAVE BEEN INTEGRATED AND FLUSH-MOUNTED IN THE UNDISTURBED BIODIVERSITY ON ALL SLOPE AREAS. BACKFILL FOR ALL PLANTING BEDS SHALL BE NATIVE SOIL AMENDED WITH 100-TONS/ACRYL FERTILIZER PER MANUFACTURER'S RECOMMENDATIONS, OR APPROVED EQUIVALENT.
5. ALL SHRUB PLANTINGS SHALL BE PLANTED IN THE OVERLAY OF DISTURBED TROPICAL AND IN THE INTERSTICES OF THE BIODIVERSITY AT THE PROJECT SITE. ALL SHRUB PLANTING BEDS SHALL BE ENCLOSED WITH NATIVE SOIL AMENDED WITH 100-TONS/ACRYL FERTILIZER PER MANUFACTURER'S RECOMMENDATIONS, OR APPROVED EQUIVALENT.
6. ALL WILLOW CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS AND COLLECTED LOCALLY (I.E. SOUTH COAST WATERSHED). ALL WILLOW CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS OF COLLECTION. ALL WILLOW CUTTINGS SHALL BE PLANTED ALONG MESSON CREEK (SPROCKER PIER, CANAL, 1999) AS A POSSIBLE SOURCE FOR SUCH CUTTINGS.
7. ALL WILLOW CUTTINGS SHALL BE PLANTED WITHIN 24 HOURS OF HARVESTING. IF THIS IS NOT POSSIBLE, WILLOWS SHALL BE KEPT COVERED AND WET AND THEN PLANTED AS SOON AS POSSIBLE. TO SPROUT VEGETATIVELY, ALL WILLOW CUTTINGS SHALL BE ROOTED ON A REGULAR BASIS UNTIL FULLY ROOTED AND ESTABLISHED.
8. IN ORDER TO HELP PROTECT VEGETATED AREAS AND TO DISCOURAGE THE USE OF LOWER MESSON CREEK BANK AREAS BY PEOPLE, THE FOLLOWING NATIVE SPECIES SHALL PREDOMINATE IN THE UPPER PORTIONS OF THE BANKS: RIBES SPECIOSUM, RUBUS URSINUS, AND ROSA CALIFORNICA.
9. ALL TREE AND SHRUB PLANTINGS SHALL BE ARRANGED AND PLANTED IN AS NATURAL AND RANDOM A MANNER AS POSSIBLE. THE FINAL PLACEMENT OF ALL PLANTINGS SHALL BE REVIEWED AND APPROVED BY THE PROJECT ENGINEER.
10. THE GROWTH RATE AND PHYSICAL CONDITION OF ALL TREES AND SHRUBS SHALL BE DOCUMENTED FOR A PERIOD OF ONE (1) YEAR. ALL MONITORING CONDITIONS AND REQUIREMENTS SHALL BE CONSISTENT WITH THOSE OUTLINED IN THE PROJECT MITIGATION MONITORING PLAN AND THE ENVIRONMENTAL COMMITMENTS OF THE PROJECT DESIGN.

**IRRIGATION NOTES:**

1. ALL PLANTING AREAS SHALL BE SERVED BY AN AUTOMATIC DRIP IRRIGATION SYSTEM.
2. THE IRRIGATION SYSTEM SHALL CONSIST OF MAINLINE & SUB MAINLINE WITHIN AREAS (WHERE A SIGNAL REMOTE CONTROL VALVE WITH BATTERY OPERATED ACTUATOR, PRESSURE MAINLINE, LATERAL, SPACED AND 1/2" DRAIN LINES). ALL DRIP EMITTERS SHALL BE PRESSURE COMPENSATING.
3. ALL IRRIGATION LINES SHALL BE SURFACE-MOUNTED AND STAKED. ALL MAINLINE AND LATERAL LINE PIPE SHALL BE UV-RESISTANT TYPE (BROWN/BLACK).
4. ALL PLANT MATERIALS SHALL BE SERVED ON A REGULAR BASIS THROUGHOUT THE PLANT ESTABLISHMENT PERIOD. UPON COMPLETION OF THE ESTABLISHMENT PERIOD, ALL IRRIGATION EQUIPMENT SHALL BE REMOVED.



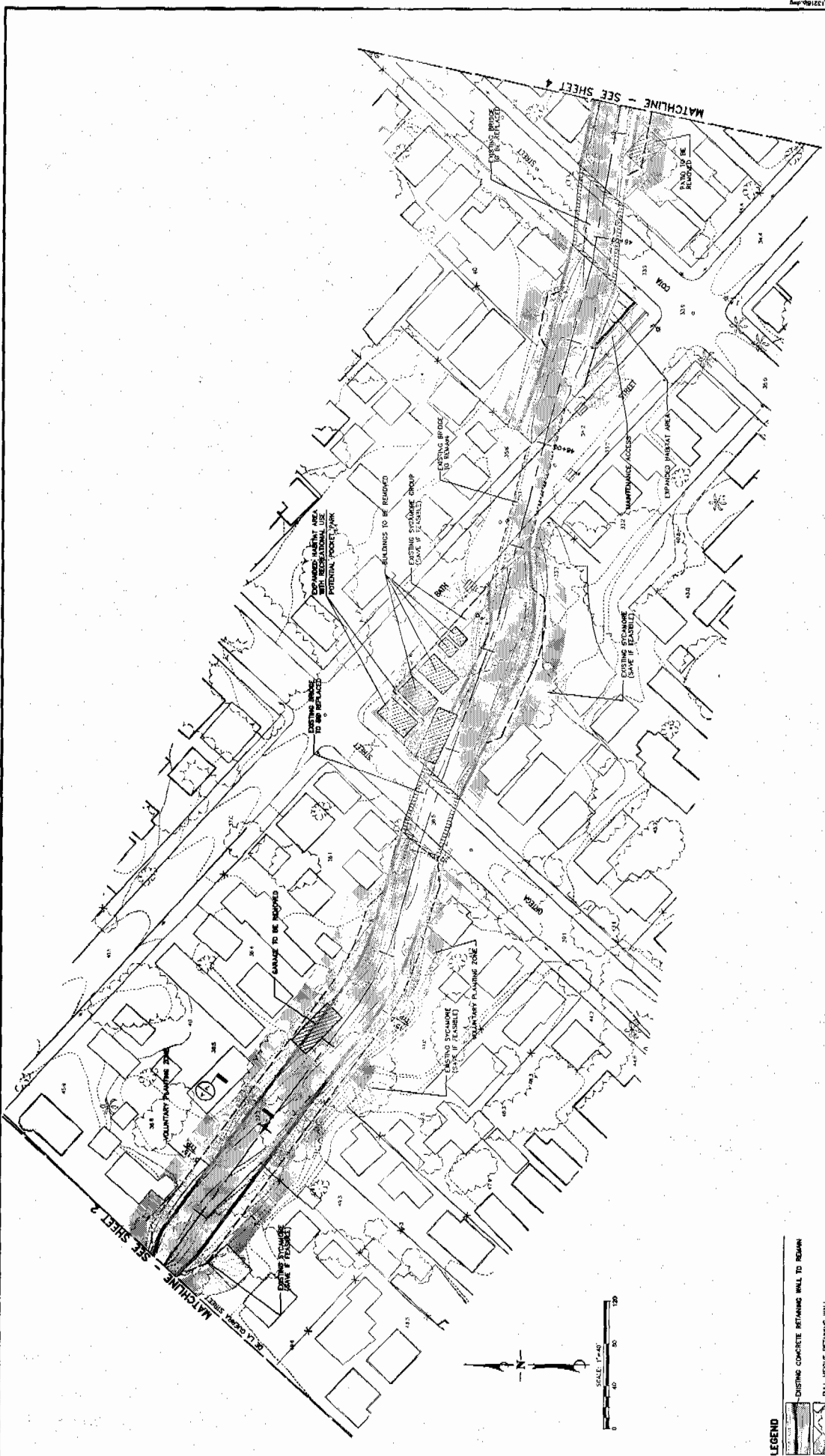
**PLANT LEGEND**

TREES	BOTANICAL NAME (COMMON NAME)
	PLATANUS RACEMOSA (WESTERN STICAMORE)
	POPULUS FREMONTII (COTTONWOOD)
	QUERCUS AGRIFOLIA (COAST LYE OAK)
	UMBELLULARIA CALIFORNICA (CALIFORNIA BAY)
	SHRUBS AND GRASSES (SEE SHEETS 7 & 8)

**LEGEND**

	EXISTING CONCRETE RETAINING WALL TO REMAIN
	FULL HEIGHT RETAINING WALL
	HALF HEIGHT RETAINING WALL
	VOLUNTARY PLANTING ZONE

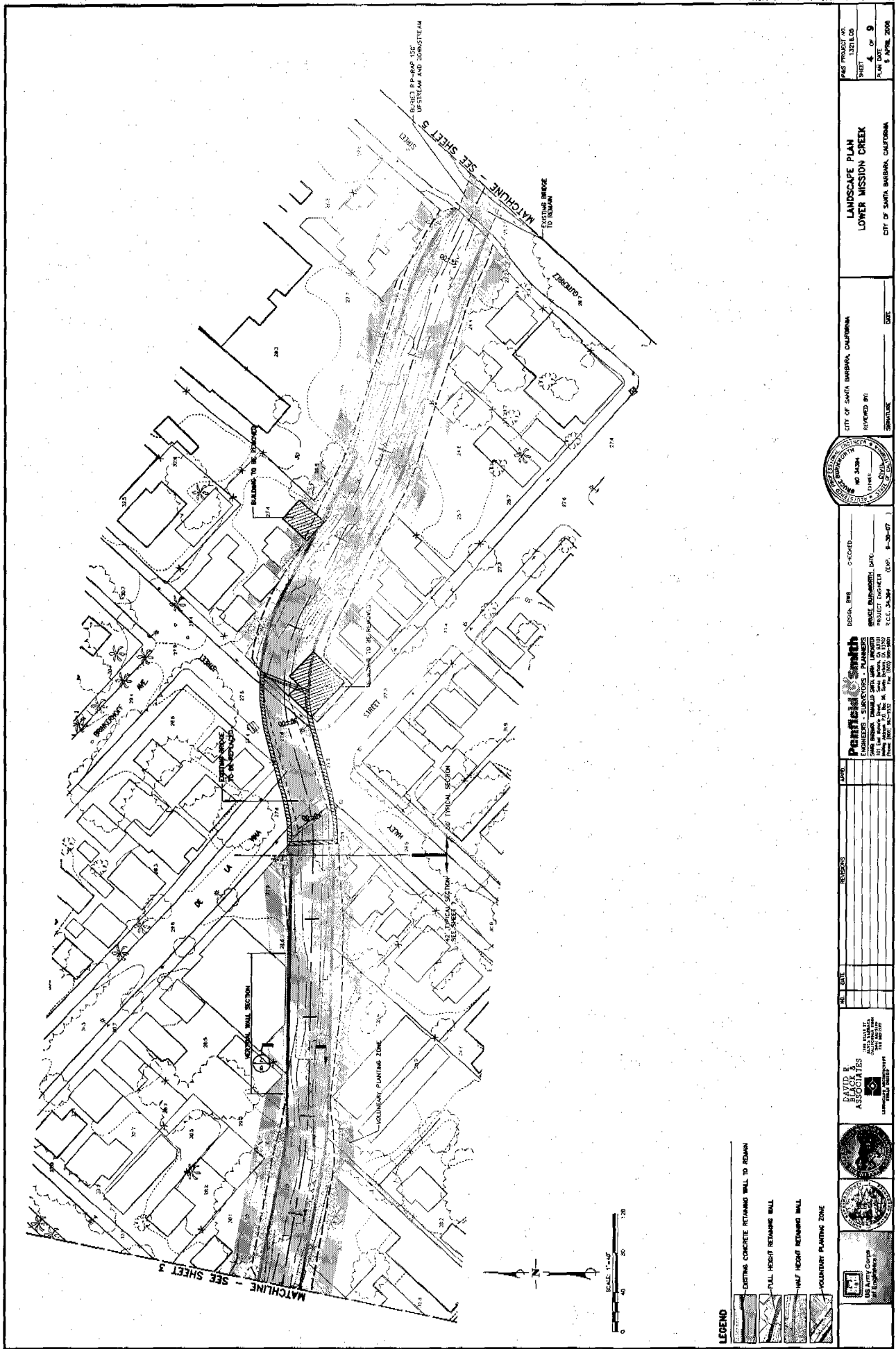
PROJECT NO. 123456  
 SHEET 2 OF 8  
 PLAN DATE 10 MAY 2008  
 CITY OF SANTA BARBARA, CALIFORNIA  
 LANDSCAPE PLAN  
 LOWER MISSION CREEK  
 CITY OF SANTA BARBARA, CALIFORNIA  
 PREPARED BY: [Name]  
 DATE: [Date]  
 SCALE: 1" = 40'  
 CHECKED: [Name]  
 BRUCE BURNHOLD, DATE: [Date]  
 PROJECT ENGINEER  
 1010 E. SANTA BARBARA AVENUE, SUITE 200  
 SANTA BARBARA, CA 93101  
 TEL: 805.965.1234  
 FAX: 805.965.5678  
 WWW.PENFIELD-SMITH.COM  
 PENFIELD SMITH  
 ENGINEERS - ARCHITECTS - PLANNERS  
 1010 E. SANTA BARBARA AVENUE, SUITE 200  
 SANTA BARBARA, CA 93101  
 TEL: 805.965.1234  
 FAX: 805.965.5678  
 WWW.PENFIELD-SMITH.COM  
 DAVID B. SMITH  
 ARCHITECT  
 1010 E. SANTA BARBARA AVENUE, SUITE 200  
 SANTA BARBARA, CA 93101  
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 FAX: 805.965.5678  
 WWW.PENFIELD-SMITH.COM  
 U.S. Army Corps of Engineers  
 1010 E. SANTA BARBARA AVENUE, SUITE 200  
 SANTA BARBARA, CA 93101  
 TEL: 805.965.1234  
 FAX: 805.965.5678  
 WWW.PENFIELD-SMITH.COM



- LEGEND**
- EXISTING CONCRETE RETAINING WALL TO REMAIN
  - FULL HEIGHT RETAINING WALL
  - HALF HEIGHT RETAINING WALL
  - VOLUNTARY PLANTING ZONE



	<p><b>David R. Smith</b>          ASSOCIATES          ENGINEERS - PLANNERS - ARCHITECTS          101 W. SANTA ANA ST., SUITE 200, SANTA ANA, CA 92701          TEL: (714) 241-1111 FAX: (714) 241-1112          WWW.DRS-ASSOCIATES.COM</p>	<p>CITY OF SANTA BARBARA, CALIFORNIA          REVISION BY: _____          DATE: _____</p>	<p><b>LANDSCAPE PLAN</b>  <b>LOWER MISSION CREEK</b>          CITY OF SANTA BARBARA, CALIFORNIA</p>
<p>DATE: 4/28/2004          TIME: 4:18:20 PM          PLOT: 87/C/04/01</p>	<p>SCALE: SEE 6-6000          PROJECT: BARRIERE AVE          PROJECT NUMBER: 011          P.C.I. 24-204 (L.P. 4-10-07)</p>	<p>AS PROJECT NO. 12345678          SHEET 3 OF 9          DATE: 8 APRIL 2004</p>	



**LEGEND**

- CHITING CONCRETE RETAINING WALL TO REMAIN
- FULL HEIGHT RETAINING WALL
- HALF HEIGHT RETAINING WALL
- BOUNDARY PLANTING ZONE



**DAVID & ASSOCIATES**  
 CIVIL ENGINEERS  
 1000 S. GARDEN ST.  
 SUITE 100  
 ANAHEIM, CA 92805  
 TEL: 714.771.1111  
 FAX: 714.771.1112

NO.	DATE	REVISIONS

**Perennial Smith**  
 LANDSCAPE ARCHITECTS IN LANDSCAPE  
 2000 S. GARDEN ST. SUITE 100  
 ANAHEIM, CA 92805  
 TEL: 714.771.1111  
 FAX: 714.771.1112

DESIGNER: PERENNIAL SMITH  
 CHECKED: [ ]  
 PROJECT ENGINEER: DATE: [ ]  
 PROJECT ARCHITECT: DATE: [ ]  
 C.C.E. 30384 (Exp. 6-30-07)



CITY OF SANTA BARBARA, CALIFORNIA  
 APPROVED BY: [ ]  
 SIGNATURE: [ ]

**LANDSCAPE PLAN**  
**LOWER MISSION CREEK**  
 CITY OF SANTA BARBARA, CALIFORNIA

THIS PROJECT HAS 13 SHEETS  
 SHEET 4 OF 9  
 PLAN DATE: 8 APRIL 2008



THIS PROJECT NO. 12178  
 SHEET 5 OF 9  
 PLAN DATE 8 APRIL 2008

**LANDSCAPE PLAN**  
**LOWER MISSION CREEK**  
 CITY OF SANTA BARBARA, CALIFORNIA

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_

**DAVID J. SMITH ASSOCIATES**  
 1011 W. SANTA BARBARA STREET, SUITE 100  
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**Penfield & Smith**  
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 TEL: 805.964.1111 FAX: 805.964.1112

CHECKED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT ENGINEER: \_\_\_\_\_  
 PROJECT NO. 12178

DATE: \_\_\_\_\_  
 SHEETS: \_\_\_\_\_

U.S. Army Corps of Engineers  
 U.S. Army District Office  
 Santa Barbara, California

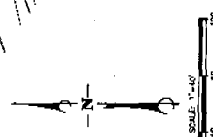
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 Santa Barbara, California

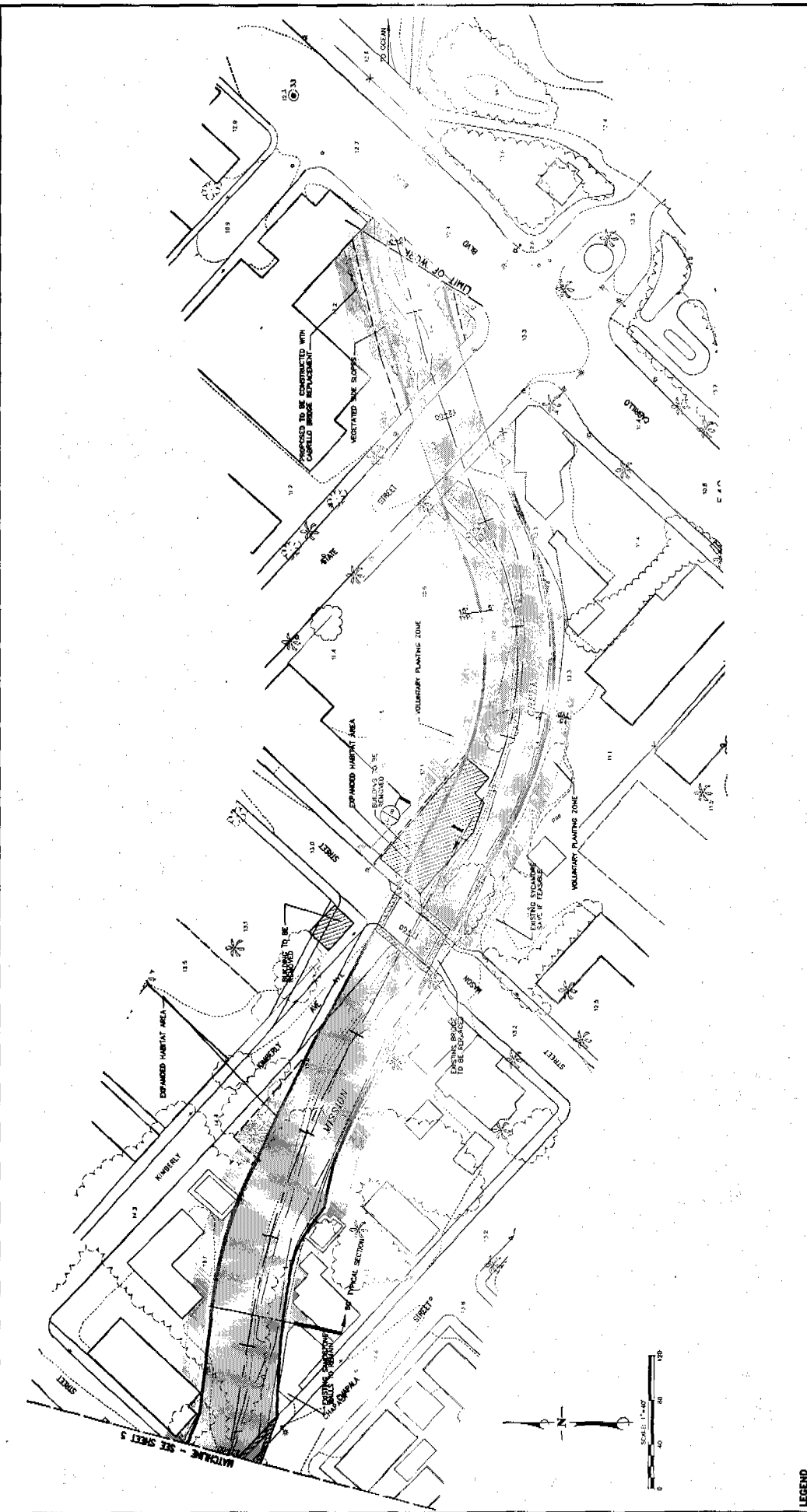
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 Santa Barbara, California

U.S. Army Corps of Engineers  
 U.S. Army District Office  
 Santa Barbara, California

**LEGEND**

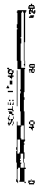
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- HALF HEIGHT RETAINING WALL
- VOLUNTARY PLANTING ZONE





**LEGEND**

- [Symbol] EXISTING CONCRETE REMAINS WILL TO REMAIN
- [Symbol] FULL HEIGHT RETAINING WALL
- [Symbol] HALF HEIGHT RETAINING WALL
- [Symbol] VOLUNTARY PLANTING ZONE



PLAN SHEET NO. 6 OF 9  
 SHEET DATE: 8 APRIL 2008  
 PROJECT: LANDSCAPE PLAN LOWER MISSION CREEK  
 CITY OF SANTA BARBARA, CALIFORNIA

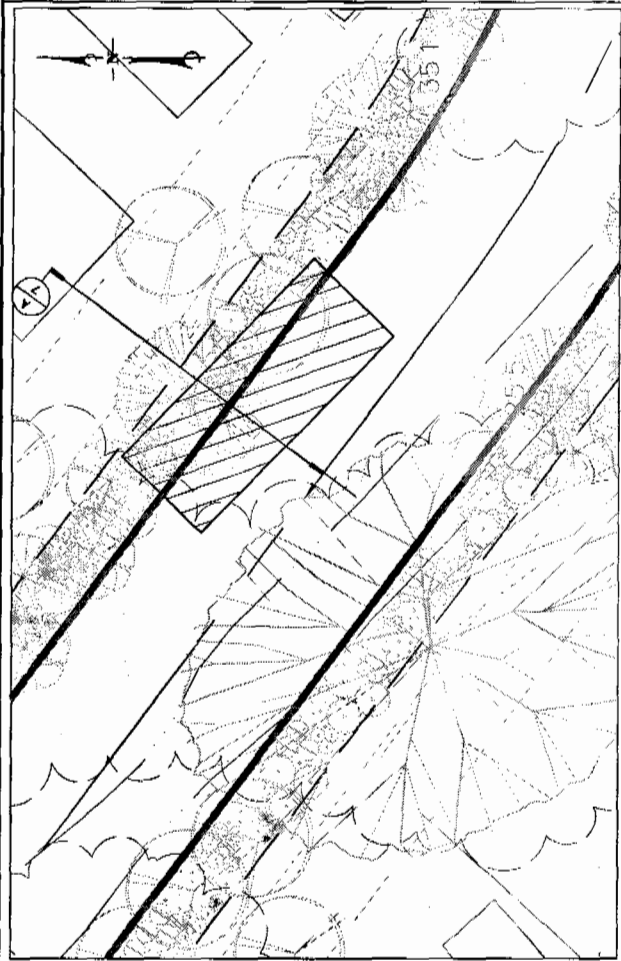
DESIGNED BY: [Name]  
 CHECKED BY: [Name]  
 PROJECT ENGINEER: [Name]  
 DATE: 8-26-07

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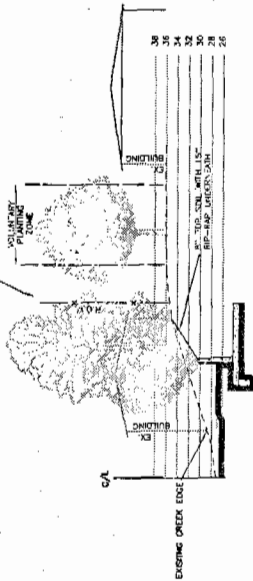
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100' 0" 200' 0" 400' 0" 800' 0" 1600' 0"  
 1" = 400'

MARYKANE - SEE SHEET 5  
 TYPICAL SECTION  
 EXISTING CONCRETE REMAINS WILL TO REMAIN  
 EXPANDED HABITAT AREA  
 VOLUNTARY PLANTING ZONE  
 RESTATED THE SUPPORTS  
 PROPOSED TO BE CONSTRUCTED WITH CARROLL BRIDGE REPLACEMENT  
 DUNIT OF MISSION  
 MISSION  
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 SHEET 4  
 SHEET 3  
 SHEET 2  
 SHEET 1



VEGETATED SIDE SLOPE - PLAN  
SCALE: 1"=10'



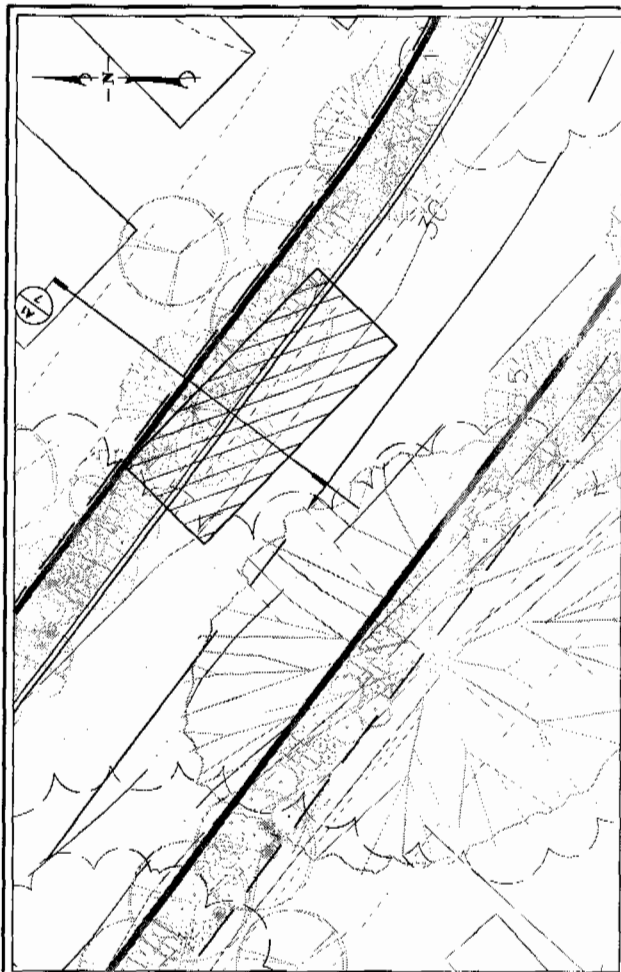
VEGETATED SIDE SLOPE - TYPICAL SECTION "A"  
SCALE: VERT. 1"=10'

**PLANT LEGEND**

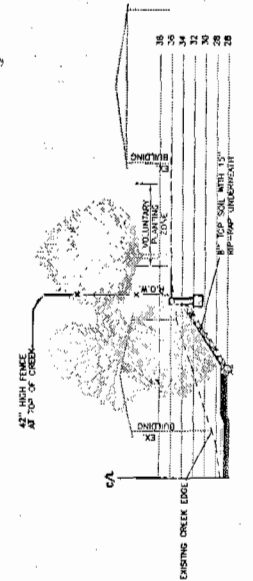
TREES	SYMBOL	BOTANICAL NAME (COMMON NAME)
		PLATANUS RACEMOSA (WESTERN SYCAMORE)
		POPULUS FREMONTII (COTTONWOOD)
		QUERCUS AGRIFOLIA (COAST LIVE OAK)
		UMBELLULARIA CALIFORNICA (CALIFORNIA BAY)

SHRUBS	SYMBOL	BOTANICAL NAME (COMMON NAME)
		HETEROMELES ARBUTIFOLIA (TOYON)
		MALSODIA LAURINA (LAUREL SUMAC)
		BACCHARIS PILLULARIS (COYOTE BUSH) or ROSA CALIFORNICA (ROSE)
		PRUNUS ILICIFOLIA (HOLLY-LEAVED CHERRY) or RHUS INTEGRIFOLIA (LEMONADEBERRY)



VEGETATED SIDE SLOPE ALTERNATIVE - PLAN  
SCALE: 1"=10'



VEGETATED SIDE SLOPE ALTERNATIVE - TYPICAL SECTION "A1"  
SCALE: VERT. 1"=10'

UNDERSTORY PLANTS	SYMBOL	BOTANICAL NAME (COMMON NAME)
		SALIX LASIOLEPIS (ARROYO WILLOW)
		SAMBUCUS MEXICANA (MEXICAN ELDERBERRY) or BACCHARIS SALICIFOLIA (MOLEFAT)
		RHUS TRILOBATA (SQUAW BUSH)
		RHUS URBINIIS (BLACKBERRY) or RIBES SPECIOSUM (GOOSEBERRY)

GRASSES	SYMBOL	BOTANICAL NAME (COMMON NAME)
		LEYMUS CONDENSATUS (GIANT WILD RYE)
		MELIC GRASS (MELICA CALIFORNICUS)
		NASELLA PULCHRRA (PURPLE NEEDLEGRASS)
		LEYMUS CONDENSATUS (GIANT WILD RYE)

**Penfield Smith**  
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2015 W. 10th Street, Suite 200, San Bernardino, CA 92410  
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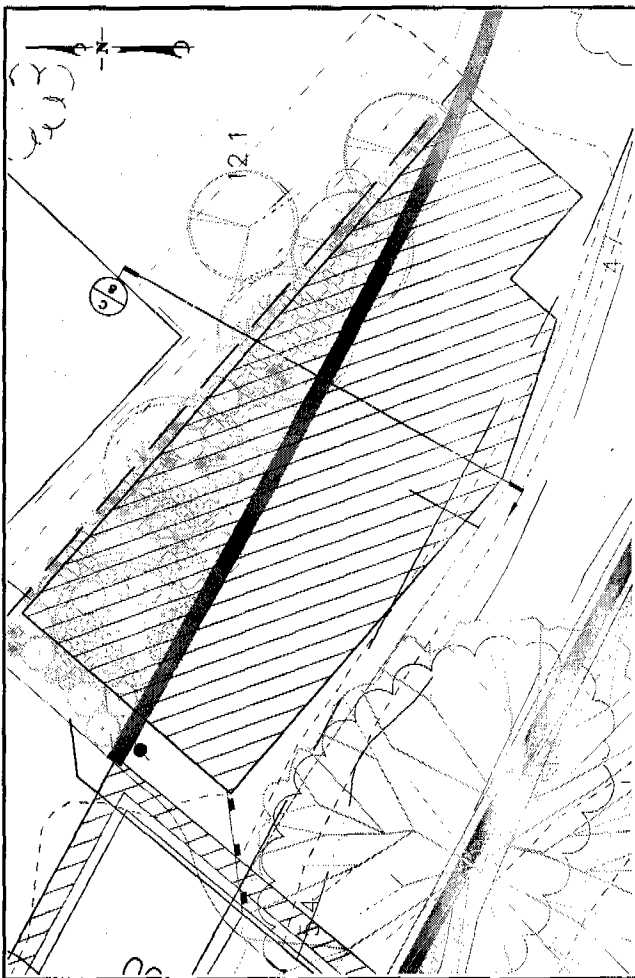
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**US Army Corps of Engineers**

**REG. PROJ. NO. 13278-00**  
**SHEET 7 OF 9**  
**DATE: 19 MAY 2008**

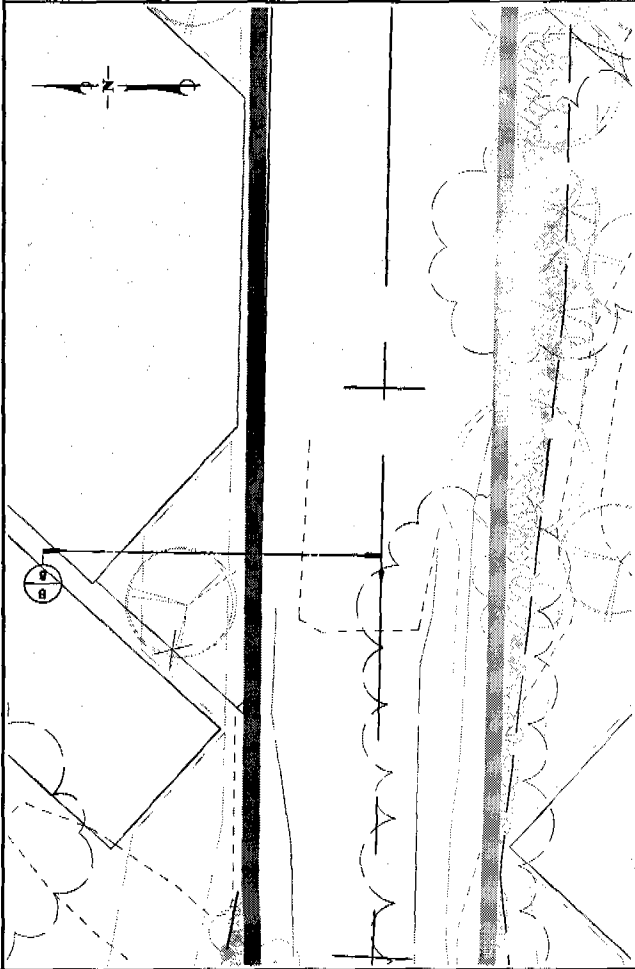
**LANDSCAPE PLAN**  
**LOWER MISSION CREEK**  
CITY OF SANTA BARBARA, CALIFORNIA

CITY OF SANTA BARBARA, CALIFORNIA  
REVISIONS BY: DATE:  
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CHECKED BY: DATE:

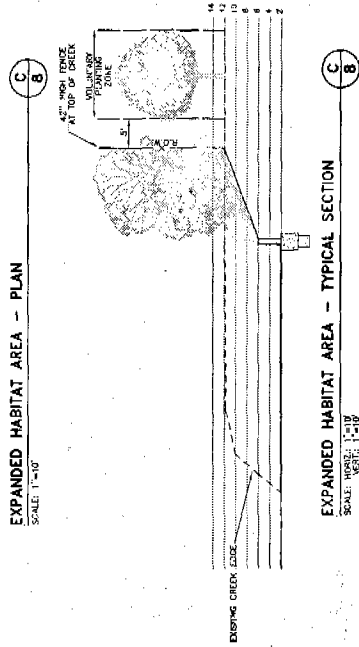


EXPANDED HABITAT AREA - PLAN  
SCALE: 1"=10'

VERTICAL WALL ON PIER FOOTING - PLAN  
SCALE: 1"=4'



VERTICAL WALL ON PIER FOOTING - TYPICAL SECTION  
SCALE: 1"=4'



EXPANDED HABITAT AREA - TYPICAL SECTION  
SCALE: 1"=4'

PLANT LEGEND

TREES

SYMBOL	BOTANICAL NAME (COMMON NAME)
	PLATANUS RACEMOSA (WESTERN STYCAMORE)
	POPULUS FREMONTRI (COTTONWOOD)
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SHRUBS

SYMBOL	BOTANICAL NAME (COMMON NAME)
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	PRUNUS ILICIFOLIA (HOLLY-LEAVED CHERRY) or RHUS INTEGRIFOLIA (LEMONADEBERRY)

UNDERSTORY PLANTS

SYMBOL	BOTANICAL NAME (COMMON NAME)	SYMBOL	BOTANICAL NAME (COMMON NAME)
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	SAMBUCUS MEXICANA (MEXICAN ELDERBERRY) or BACCHARIS SALICIFOLIA (MULEFAT)		LEYMUS CONDENSATUS (GIANT WILD RYE)
	RHUS TRILOBATA (SQUAW BUSH)		MELIC GRASS (MELICA CALIFORNICUS)
	RHUS URSINUS (BLACKBERRY) or RIBES SPECIOSUM (GOOSEBERRY)		NASELLA PULCHRA (PURPLE NEEDLEGRASS)
			LEYMUS CONDENSATUS (GIANT WILD RYE)

30-040 SAVE DATE: 5/10/2008 8:46:23 PM PLOT DATES: 5/11/2008 11:12:08 AM PLOT SCALE: 1"

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 License No. 50687  
 State of California  
 Date: 12/15/07

DESIGNED BY: [Name]  
 CHECKED BY: [Name]  
 PROJECT ENGINEER: [Name]  
 SCALE: 1"=4' (1"=10')

CITY OF SANTA BARBARA, CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 PROJECT: LOWER MISSION CREEK  
 SHEET: B OF B  
 PLAN DATE: 10 JULY 2008

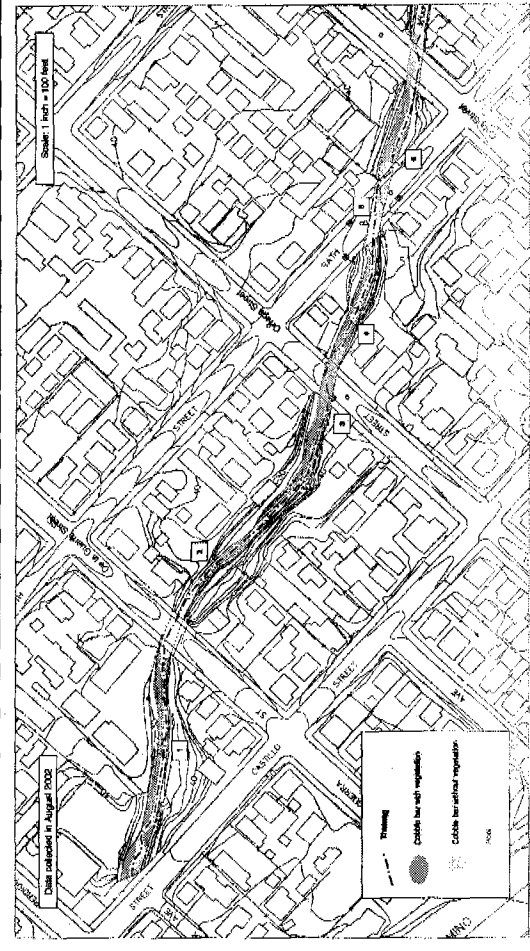


Figure 3a. Thalweg Alignment and Pools along Lower Mission Creek



Figure 3b. Thalweg Alignment and Pools along Lower Mission Creek

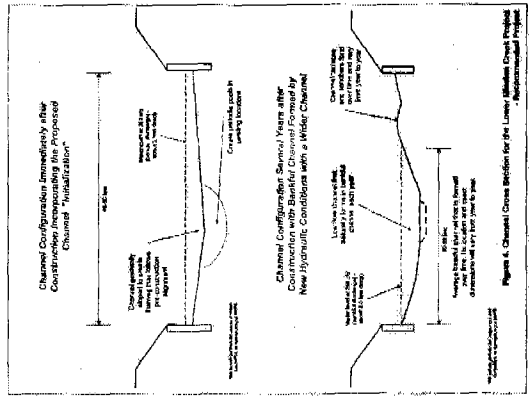


Figure 4. Channel Cross Section for the Lower Mission Creek Project - Blended Channel

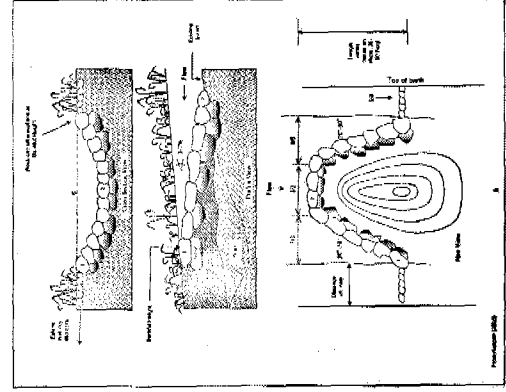


Figure 5. Pool Cross-View Views

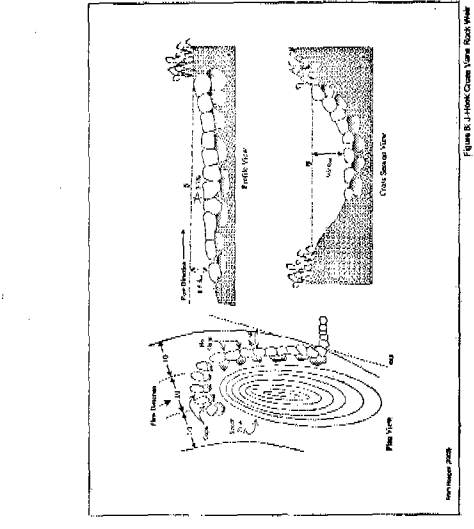


Figure 6. Pool Cross-View Views

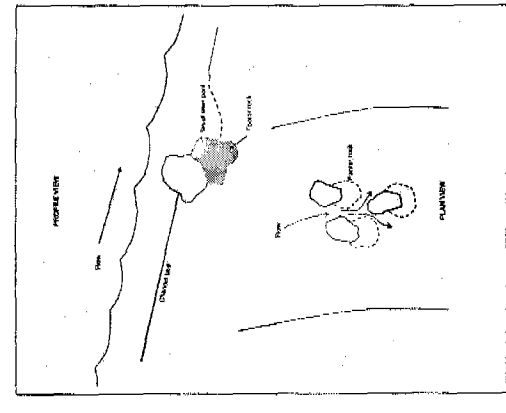


Figure 7. Blended Channel Cross Section

	<b>Penfield Smith</b> CIVIL ENGINEER 2000 W. 10th St., Suite 200 Santa Ana, CA 92705 Phone: (714) 961-1111 Fax: (714) 961-1112	PROJECT NO.: 03-015 SHEET: 9 OF 9 PLAN DATE: 8 APRIL 2008
	CITY OF SANTA BARBARA, CALIFORNIA REVIEWED BY: _____ SIGNATURE: _____ DATE: _____	DESIGN: _____ CHECKED: _____ BRIDGE ENGINEER: _____ DATE: _____ PROJECT ENGINEER: _____ E.C.T. 34-344 Date: 8-30-09



## 6. RECOMMENDATIONS

Recommendation for the final channel design are presented below that would: (1) enhance the effectiveness of the originally proposed pilot channel; and (2) meet the objectives of CCC Condition 3 – that is, promote sediment transport, minimize channel bed erosion, reduce maintenance requirement, and protect aquatic habitat and fish passage conditions. These design modifications were developed based on input from Dr. Ed Keller, and from the Channel Design Working Group. They are designed to contribute to the “naturalization” of Mission Creek channel. Naturalization occurs when highly altered channels are modified to allow natural geomorphologic processes to operate, which will form and maintain a series of pools and riffles.

The new and wider channel will have sufficient width (40-50 feet) to allow a bankful channel to form over time and create the low-flow channel (within the bankful channel) that follows a natural hydraulic flow line unique to this reach of Mission Creek based on the substrate, overall channel alignment, bridge locations, and slope. Hence, the objective of the channel modifications would be to enhance the creation of the bankful channel and the attendant low flow channel – that is, facilitate the rapid formation of these channel features as soon as possible after construction and ensure that they will be as stable as possible over time (in the context of the natural creek geomorphology).

To accomplish this goal, the channel should be “initialized” at the end of construction to begin the natural geomorphological processes as follows. Cross sections of the proposed channel initialization and the resulting channel morphology are shown on Figure 4. The following design modifications would contribute to this initialization process. They would enhance migration and rearing opportunities for the southern steelhead by facilitating the formation and maintenance of a low flow channel and deep pools within the larger channel.

### Recommendation No. 1- Establish Pools

Pools should be established at the locations of the existing pools at the time of construction by excavating the channel below the design elevation for the channel bottom. Hence, if the project were constructed next year, a total of 13 pools would be created. The depths of the new pools would be 75 percent of the depths of the existing pools. A shallower depth is proposed in order to retain some channel bed material for scouring and redeposition during the first several years after construction. The lateral locations of the pools within the channel should generally match the locations of the existing pools (Figures 3a and 3b).

To maintain these pools, a “cross-vane rock weirs” should be installed at the head of each new pool (Rosgen, 2003). These weirs are grade control structures that narrow the width of the base flow channel and create scour pools downstream. The weir consists of a rock sill perpendicular to the stream flow located at the invert elevation of the creek. Two arms of the sill extend downstream along the banks, rising in elevation to the bankful height as they extend downstream, as shown on Figure 4. The stone is trenched into the stream bank at sharp angles in a general “V” shape pointing downstream. Two lines of rock are utilized to create a stable structure, utilizing the principle that w

EXHIBIT NO. 7

APPLICATION NO.

CD-46-06

flow off of immovable objects at right angles (90° angles). The downstream line of rock is trenched into the stream bottom so that the tops of the rock are approximately level with the stream bottom. The size of the rock for the weir and sills will be determined during final design. The length of the weir arms is the distance measured from the bankful bank to the intercept with the invert elevation of the creek at 1/3 the bankful channel width.

The cross-vane weir reduces bank erosion, creates a stable width-depth ratio, maintains channel capacity, and maintains sediment transport capacity. It decreases near-bank shear stress and increases energy in the center of the channel where it forms and maintains pools. The cross-vane is used to improve fish habitat because it creates pools for holding and refuge, develops feeding zones by creating flow separation areas along the margins of the weir, and creates potential spawning habitat in the tail-out portion of the pool (Rosgen, 2003).

In curved portions of the creek, a "J-hook vane rock weir" would be installed, as shown on Figure 6.

To the extent feasible, boulders encountered during construction of the project should be used to create the rock weirs. Similarly, cobbles that are excavated during the construction of the channel should be used for fill activities in the channel, particularly in areas between pools where they can be used to form riffles.

### **Recommendation No. 2- Initialize the Formation of a Low Flow Channel**

The channel between pools should be graded with a slight cross slope that reflects the location of the existing thalweg prior to construction (Figure 4). Hence, if the thalweg is located along the west bank, the new and wider channel would be graded with a slight grade (one foot or less over the width of the channel) towards the west bank. This action will enhance the formation of the low flow channel within the larger bankful channel.

A low flow channel should not be graded, as it will form naturally after the first winter with average or above average runoff. Any attempt to create and maintain a specific low flow channel would likely be a futile effort.

### **Recommendation No. 3 - Relocate Fish Baffles to Center of Channel**

As noted earlier, the Corps proposes to install rock fish baffles at periodic locations along the outer edge of the channel. The rocks would protrude 18-24 inches about the channel invert. The purpose of the baffles is to provide habitat for fish amongst the rocks on the channel bottom and to improve hydraulic conditions in the channel for fish migration by providing backwater areas for resting. It is recommended that the rock be reconfigured as more numerous "rock clusters" in the center of the channel, placed at 100 - 150 foot spacing between pools. Placement of the rocks in the center of the bankful channel at the end of construction would maximize the potential for the rocks to occur in year-round flows, in contrast to the proposed locations at the edges of the channel bottom. The rock cluster would consist of 3 to 5 individual rocks placed in close proximity, as shown on Figure 7. The size of the rocks will be determined during final design. They must be of sufficient size to remain in place during flood flows.

#### **Recommendation No. 4 - Remove Fish Ledges**

The Working Group engaged in several lengthy discussions about the proposed fish ledges. It was concluded that they would not be effective and should be removed from the design. The primary reason was that the ledges could become stranded over time if the low flow channel migrates to the other side of the larger channel, or the channel becomes lower. In these cases, the fish ledges would no longer be effective. The Working Group believed that the establishment of pools using the rock weirs would provide a greater amount of pool habitat that would be self-sustaining. Riparian and wetland plants are likely to persist or regularly colonize the channel bottom along the outside of the rock weir "arms" that extend downstream and form the pool, thereby creating cover for fish. The proposed fish ledges would have created 300 feet of cover for fish. The proposed 13 pools to be re-created during construction of the project would provide significantly habitat than would be created by the fish ledges, as the size of the pools below the rock weirs would range from 50 to 100 feet.

#### **Recommendation No. 5 - Reduce or Modify Rock Energy Dissipators at Two Bridges**

As noted earlier, a rip-rap channel bottom will be installed 150 feet upstream and 150 feet downstream of the existing bridges at De la Guerra Street and Gutierrez Street (Figures 2a and 2b). The rip-rap lining would prevent channel bed scour at these bridges once the project is completed due to anticipated higher velocities. The rip-rap on the channel bottom will contain clusters of 6-7 boulders of 3-4 foot width and 18-24 inches above the channel invert.

The Working Group expressed concerns about the overall lengths of the rock lining, and about the potential for this rock channel bottom to become a fish migration barrier. Two recommendations were developed to address these issues as follows: (1) During final design, the Corps and local sponsors should consider other design features to address the potential scour problems at these bridges that would reduce the length of the rip-rap channel lining. Examples include extending the abutments of the existing bridges to reduce the need or size of the energy dissipater structures, or using point stabilizers instead of continuous rock surfaces. (2) Any rock or concrete structure on the channel bottom at these bridges should be notched for a low flow channel to allow fish passage.

#### **Recommendation No. 6 - Implement Adaptive Management for Design Modifications**

The above design modifications are designed to be consistent with, and maintained by, the natural fluvial processes that will return to Mission Creek once the channel has been widened. The use of engineered structures to enhance habitat conditions in the creek is minimized, however, the rock weirs are necessary to maximize the formation of self-sustaining pools.

If, after several winters, a persistent low flow channel and series of pools are not forming or exhibiting persistence, then the City and the Corps, in consultation with NOAA Fisheries, the California Department of Fish and Game, and members of the Channel Design Working Group,

would review the performance of the proposed channel enhancements and consider modifications to the design, including but not limited to adding or removing weirs, modifying the size of instream boulders, and placement of additional boulders to encourage formation of a more stable and deeper low flow channel and series of pools.

## 6.0 MANAGEMENT PLAN

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### 6.1 MANAGEMENT OBJECTIVES

The primary management objective is to incorporate tidewater goby protection measures and design features into the Project and implement management actions to improve habitat conditions for this species throughout the estuary compared to current conditions. The management plan includes the tidewater goby protection and habitat enhancement measures described in the Corps' Biological Assessment and USFWS's Biological Opinion (see Section 5.2). These measures are described in Section 5 of this Plan and included below as specific management actions. However, the management plan also includes several other elements that represent new measures or actions, or an enhancement of previously committed measures, as described below.

### 6.2 MANAGEMENT ACTIONS

#### Design Phase

Management Action 1 - Fish Features. The Corps will incorporate the proposed fish ledges, fish refugia, and fish baffles, as described in the Final EIR/EIS and Biological Assessment for the Project. A qualified biologist will participate in the development of the preliminary and final engineering plans for these features to ensure that these features are suitable for gobies, taking into account factors such as materials, size and scale, channel location, and depth. The preliminary and final plans for these features will be submitted to the Goby Working Group for review and concurrence.

Management Action 2 - Substrate Modification. The Corps will remove existing cobble substrate from the channel to the extent feasible, and replace with sandy substrate to provide a more natural channel bottom that may be used by gobies for spawning. Prior to developing preliminary plans, the Corps will conduct a survey of the substrate from Cabrillo Boulevard to Chapala Street, mapping the extent and type of substrate. The engineering plans will clearly indicate the nature of the material and compaction of the final substrate to be established in the estuary, taking into account recommendations by a qualified biologist that has reviewed the results of the pre-construction substrate survey.

Management Action 3 - Dewatering and Fish Rescue Plans. The preliminary and final engineering plans will include plans, details, and specifications on the placement/removal of cofferdams, dewatering operations, and fish capture and relocation procedures. A qualified biologist will assist in the preparation of these drawings and specifications. The fish rescue and relocation will follow the procedures included in the Biological Assessment and Biological Opinion. These are standard field procedures to reduce risk of stranding or entraining fish during dewatering, and for protecting fish when relocating them to protected habitat areas. For this Project, fish will be relocated to adjacent channel areas in the estuary that are not dewatered or subject to cc disturbance. The dewatering and fish rescue plans will be submitted to USFWS for revi

EXHIBIT NO.	8
APPLICATION NO.	

CD-46-06

approval to ensure that the proper procedures and safe guard are included to avoid unnecessary take of gobies.

## **Construction Phase**

Management Action 4 – Avoid Spawning Period. Construction work in the estuary will only occur from June 15<sup>th</sup> to December 15<sup>th</sup> to avoid the peak spawning period.

Management Action 5 – Dewatering and Fish Rescue Operations. The Corps, City, and County shall implement the fish capture, relocation, and protection measures contained in the Biological Assessment and Biological Opinion, and as approved by USFWS as presented in the final Project plans. A qualified biologist with a goby handling permit shall be on site at all times during the installation of the cofferdam, dewatering operations, and fish capture and relocation procedures.

Management Action 6 – Limit on Dewatered Areas. No more than one half of the estuary from Cabrillo Boulevard to Chapala Street will be dewatered at any time. The lagoon will not be dewatered, sequestered, or otherwise affected by any construction actions. Prior to moving fish to the new, re-watered channel, a biologist shall assess the water quality in the re-watered channel reach to ensure that it is suitable for re-introduction of gobies.

Management Action 7 – Onsite Monitor. A qualified biologist shall conduct daily inspections of the construction work areas to ensure that the cofferdams remain intact, and that no gobies have entered the work areas. The biologist shall also monitor and inspect erosion control measures to be implemented as part of the Project. Finally, the biologist shall conduct periodic visual surveys of the unaffected portions of the estuary to monitor the abundance and condition of fish during construction. Weekly reports shall be provided to USFWS to apprise them of the status of the goby and the effectiveness of the protection measures during construction.

Management Action 8 – Worker Training. A qualified biologist will conduct a training session for all construction personnel prior to the onset of work to inform them of goby protection measures, work limits, legal prohibitions on take, and procedures to report problems and observations to the biologist.

Management Action 9 – Consider Arroyo Burro Impacts. The City of Santa Barbara and the County of Santa Barbara, Parks Department, should coordinate to prevent scheduling any major construction or maintenance work at Arroyo Burro estuary that could affect the goby at the same time as the work on Mission Creek Estuary is occurring.

Management Action 10 – Separate Two Lagoons. The Mission Creek Lagoon on the beach will be maintained separate from the Laguna Channel Lagoon during and immediately after the construction in Mission Creek to preclude any adverse impacts of construction on the Mission Creek Lagoon from also affecting the Laguna Channel Lagoon. The separation can be accomplished by placing sand barriers on the beach, and shall be established under the direction of a qualified biologist.

Management Action 11 – Contingency Population. The City will consider maintaining a small number of gobies outside of the Mission Creek Estuary during construction as a possible contingency source population in the unlikely event of significant mortality during construction. One possible approach is to create a small impoundment on the beach that is separate from the larger lagoon, and is maintained by inflows from Mission Creek or potable water, and protected from impacts due to people or predators. Another approach is to create a segregated portion of the estuary in the channel upstream of the beach, but outside the construction zone. The City would coordinate with US Fish and Wildlife Service to seek assistance on the design and maintenance of the physical facilities for the fish.

## **Post-Construction Phase**

Management Action 12 - Maintenance Procedures. The County shall implement the approved fish capture, relocation, and protection measures contained in the Biological Assessment and Biological Opinion when conducting any channel wall repairs.

## **Other Actions**

Management Action 13 – Lagoon Management. The lagoon downstream of Cabrillo Boulevard is an important part of the Lower Mission Creek Estuary. Although it provides habitat for gobies, it also provides foraging and wading opportunities for many shorebirds and seabirds, as described in detail in the 2003 summary of the biological resources of the lagoon (URS, 2003). The lagoon is very dynamic – the size, depth, and alignment varies from year to year and from season to season. In recent years, the lagoon has exhibited an east-west alignment across the beach, facilitated in part by the beach sand management by the City Waterfront Department. In this alignment, the lagoon often merges with the waterbody at the mouth of Laguna Channel, when it is present.

The Lower Mission Creek Project does not include the lagoon. However, the City recognizes that the lagoon is a part of the estuary, and that management of the estuary to improve habitat conditions for the tidewater goby as a result of the Project must include a consideration of the lagoon. Hence, the City will implement the following management actions for the lagoon:

- A. The City shall prohibit breaching of the lagoon at the beach to dewater the lagoon or reduce water levels except when there is an imminent threat to public health and safety. The City ended its practice of breaching the lagoon in 1999.
- B. The City Waterfront Department will continue its beach sand management program at East Beach, as approved by the Corps of Engineers and Coastal Commission in 2000, which allows the artificial build up of sand on each side of the lagoon to keep the Mission Creek alignment away from Stearns Wharf. However, the City Waterfront Department will no longer build up sand between Mission Creek Lagoon and the lagoon at Laguna Channel. Instead, the City Waterfront Department will allow the two waterbodies to merge due to natural forces (e.g., runoff, tidal action, condition of the beach, etc), and will take no action to purposely merge or separate the two waterbodies. The City conducted a study on the merging of the two waterbodies and determined that merging would have a beneficial impact on the goby

populations at the mouth of both Mission Creek and Laguna Channel. The report is included in Appendix D of this Plan.

- C. The City will establish a 10-foot wide zone of native shrubs on the top of the concrete wing walls immediately below the bike path bridge. In addition, the City will establish a 20-50 foot wide zone along one or both sides of the lagoon that extends 150-200 feet downstream of the ends of the existing wing walls at the downstream side of the Cabrillo Boulevard bridge (Figure 5). Coastal sage scrub, back dune, and brackish marsh vegetation would be established along this zone to stabilize the banks and provide food and cover for gobies and birds. Vegetation in these areas would be partially protected from flood flows due to the effects of the wing walls, and also because the velocities of flood flows would be the lowest along the margins of the lagoon. These areas could be further stabilized by placing a widely spaced "paver" material (e.g., articulated concrete blocks with large spaces for planting) under the ground surface that would prevent the sand from being washed away. Alternatively, several rows of small boulders buried below the ground surface and parallel to the lagoon alignment would also provide some bank stabilization. Once a stabilization method has been selected, the areas should be planted with native species that would typically occur in and around coastal lagoons.
- D. The City will install signs (English and Spanish wording) on each side of the lagoon informing the public of the ecological importance of the lagoon for tidewater gobies, seabirds, shorebirds, and invertebrates. The signs will also include a prohibition on wading or swimming.

Management Action 14 – Recolonization Procedures. In the event that the goby population in the Mission Creek Estuary were to become extirpated at any time in the future, as documented by a qualified biologist and/or USFWS, the City and County would implement a recolonization program to re-establish the goby population in the Mission Creek Estuary. The recolonization procedures would be developed in consultation with USFWS, and include fish capture and relocation from another South Coast population; re-introduction to Mission Creek Estuary, and post-colonization monitoring. Prior to recolonization, the City and County will conduct a survey of the source population to determine if the removal of fish can occur without long-term impacts to the source population. In addition, the City and County would conduct a field survey of Mission Creek Estuary to ensure that suitable habitat is present, or determine when it would be present, and to identify any risk factors that may cause the relocation to be unsuccessful. Finally, the City and County will evaluate the conditions and circumstances that resulted in the extirpation, and whether it was caused by a natural event, a human disaster that could not have been foreseen or avoided, or conditions created by the Lower Mission Creek Project. In the event that the extirpation is linked directly to the physical and biological conditions in the estuary created by the Project, the City and County will consult with USFWS to identify feasible Project modifications or additional management actions to prevent future extirpations.



## Monitoring and Adaptive Management Program (Management Action 15)

The City will initiate a comprehensive study of tidewater gobies in the Mission Creek Estuary two years prior to the initiation of construction. The study will include a two years of pre-construction surveys, and five years of post-construction surveys. The objectives of the study are to: (1) fully characterize the distribution and abundance of gobies in the estuary, including the lagoon; (2) address the uncertainties about goby habitat and the population identified in Section 3; (3) determine if the Project is adversely affecting gobies; and (4) provide more information to refine and improve the management actions in the Plan over time.

The study will expand upon the goby survey requirement in the USFWS Biological Opinion by increasing the number of years of the study (from 5 to 7 years), including seasonal surveys during each year, and seeking answers to specific questions or areas of uncertainty (see Section 3).

The study will include the following elements:

- A qualified biologist with permits to survey and handle gobies will conduct the field surveys. Field surveys will be conducted in June, September, and November of each year, using the same fish sampling methodologies as those used in the Creek Division's surveys of Mission Creek Estuary in 2004. Three sampling locations will be used – lower, middle, and upper estuary. Seine nets will be pulled across the channel at each location to capture fish. All fish will be identified to species and counted. Gobies will be measured for length and then immediately returned to the estuary. The sampling locations are located at sufficient distance to prevent fish from moving from location to location during the course of the survey.
- The surveys shall also include an inventory of physical conditions at six locations in the estuary (including the three fish sampling locations), including water temperature, salinity, depth, turbidity, flow, presence of algae, substrate, emergent vegetation, bank conditions, and in-stream debris. Water samples will be collected at the six sampling sites and measured for pH, total suspended solids, and total dissolved solids.
- The data from the pre-construction surveys will be compiled in a report that is submitted to the USFWS and CCC six months prior to the start of construction in the estuary. The report shall include an interpretation of the study results, particularly to the areas of uncertainty noted in Section 3. The report will incorporate the results of the Creek Division's goby surveys from 2004 and 2005. Finally, the report will include recommendations, if any, to modify any of the construction goby protection measures or Project design features to enhance goby habitat based on additional information from the field study. The City, County, and Corps will reconvene the Goby Working Group to elicit input on these recommendations before submitting them to the USFWS and CCC. Input from the Working Group will be summarized in the report.
- The goby study will resume when construction in the estuary has ended. Results of the monitoring program shall be provided to the USFWS each year. In the event that there is a documented decrease in the goby population that cannot be readily explained by natural

factors, or is clearly linked to the Project features, the City, County, and Corps will reconvene the Goby Working Group to discuss the underlying cause of the observed negative trends or observations, and to elicit input on recommendations to address the problems with the USFWS. The City, County, and Corps will then meet with USFWS to discuss the issues, and determine if the Section 7 consultation for the Project should be re-opened, and what immediate actions can be taken to rectify the situation.

### 6.3 MANAGEMENT RESPONSIBILITY

The Corps, City, and County will implement the Plan through various individual and shared responsibilities during the design, construction, and maintenance of the project. The primary responsibilities for the various management actions described above are summarized in the following table:

Management Action	Corps	City	County
1 - Incorporate fish features in plans	X		
2 - Include substrate modification in plans	X		
3 - Dewatering and fish rescue plans	X		
4 - Avoid spawning period		X	X
5 - Dewatering and fish rescue operations		X	
6 - Limit on dewatered Areas		X	
7 - Onsite monitor		X	
8 - Worker Training		X	
9 - Consider Arroyo Burro Impacts		X	
10 - Separate Two Lagoons		X	X
11 - Contingency Population		X	
12 - Maintenance Procedures			X
13 - Lagoon Management		X	
14 - Recolonization procedures		X	
11 - Monitoring program		X	

ATTACHMENT

**MITIGATION MEASURES  
SANTA BARBARA COUNTY FLOOD CONTROL DISTRICT  
UPDATED ROUTINE MAINTENANCE PROGRAM  
OCTOBER 2001**

**BIOLOGICAL RESOURCES**

***B-1 - Compensatory Habitat Mitigation.*** The District shall provide compensatory habitat mitigation for the removal of riparian and wetland habitat associated with brushing, herbicide spraying, channel shaping, bank stabilization by placing fill or grading banks, pilot channel construction, bank protection installation, access ramp construction, and channel desilting. The mitigation shall be required for all vegetated habitat, with the exception of areas dominated by aggressive, noxious non-native weeds (e.g., giant reed). The restoration treatment shall occur either on-site (i.e., along suitable portions of the drainage and its tributaries where the project is located) or off-site (Los Carneros Mitigation Bank) in accordance with the updated restoration plan described in the updated Program EIR, using a 1:1 acreage replacement ratio. A 2:1 ratio shall be used for impacts due to new grade stabilizers and non-vegetated bank protection, as described in the updated Program EIR. Prior to the use of the Los Carneros Mitigation Bank, the District shall consult with other organizations with expertise in habitat restoration (e.g., Wetlands Recovery Project) to determine if they have any knowledge of any on-site opportunities. Mitigation for specific affected areas shall only occur once during the next ten years of the maintenance program. That is, once habitat mitigation has been achieved for a portion of a drainage, no further mitigation is required for future maintenance of that reach or site over the next ten years regardless of the type of maintenance activity, provided the previous habitat mitigation has been successfully implemented, and the District continues to minimize habitat impacts to the extent feasible. After ten years, the habitat mitigation requirement shall begin again, regardless of previous habitat mitigation. Native trees with a diameter at breast height of 6 inches or more that are removed shall be replaced at a 10:1 ratio at the restoration site, independent of the replacement of habitat based on acreage. To the extent feasible, habitat restoration opportunities shall be sought on the tops of banks and landward of the creek that could provide a bio-filtering benefit for overland stormwater runoff. In addition, the District will seek opportunities to use regionally rare plants in the restoration plans, as feasible.

***B-2 - Minimize Vegetation Removal from Channel Bottom.*** The District shall minimize vegetation removal from the channel bottom to the least amount necessary to achieve the specific maintenance objectives for the reach (i.e., removing obstructive vegetation or silt-trapping vegetation). Brushing and herbicide application for vegetation control on the channel bottom shall be conducted in a non-continuous, mosaic-like manner, to the extent feasible, allowing small patches of in-channel native vegetation to persist

***B-3 - Construction Monitoring During Maintenance Activities.*** The District Biologist shall monitor maintenance activities daily to ensure that the appropriate methods and limits are used. Results of the monitoring shall be documented in the annual post-maintenance report. These activities include brushing, herbicide application, channel shaping, desilting, bank stabilization by placing fill or grading banks, bank protection construction or repair, grade stabilizer construction or repair, pilot channel construction, and access ramp construction.

***B-4 - Restore Temporarily Disturbed Areas.*** The District shall restore channel banks containin or wetland vegetation that are temporarily disturbed by maintenance or construction activities a with the following: channel shaping, placement of bank protection, ramp construction, and rep

EXHIBIT NO. 9
APPLICATION NO.
CD-46-06

construction of bank protection and grade stabilizers. Restoration objectives, methods, plant species, maintenance, and monitoring shall follow the guidelines in the updated restoration plan described in the Program EIR. The restoration of channel bed habitats shall only occur if it would not conflict with the maintenance needs in the affected reach.

***B-5 - Pre-Construction Biological Surveys and Avoidance Measures.*** A District biologist shall inspect all maintenance areas in creeks and basins during the annual spring field assessments (April and May) to determine if any sensitive plants, fish, or wildlife species are present, or habitats for these species are present. If the species are present, the District shall modify maintenance activities to avoid removal or substantial disturbance of the key habitat areas or features. Avoidance and impact minimization measures shall be described in the Annual Plan for each maintenance project. If a rare plant could be affected, the District shall relocate the plant by cultivation or seeding methods to a suitable nearby site. If a sensitive fish or wildlife species will be present at a maintenance site during the work period, the District shall schedule the work to avoid the species, if possible. If avoidance is not feasible, the District shall attempt to relocate the species or population with approval from the California Department of Fish and Game, US Fish and Wildlife Service or National Marine Fisheries Service, as appropriate. This measure applies to all currently known sensitive species that occur in maintained drainages and basins, as well as species that are determined to be sensitive in the future. Endangered species experts with handling permits shall be consulted during relocation efforts to provide additional assurances that relocation is effective. Such consultation shall include assistance in field efforts, as warranted.

***B-6 - Construction Monitoring for Sensitive Species.*** The District Biologist shall monitor, on a daily basis, earth and vegetation disturbing maintenance activities located at and adjacent to locations where sensitive species are known to occur. The need for monitoring and the areas to be monitored shall be determined during the annual field assessment in the spring. The objective of the monitoring is to ensure that key habitat features or species locations are avoided.

***B-7 - Post Maintenance Channel Bed Treatment.*** The District shall roughen the channel bed after channel desilting maintenance to create microtopography that will encourage re-establishment of aquatic habitats over time. Pools and riffles shall be recreated in the work area if they were removed during maintenance, to the extent feasible. Modifications of the creek bed shall be consistent with geomorphological considerations identified through mitigation measure H-1.

## HYDRAULIC ISSUES

***H-1 - Maintenance Need Analysis.*** The District shall evaluate relevant hydraulic factors when determining the need, type, and extent of channel maintenance for non-exempt watercourses where natural geomorphic processes are largely intact. Key factors that shall be included in the evaluation include: (1) hydraulic benefits of maintaining the bankful channel (if present) dimensions, natural sinuosity, and natural channel bed roughness; and (2) potential adverse hydraulic effects of excessive brushing, channel shaping, equipment activity in the channel, and bank hardening. Hydraulic principles of creating and maintaining channel stability and sediment transport equilibrium shall be applied, if applicable. The analyses and determinations relevant to this issue shall be documented in the Annual Plan. Clear maintenance objectives with attainable benefits for the protection of life, property, and habitat shall be established for each project and presented in the Annual Plan. A primary objective of this measure is to minimize maintenance activities to the extent feasible, consistent with District's program objectives.

***H-2 - Extent of Desilting.*** The depth of channel desilting shall not cause bank undercutting or channel headcutting. The District shall make a field determination of the maximum depth of desilting based on channel capacity objectives, an evaluation of channel invert elevation and slope through the project reach,

and a consideration of the maximum allowable bank length and slope that would cause bank instability. To the extent feasible, banks and bank vegetation shall not be disturbed or reconstructed during desilting to avoid destabilizing the banks.

**H-3 - Post Desilting Restoration.** After desilting, the District shall restore the channel geometry at the desilting site to a more natural state, as feasible, based on the channel shape, dimension, and slope upstream and downstream of the project site. The channel geometry shall be designed to enhance post-maintenance sediment transport through the desilted reach. If banks are disturbed during desilting, they should be set at a slope that matches existing undisturbed banks and stabilized, to the extent feasible and taking into account available right of way.

**H-4 - Pilot Channel Construction.** If it is necessary to construct a pilot channel or substantially modify an existing low flow channel, the District shall attempt to maintain the low flow channel length, width, slope, substrate, and sinuosity that are characteristic of the project reach, as determined by field observations of undisturbed low flow channels upstream and downstream of the project reach.

**H-5- Bank Protection Methods.** The construction of bank protection shall be limited to situations where bank stabilization is necessary because the banks are vulnerable to continued erosion which could cause a threat to critical public infrastructure, valuable habitat, or otherwise in the public interest and it has been determined that natural slope settling would not achieve the necessary stability. The District shall evaluate different types of bank protection methods, then select one that is most suitable based on the following order of decreasing preference: (1) vegetation stabilization only; (2) bio-technical methods in which vegetation is incorporated with natural type structural components such as woody branches, natural rock, logs, natural fibers and geotextiles, and biodegradable temporary geotextiles; (3) ungrouted rip rap with vegetation; (4) pipe and wire revetment while retaining vegetation; (5) grouted rip rap; and (6) concrete sackwalls, gabion walls, soil cement, and gunite. Only native plants common to the region shall be used in all bank protection projects. Hard bank protection such as grouted and ungrouted rip-rap, pipe and wire revetment, gunite, concrete sackwalls, gabion walls, and soil cement shall only be used if the District has determined that the above methods will not achieve the desired results, are not cost effective, are logistically or technically infeasible, and/or would create greater incidental environmental impacts. Incorporation of plant material into bank protection, and maintenance and monitoring of such plantings, shall follow the guidelines in the updated Routine Maintenance Program Restoration Plan. The installation of new bank protection shall not adversely affect the stability of nearby banks. Bank protection projects that exceed 150 linear feet at any one single location would be considered a separate project, not included in the routine maintenance program.

**H-6 - Removal of Giant Reed from Banks.** If the District will remove a stand of mature giant reed from the bank for habitat restoration purposes, the following measures shall be implemented to ensure that the bank will remain stable after treatment. To the extent feasible, the least invasive method of giant reed removal shall be used, and the removal of native vegetation from the banks shall be minimized. The District shall stabilize the banks after giant reed removal using biotechnical methods that include native plants. This measure shall also apply if similarly large stands of other non-native plants are removed from banks.

**H-7 - New or Repaired Grade Stabilizers.** Prior to installing a new grade stabilizer to control channel bed degradation, the District shall conduct the hydraulic analysis described in H-1. In addition, the District shall first consider stabilizer designs that use native ungrouted rock. The new structure shall not create a passage impediment for fish. This measure also applies to the repair or reconstruction of existing stabilizers. Detailed plans for new and repaired grade stabilizers shall be presented in Annual Plans, including a consideration of alternative designs and justification for the selected design.

**H-8 - Access Ramps.** The distance between access ramps shall be determined by balancing the impacts of driving equipment on the channel bed versus creating extra access points. Access ramps shall be placed in areas with minimum potential for erosion. Access ways shall be sited, constructed, and maintained in a manner that minimizes disturbance to native vegetation, wildlife, and aquatic organisms. The width of all new ramps shall be minimized to the extent feasible. Unneeded access ramps shall be removed and restored to a natural condition. For ramps that will be used infrequently (e.g., every three years or more), the District shall seed or plant the ramp after each use with native species, compatible with adjacent vegetation and resistant to occasional vehicle use, to prevent infestations of noxious weeds. Permanent and frequently used ramps shall be stabilized with vegetation, as feasible, and designed to minimize unauthorized vehicle access.

## **WATER QUALITY**

**W-1 - Reduce Sedimentation.** The District shall minimize the amount of surface disturbance and vegetation removal to the extent feasible during all maintenance activities in order to reduce the area of disturbed soils that could be eroded during winter runoff. No stockpiles or dewatering operations shall be established in the channel bed or basin bottom. All fill shall be compacted to reduce erosion. All disturbed banks and terraces above the low flow channel shall be seeded with appropriate riparian grasses and herbs and/or planted with willows, mulefat, or other woody plant species. The objectives of the seeding and/or planting are to stabilize these areas and reduce erosion. The selection of species to be used and the density of seeding or planting shall balance the need for maintaining channel capacity while meeting these objectives. If work must occur in a wetted channel that has continuous flow downstream of the work site, the District shall either temporarily divert streamflow around the work site, or provide temporary sediment containment downstream of the site. In addition, the District shall check silt fencing, diversions, and settling ponds twice a day.

**W-2 - Responsible Herbicide Application.** To the extent feasible, the primary herbicide application each year shall occur during the months of August through November, when stream flows are minimal. In some instances, a follow-up application will be made in the spring to reduce the frequency of maintenance. Herbicides shall be applied by hand-held sprayers rather than from truck mounted sprayers to the extent feasible. The dilution and application of herbicides shall be conducted in strict accordance with all label recommendations, including all restrictions related to public health, worker safety, and the protection of aquatic organisms. Herbicides shall not be applied when winds at the application site exceed 5 miles per hour, within 12 hours of a forecasted rain event, or when vegetation surfaces are covered with water from recent rainfall or dew. Herbicides shall be applied carefully to plant surfaces in minimal effective amounts, minimizing drift to non-target plants and overspray onto the ground or to open water. Signs shall be placed to warn the public if herbicides are applied within 50 feet of any public recreation location, such as a trail, picnic spot, or other site of regular human activity. The signs shall remain for 48 hours after the application of the herbicide. The District shall also notify residences and businesses located adjacent to drainages to be treated with herbicides. Notification shall occur by mail within 7 days of the planned maintenance work.

**W-3 - Maintain Biofiltering by Reseeding Channel Bottom Areas.** To the extent feasible and consistent with the maintenance objectives, the District shall avoid removal of emergent herbaceous wetland vegetation on the channel bottom that is rooted in or adjacent to the low flow channel or a pond. This same type of vegetation shall be protected, to the extent feasible, during the removal of taller obstructive woody vegetation on the channel bottom. In addition, the District shall re-seed desilted channel areas that formerly contained emergent vegetation, provided that suitable native seeds from plants that provide biofiltration are available and that the new vegetation will not significantly affect channel conveyance or significantly increase the need for future maintenance. Seeding shall occur after the major winter runoff has occurred and stream flows have receded to prevent loss of seeds.

**W-4 - Prevent Accidental Spills and Leaks.** The mixing and dispensing of herbicides and equipment fueling or maintenance shall not occur within a channel or a basin. Spill containment and clean-up procedures for herbicides and vehicle fuels and oils shall be developed by the District. All field personnel shall be trained and all field vehicles shall be equipped with appropriate materials.

**W-5 - Water Quality Monitoring During Herbicide Application for Large Projects.** The District shall monitor concentrations of glyphosate downstream of large maintenance projects that involve herbicide application. Large projects are defined as projects that involve continuous or near-continuous herbicide application along reaches of more than 250 feet where there is flowing water along the entire reach. Water samples shall be collected from the flowing water at the following locations: Site A - above the work site, representing the ambient water quality conditions; Site B - immediately downstream of the work site; and Site C - approximately 200 feet downstream of the work site. Samples shall be collected using the following protocol: (1) Prior to herbicide application - samples at Site A, and Sites B and C if there is a storm drain outlet or similar feature within the maintenance reach that may contribute off-site flow and possible herbicides to the water samples; (2) 24 and 96 hours after herbicide application - samples at Sites A, B, and C. If glyphosate concentrations exceed 15 mg/l in the 24-hour sample or 10 mg/l in the 96-hour sample, the District shall modify the spray program at all remaining maintenance sites to be sprayed. Modification may include reducing the rate of herbicide application and/or using hand removal techniques. The District shall continue to apply herbicides only if the glyphosate concentrations are consistently below the 24 and 96-hour thresholds. If the 24 and/or 96-hour thresholds are exceeded five times during the maintenance year, regardless of location, the District shall cease application of herbicides in aquatic situations until the program can be modified to reduce concentrations to the acceptable range.

**W-6 - Public Education Regarding Creek Water Quality.** The District shall prepare information brochures for residents located along maintained drainages that explain: (1) how the District applies herbicides in a responsible manner, and provides guidelines on how landowners can use herbicides for residential and commercial uses in a similarly responsible manner to minimize water quality impacts to the creeks; and (2) how landowners can reduce pollution to the creek from their activities by employing best management practices for landscape fertilization; disposal of household paints, hazardous materials and petroleum products; management of trash and landscaping debris; and handling of pet wastes. The brochure shall be prepared in coordination with Project Clean Water and mailed to affected areas on a 3-year rotating basis. It shall include the Project Clean Water phone numbers for technical assistance and for reporting illegal dumping. The brochure shall also include information on how landowners can make their land available for habitat restoration under the routine maintenance program.

**W-7 - Reporting Water Quality Incidents.** The District shall train its maintenance crews to identify and report incidents or materials observed in the creeks during routine maintenance work that could cause significant water quality impacts, including illegal dumping of trash, pet waste, and green waste; homeless encampments; and drain outlets with evidence of poor water quality. The staff shall contact appropriate authorities in the County or affected municipalities.

**W-8 - Reduce Overall Herbicide Use.** The District shall make every feasible effort to reduce the overall amount of herbicides used in the maintenance program over the next ten years through more restrictive and selective applications, greater use of manual clearing, actions to reduce in channel obstructive vegetation through shading by new canopy trees, and coordination with the the County's Integrated Pest Management Strategy to identify more environmentally friendly pesticides. The IPM Strategy was adopted by the Board of Supervisors to promote the maintenance of the County's landscapes in way that protects and enhances natural resources and public health, while providing a framework for evaluating pesticide use by County Departments in pursuit of their missions.



**CALIFORNIA COASTAL COMMISSION**

45 FREMONT STREET, SUITE 2000  
 SAN FRANCISCO, CA 94105-2219  
 ICE AND TDD (415) 904-5200



# Tu 9a

ADOPTED FINDINGSON CONSISTENCY DETERMINATION

Consistency Determination No. **CD-117-99**  
 Staff: JRR-SF  
 File Date: 12/16/1999  
 45th Day: 01/30/2000  
 60th Day Extended to: 8/17/2001  
 Date of Commission Action: 8/9/2001  
 Commission Meeting: 11/13/2001

FEDERAL AGENCY: CORPS OF ENGINEERSDEVELOPMENTLOCATION:

Lower Mission Creek, Santa Barbara (Exhibit 1)

DEVELOPMENTDESCRIPTION:Lower Mission Creek flood-control improvements  
(Exhibits 2-9)PREVAILINGCOMMISSIONERS:Commissioners Dettloff, Allgood, Hart, Le  
Nava, Woolley, and Chairperson Wan

EXHIBIT NO. 10

APPLICATION NO.

CD-46-06

EXECUTIVE SUMMARY

The Corps has submitted a consistency determination to improve flood protection on Mission Creek, in the City of Santa Barbara. The proposed project will increase the channel capacity to 3400 cubic feet per second (cfs) and will thereby provide approximately a 20-year storm level of protection. Four bridges along the study reach will be replaced during the project and the City, prior to the project, will replace one. Additionally, the project includes a new culvert

bypassing the oxbow below Highway 101 ("oxbow bypass"). The oxbow will be left in place as a low-flow channel. The project includes planting of native riparian species along sloped banks stabilized by riprap and creation of additional riparian habitat by enlarging planted slopes in areas where the Corps must purchase property adjacent to the stream. The creek banks will consist of either a vertical wall or a combination vertical wall and riprap sideslope. The combination vertical wall and riprap sideslope will consist of vertical wall for the bottom half, while ungrouted riprap slope will form the upper half. Native riparian vegetation will be planted within the riprap. Existing natural stream bottom will be maintained and stream bottom that is now concrete lined will be restored to natural conditions, except for immediately underneath bridges and through the oxbow. The project includes instream features to improve fish habitat. The flood control facility within the coastal zone consists primarily of vertical walls, with two small sections that include short walls with a vegetated riprap slope above the walls. The area inland of the coastal zone will be mostly vegetated riprap with small retaining walls.

Sections 30236 and 30233 of the Coastal Act allow stream alteration that is necessary for flood-control purposes and prevent the Commission from approving this stream alteration unless it is the least damaging feasible alternative. The proposed project will improve flood-control capacity of the stream, which floods on a regular basis. In addition, most of the alternatives considered by the Corps would not provide sufficient flood-control protection or would not otherwise be feasible.

The proposed project includes impacts to estuarine and riparian wetland resources. Sections 30236, 30233 and 30240 of the Coastal Act prevent the Commission from approving this stream alteration unless it includes feasible mitigation and it avoids significant disruption to the sensitive habitat. The proposed project affects habitat to federally listed threatened species, steelhead trout and tidewater goby. The project includes the following mitigation measures: 1) creation of riparian habitat on the banks of the stream; 2) widening the estuary; 3) construction of a pilot channel functioning as a low flow channel for the entire creek above the estuary; 4) instream features improving fish habitat; and 5) seasonal limitations on construction and maintenance activities. The Commission is conditioning its concurrence to require the Corps to 1) prepare and submit to the Commission plans for a) the pilot channel, b) maintenance and adaptive-management activities, and c) landscaping with native riparian vegetation adjacent to the vertical floodwalls in the coastal zone, and 2) accelerate the goby portion of the comprehensive estuary management plan and incorporate relevant recommendations of that portion of the plan into the proposed project. In addition, the Corps will participate in the development of a comprehensive management plan for the estuary and submit a consistency determination for that plan.

The proposed flood-control facility includes annual dredging, vegetation removal, and herbicide use inland of the coastal zone boundary and could degrade the water quality of the stream. Section 30231 of the Coastal Act requires the Commission to protect the water quality of coastal waters. The removal of vegetation and sediment will not occur in the coastal zone. In addition, the Corps' maintenance activities include measures, such as silt curtains and mosaic vegetation removal, to minimize water quality impacts on coastal zone resources from maintenance activities inland of the coastal zone. The Corps has agreed to coordinate the construction of the flood-control facility with the water quality efforts within the City of Santa Barbara, so that, if necessary and advantageous, the City could construct measures to control appropriate non-point source pollution concurrent with the project. Finally, the Corps will prepare a storm water pollution prevention plan (SWPPP) to minimize water quality impacts from the construction of the flood-control facility. The Commission, in a subsequent consistency review of the design phase of this project, will review both the SWPPP and the maintenance plan.

The proposed project includes the removal of sediment from the stream. Section 30233 of the Coastal Act requires sediment removed from coastal streams to be used to restore sand supply on local beaches. Although the Corps' consistency determination does not evaluate the suitability of this sediment for beach replenishment purposes, the Corps proposes to place any suitable material on the beach. The Corps will provide the Commission with sediment characterization data when it conducts a subsequent consistency review of the project before the Corps approves the final design of the project.

The proposed construction of the vertical walls south of Highway 101 could adversely affect visual resources of the coastal zone. Section 30251 of the Coastal Act provides for the protection of visual resources within the coastal zone. In its environmental documents, the Corps proposes to design the project in a manner that minimizes visual impacts. This commitment will be confirmed through federal consistency review of the final design plans.

The environmental documents for the Mission Creek project state that there are historic and archaeological resources potentially affected by the proposed project. Section 30244 of the Coastal Act requires the Commission to consider mitigation measures for these resources. The Corps has coordinated with the State Historic Preservation Officer (SHPO) and has incorporated relevant protection measures into the proposed project.

### **SUBSTANTIVE FILE DOCUMENTS:**

1. Draft Environmental Impact Statement/Environmental Impact Report for Lower Mission Creek Flood Control Project, Santa Barbara, California, December 1999.

2. Final Environmental Impact Statement/Environmental Impact Report for Lower Mission Creek Flood Control Project, Santa Barbara, California, September 2000.
3. Biological Assessments, Lower Mission Creek Flood Control Project, Santa Barbara, California, December 1999.
4. Draft Fish and Wildlife Coordination Act Report, Lower Mission Creek Flood Control Project, Santa Barbara, California, U.S. Fish and Wildlife Service, September 1999.
5. Biological Opinion for the Lower Mission Creek Flood Control Project, Santa Barbara, County California, National Marine Fisheries Service, August 2, 2000.
6. Biological Opinion for the Lower Mission Creek Flood Control Project, Santa Barbara, County California, U.S. Fish and Wildlife Service, June 1, 2001.

## **STAFF SUMMARY AND RECOMMENDATION:**

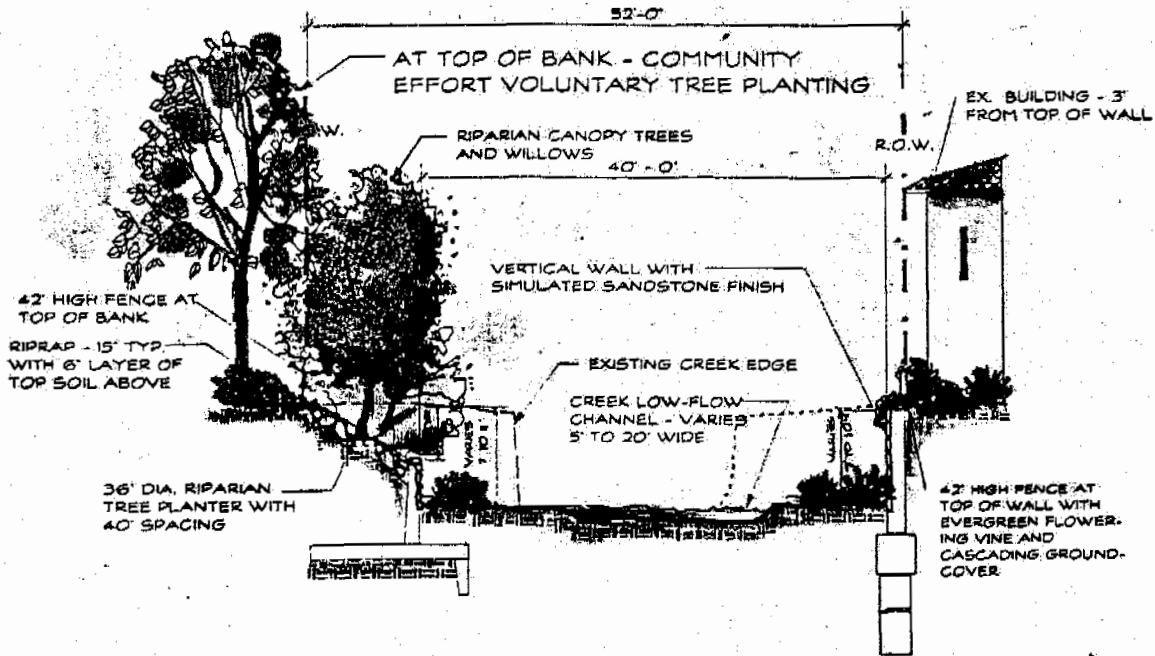
### **I. Project Description.**

The Corps proposes to develop a flood-control facility on Mission Creek in Santa Barbara with a capacity of 3,400 cfs (existing capacity is 1,500 cfs) and will thereby provide approximately a 20-year storm level of protection. Four bridges along the study reach will be replaced. Additionally, the project includes a new culvert bypassing the oxbow upstream of Highway 101 ("oxbow bypass"). The culvert will cross the highway, Montecito Street, and the railroad tracks before rejoining the creek upstream of the Chapala Street Bridge. The culvert will be covered only across Montecito Street down to its confluence at Chapala Street Bridge, which will consist of two concrete boxes (12 ft x 10.5 ft). The open portion of the culvert beginning upstream of Highway 101 will be a 25-foot-rectangular concrete channel. The open channel will be approximately 200 linear feet, while the concrete box culvert will be approximately 350 feet in length. The oxbow will be left in place as a low flow channel.

The project includes planting of native riparian species along sloped banks stabilized by riprap, creation of 0.6 acres of riparian habitat adjacent to the oxbow, and enlargement of sloped planting areas. Land acquisitions will provide for the widening of the creek and creation of habitat expansion zones at several locations (as many as six) along Lower Mission Creek. The habitat expansion zones will be planted with trees native to coastal California. Species planted may include western sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), California laurel (*Umbellularia californica*), wax myrtle (*Myrica californica*), hollyleaf cherry (*Prunus ilicifolia*), and white alder (*Alnus rhombifolia*).

The creek banks will consist of either a vertical wall or a combination vertical wall and riprap sideslope. The combination bank treatment will consist of vertical wall for the bottom half, while ungrouted riprap (15 inches thick) at a 1.5:1 (Vertical to Height ratio) slope will form the upper half. The height of the vertical wall in this combination design will vary along the entire length of the project area. Riprap will be overlain on a layer of native rock and soil, with topsoil distributed through the interstices of the riprap, and covered with 9 inches of prepared topsoil. Concrete pipes of varying sizes (up to a maximum three feet in diameter) will be placed in between the riprap to allow planting of native trees and vegetation. Several species of riparian trees, including western sycamore, cottonwood, and coast live oak will be planted from one gallon nursery stock into cylindrical planters embedded within the riprap and spaced 40 feet apart.

**Rendering of short floodwalls with vegetated riprap<sup>1</sup>**



**VEGETATED SIDE SLOPE AND VERTICAL WALL SECTION VIEW**

NOT TO SCALE

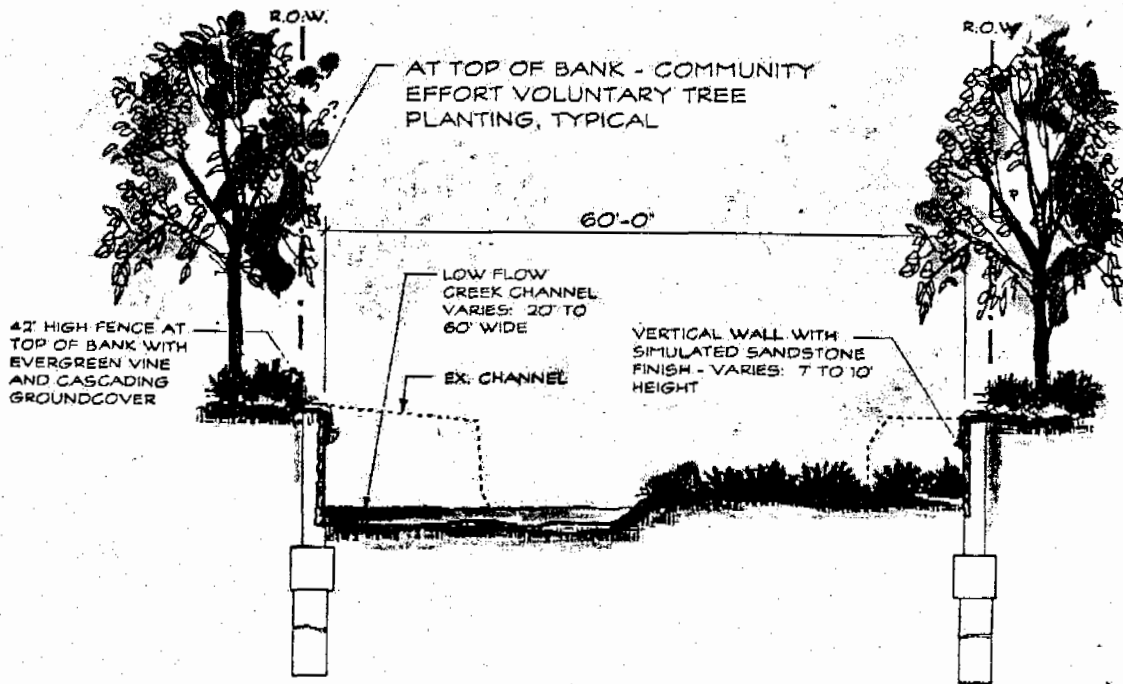
Willow branches will be placed into prepared soil below the riprap in dense rows with the expectation that approximately 20% will sprout vegetatively and find their way through gaps in the riprap. Other native understory species, including

<sup>1</sup> City of Santa Barbara, Letter Dated 2/22/00

arroyo willow (*Salix lasiolepis*), Mexican elderberry (*Sambucus mexicana*), and coyote brush (*Baccharis pilularis*), will be seeded into the topsoil, or set out from liner stock.

Combination riprap and vertical wall will be the dominant bank treatment upstream of Highway 101, except in two short reaches just upstream of Haley-De la Vina Bridge and De la Guerra Bridge. Below Highway 101, the combination riprap and vertical wall will be applied along the southeast bank, starting from midpoint between Chapala Bridge and Mason Bridge down to midpoint between Mason Bridge and State Bridge and between the State Street bridge and the Cabrillo Street Bridge. In total, about 4,275 feet of Mission Creek will be finished with this combination design. However, most of the stream banks in the coastal zone will consist of vertical walls.

### Rendering of Vertical Flood walls<sup>2</sup>



### VERTICAL WALL ON PIER FOOTING TYPICAL SECTION

NOT TO SCALE

Existing natural stream bottom will be maintained and stream bottom that is now concrete lined will be restored to natural conditions, except for immediately

<sup>2</sup> City of Santa Barbara, Letter Dated 2/22/00

underneath bridges and through the oxbow. Restoration to natural bottom will necessitate excavation and removal of one to four feet of streambed in the reach between De la Guerra Street bridge and Ortega Street Bridge, one to three feet of streambed between Ortega Street Bridge and Bath Street Bridge, two to three feet of streambed between Cota Street Bridge and Haley-De la Vina Bridge, and two to four feet of streambed between Haley-De la Vina Bridge and Gutierrez Street Bridge. In the reach between Chapala Street Bridge and State Street Bridge, there will be excavation and/or fill of one foot of streambed. In the final reach of Lower Mission Creek from State Street Bridge to Cabrillo Boulevard Bridge, the streambed will be cleared of leftover footings from earlier structures. There will be no flood-control improvements in the Mission Creek lagoon, south of Cabrillo Boulevard. Additionally, the project will include measures to improve fish habitat within the stream. These measures include placement of boulder clusters as energy dissipaters and provide some heterogeneity to the stream. Additionally, the project includes construction of a low-flow channel inland of the coastal zone, fish ledges and baffles and Goby refugia (hideouts) constructed along the flood-control walls.

Finally, the proposed project provides for annual maintenance of the flood-control facility. The maintenance activities include removal of sediment and vegetation from the streambed inland of the coastal zone, inspection and repairing, as needed, the channel wall, overflow culvert and weir structure, monitoring and repairing the vegetated rip rap areas and habitat expansion zones, and repairing interior drainage structures (storm drains). The vegetation removal will occur in a mosaic pattern that requires removal of vegetation from half the stream with the other half being cleared in the following year. Thus, the removal of vegetation from any one part of the stream will occur every other year. This consistency determination does not include vegetation or sediment removal in the coastal zone as part of the maintenance program.

At the hearing for this project, the Corps incorporated the following changes into the project:

1. Pursuant to section 930.36(d) of the regulations that implement the CZMA, the Corps will submit to the Commission one or more additional consistency determinations for future phases of the project and the maintenance thereof. In the future consistency determination(s), the Corps will 1) describe the specific characteristics of the design, and 2) consider all design-related issues including design of the pilot channel, adaptive management plan, and maintenance plan.
2. The Corps will convene a team of biologists with expertise on the tidewater goby. The team will consider issues related to the management of the tidewater goby within Mission Creek. Among other issues, the team will discuss the need for a study of tidewater goby genetics. If there are regional

benefits and the team recommends proceeding with the study, the team will define the scope, parameters and protocols to be followed.

3. The Corps will perform additional hydraulic analyses to investigate the feasibility and effectiveness of raising the State Street and Cabrillo Boulevard Bridges independently or together. The Corps will submit to the Commission and EDC results of these analyses.
4. The Corps will compile the adaptive management and maintenance plan into a single document and will present the document to the Commission upon completion. In that plan, the Corps will clarify the methods for maintenance (e.g., herbicide and heavy equipment vs. hand clearing of vegetation).
5. The Corps will submit to the Commission as part of a consistency determination for a future phase of this project 1) a final design for the pilot channel, and 2) analysis that supports the Corps' final design choice. This analysis will reflect the fact that the current (feasibility level) characteristics and functions are not necessarily appropriate to optimal fluvial behavior for sediment transport and conveyance through Lower Mission Creek.
6. The Corps will participate with the City of Santa Barbara in the development of a management plan for the Mission Creek estuary, which will include an analysis of tidewater goby habitat as part of the overall plan along with water quality, flood control concerns, aesthetics, safety, and recreational opportunities. The Corps will submit to the Commission a consistency determination for this comprehensive management plan.
7. The Corps will accelerate the goby portion of the comprehensive estuary management plan as part of the proposed flood-control project. This goby plan will consider, among other issues, the commingling of the Laguna Channel and Mission Creek at the estuary. To the extent feasible, the Corps will implement recommendations from the plan that are associated with the flood-control project.

## **II. Status of Local Coastal Program.**

The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If the Commission certified the LCP and incorporated it into the CCMP, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information. The Commission has partially incorporated the City of Santa Barbara LCP into the CCMP.

## **III. Federal Agency's Consistency Determination.**



The Corps of Engineers has determined the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

**IV. Applicable Legal Authorities.**

Section 307 of the Coastal Zone Management Act (CZMA) provides in part:

*(c)(1)(A) Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.*

In addition, 15 CFR § 930.4 provides, in part, that:

*(a) Federal agencies, ... agencies should cooperate with State agencies to develop conditions that, if agreed to during the State agency's consistency review period and included in a Federal agency's final decision under Subpart C ... would allow the State agency to concur with the federal action. If instead a State agency issues a conditional concurrence:*

*(1) The State agency shall include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies. The State agency's concurrence letter shall also inform the parties that if the requirements of paragraphs (a)(1) through (3) of the section are not met, then all parties shall treat the State agency's conditional concurrence letter as an objection pursuant to the applicable Subpart and notify, pursuant to §930.63(e), applicants, persons and applicant agencies of the opportunity to appeal the State agency's objection to the Secretary of Commerce within 30 days after receipt of the State agency's conditional concurrence/objection or 30 days after receiving notice from the Federal agency that the application will not be approved as amended by the State agency's conditions; and*

*(2) The Federal agency (for Subpart C) ... shall modify the applicable plan [or] project proposal, ... pursuant to the State agency's conditions. The Federal agency ... shall immediately notify the State agency if the State agency's conditions are not acceptable; and*

...

*(b) If the requirements of paragraphs (a)(1) through (3) of this section are not met, then all parties shall treat the State agency's conditional concurrence as an objection pursuant to the applicable*

*Subpart.*

**V. Consistent to the Maximum Extent Practicable.**

Section 930.32 of the federal consistency regulations provides, in part, that:

*(a)(1) The term "consistent to the maximum extent practicable" means fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.*

The Commission recognizes that the standard for approval of Federal projects is that the activity must be "consistent to the maximum extent practicable" (Coastal Zone Management Act Section 307(c)(1)). This standard allows a federal activity that is not fully consistent with the CCMP to proceed, if compliance with the CCMP is "*prohibited [by] existing Federal law applicable to the Federal agency's operations*" (15 C.F.R. § 930.32). The Corps of Engineers did provide any documentation to support a maximum extent practicable argument in its consistency determination or in any subsequent documents. In addition, it did not argue that this project is consistent to the maximum extent practicable at the public hearing for Commission review of this consistency determination when the conditions described below were first raised. Therefore, there is no basis to conclude that existing law applicable to the Federal agency prohibits full consistency.

**VI. Motion:**

*I move that the Commission adopt the following findings in support of its conditional concurrence in the Corps' consistency determination CD-117-99.*

**VII. Staff Recommendation:**

The staff recommends a **YES** vote on this motion. Pursuant to section 30315.1 of the Coastal Act, adoption of findings requires a majority vote of the members of the prevailing side present at the August 9, 2001, hearing, with at least three of the prevailing members voting. Only those Commissioners on the prevailing side of the Commission's action on the consistency determination are eligible to vote. A majority vote by the prevailing Commissioners listed on page 1 of this report will result in adoption of the findings.

**VIII. Resolution To Conditionally Concur With Consistency Determination:**

The Commission hereby conditionally concurs with the consistency determination by Corps of Engineers on the grounds that, as conditioned, the project described

therein is consistent with the enforceable policies of the CCMP, provided the Corps satisfies the conditions specified below pursuant to 15 CFR §930.4.

**A. Conditions:**

1. **Tidewater Goby Studies, Management Plan and Recommendations:** The Corps of Engineers with input from interested biological experts shall conduct Tidewater Goby studies and develop a Management *Plan* for Tidewater Gobies in the Mission Creek Estuary that evaluates project specific impacts and includes recommendations to minimize those effects. . The Corps shall implement all feasible short- and long-term recommendations in the plan to mitigate impacts associated with the project or intended to lessen project-specific or cumulative impacts to Tidewater Gobies. The Corps shall also make recommendations regarding whether or not to proceed with a Tidewater Goby genetic study to help assess project impacts related to potential extirpation and recolonization. In addition, the Corps shall make recommendations regarding allowing the Mission Creek and Laguna Creek estuaries to merge under natural conditions (or as recommended by the team of biologists) in order to benefit Tidewater Gobies. The results of the tidewater goby Management studies and recommendations shall be submitted to the Commission as part of the consistency determination for the design phase review of the Lower Mission Creek Flood Control Project.
2. **Maintenance Plan:** The Corps shall develop a new adaptive creek maintenance plan that includes hand clearing and that minimizes the use of herbicides and heavy equipment The Maintenance Plan shall be submitted to the Commission as part of the consistency determination for the design phase review of the Lower Mission Creek Flood-Control Project.
3. **Pilot Channel Design:** The Corps shall develop a new pilot channel configuration for the Lower Mission Creek Flood Control Project. The Corps shall consider, as design alternatives, all feasible suggestions and recommendations on the pilot channel's physical characteristics (e.g., dimensions, morphology, sinuosity, substrate, etc.) received from the Environmental Defense Center, Dr. Ann Riley, Dr. Ed Keller, Dr. Scott Cooper, Dr. Camm Swift, Dr. Kevin Lafferty, National Marine Fisheries Service, and the City and County of Santa Barbara. The new configuration shall be developed with the goal of promoting effective and efficient transport of sediment through the creek, minimizing streambed erosion and sedimentation impacts and related creek maintenance impacts associated with the project, and protecting aquatic habitat. The pilot channel design shall be submitted to the Commission as part of the consistency determination

for the design phase review of the Lower Mission Creek Flood Control Project.

4. **Landscaping Plan:** The Corps shall develop a new Landscaping Plan that includes native landscaping along all reaches of the project length on both sides of the creek including segments adjacent to vertical floodwalls where vegetated rip-rap banks are not proposed. The Plan shall include provisions for planting on private property to ensure a continuous riparian corridor wherever space physically permits. The Landscaping plan shall be submitted to the Commission as part of the Lower Mission Creek Flood Control Project.

**IX. Findings and Declarations:**

The Commission finds and declares as follows:

**A. Habitat Resources.** The Coastal Act provides for the protection of stream resources. Section 30233(a) provides that:

*(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

*(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*

*(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*

*(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

*(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers*

*that provide public access and recreational opportunities.*

*(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

*(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

*(7) Restoration purposes.*

*(8) Nature study, aquaculture, or similar resource dependent activities.*

Section 30236 of the Coastal Act provides that:

*Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*

Section 30240(a) of the Coastal Act provides that:

*(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

**1. Existing Resources.** The Corps of Engineers proposes to develop a flood-control facility on Lower Mission Creek, a 1.1-mile section of Mission Creek from the intersection of Canon Perdido and Castillo Streets to Cabrillo Boulevard, located in the City of Santa Barbara. This section of Mission Creek flows southeast through the City of Santa Barbara and eventually discharges into the ocean approximately 450 feet east of Stearn's Wharf.

The Mission Creek drainage, the largest of several coastal stream systems in the Santa Barbara region, originates in the Santa Ynez Mountains north of Santa Barbara. The drainage, including its tributaries, is approximately 11.5 square miles in size. The headwaters of Mission Creek and its major tributary, Rattlesnake Creek, occur at 3,500 feet. During the rainy season, Mission Creek ranges from a comparatively small stream carrying an average maximum of 370 cfs during non-flood years to a creek with peak flows of 5120 cfs<sup>3</sup>. The incidental

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<sup>3</sup> Hydrology data from the U.S. Army Corps of Engineers 1995a.

trickle moving down the channel after mid-summer appears to be primarily urban runoff that enters Mission Creek via storm drains along its course. Mission Creek also periodically receives water from the Santa Barbara water tunnels.

The condition of the natural resources varies along the length of the Mission Creek watershed. The creek flows through steep terrain in the mountains with vegetation that is relatively undisturbed in its upper reaches. On this portion of the drainage, riparian woodland vegetation occurs along Mission Creek and its tributaries, and the surrounding vegetation includes chaparral and coast live oak woodland. South of the Botanical Garden, the terrain becomes flatter and the creek shows more signs of disturbance associated with the greater density of adjacent commercial and residential development. Within the project study area, between Canon Perdido Street and Cabrillo Boulevard, the natural habitat of the creek is highly modified. Only remnants of native vegetation remain in the creek and estuary, and the area adjacent to the creek consists of buildings, ornamental landscapes, parking lots, and roads. Natural habitat is significantly limited by urban development including periodic clearance of vegetation and accumulated sediments from the channel, the indiscriminate use of the channel as a dumping ground for refuse, intermittent and private hard siding of its channels, housing along both sides of the channel, bridges, discharge of storm water lines into the channel (especially underneath bridges), and the concentration of business developments within or adjacent to residential neighborhoods.

In lower Mission Creek, three areas of concrete interrupt the natural channel bottom and banks. Approximately 0.3 miles of a concrete trapezoidal channel occurs from Los Olivos Street to Mission Street. An approximately 0.8-mile concrete trapezoidal channel occurs from Valerio Street to Canon Perdido, the point where the project study area begins. Both of these areas are outside of the project area and the coastal zone, and will not be affected by the proposed project. However, there is a 0.1-mile rectangular concrete-bottomed and stone-walled channel occurs in the project study area from the Southern Pacific Railroad tracks to Chapala Street. In addition, the banks and stream bottom in the project area have been altered with grout stone, sacked concrete, pipe and wire revetment, gabions, bulkhead structures, and other stabilization structures to prevent bank erosion and flooding of adjacent development. Thus, the physical characteristics of the creek have been modified to a great extent, especially along the lower portions.

Although the Mission Creek watershed is not pristine, the drainage as a whole provides important aquatic resources. Mission Creek and its main tributary, Rattlesnake Creek, are designated by Santa Barbara County as prime examples of freshwater streams in the County. This designation maintains that these creeks deserve special protection because the upper Mission Creek drainage supports extensive areas of quality riparian communities with high wildlife value. Even though the lower Mission Creek is significantly degraded, it provides habitat for two federally listed threatened species, the steelhead trout and the tidewater

goby. The steelhead trout uses Lower Mission Creek as a migratory corridor to the upper reaches of the watershed, which are suitable for fish spawning. In addition, a population of tidewater gobies lives within the Mission Creek estuary.

**2. Allowable Use and Alternatives.** Section 30233 of the Coastal Act identifies eight allowable uses for the dredging, diking and filling of coastal waters. Flood-control facilities are not defined as an allowable use under Section 30233(a). In addition, Section 30240(a) of the Coastal Act prevents the Commission from approving activities within an environmentally sensitive habitat area unless the activity is dependent on the sensitive resources. Obviously, a flood-control facility is not dependent on those resources.

However, Section 30236 of the Coastal Act allows for alteration of streams for flood-control purposes, provided that it meets all the requirements of that section. Section 30236 clearly anticipates dredging, diking, and filling of coastal waters for flood-control purposes and is a more specific policy than Section 30233(a) or 30240(a) and clearly shows legislative intent to allow alteration of streams for flood-control purposes.<sup>4</sup> In other words, Section 30236 of the Coastal Act requires the Commission to approve flood-control facilities in certain circumstances, even though such activities do not comply with the allowable-use and resource-dependent tests of Sections 30233(a) and 30240(a) of the Coastal Act, respectively. Thus, the permissive language in Section 30236 provides evidence of legislative intent that, where necessary and properly designed, flood-control facilities can be authorized under the Coastal Act in coastal streams and rivers.

Before the Commission can authorize a flood-control project, it must meet all of the requirements of Section 30236. That section allows alterations of streams if they are for flood-control purposes, if there are no other feasible method for protecting existing structures in the floodplain, and if such protection is necessary for public safety or to protect existing development. According to the Corps, the proposed flood-control facility is necessary to protect existing development. In its Draft Feasibility Study, the Corps states that:

*The primary problem affecting the lower Mission Creek study area is the threat of flooding to property which affects the health, safety and well-being of the residents of Santa Barbara. This is substantiated by flood records dating back to 1862. Records show that the area has suffered at least 20 considerable floods since 1900. Increased urbanization of the Santa Barbara area over the*

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<sup>4</sup> Giving precedence to the more particular provisions of section 30236 over the more general provisions of sections 30233(a) and 30240(a) is in accord with generally applicable principles of California law. See, e.g., Civil Code § 3534 ("Particular expressions qualify those which are general.").

*last century has contributed to increased runoff, and therefore, increased flooding frequencies.*

...

*Records since 1900 show that floods occurred in the Santa Barbara County area in 1906, 1907, 1909, 1911, 1914, 1918, 1938, 1941, 1943, 1952, 1958, 1962, 1964, 1967, 1969, 1973, 1978, 1980, 1983, 1995, and 1998.<sup>5</sup>*

Additionally, the Feasibility Study identifies the cost of damages from flooding of Mission Creek. These costs are reported in Table 1 below and include damage to both structures and contents in 1998 dollars.

**Table 1. Historical Flood Damages<sup>6</sup>**

<b>Date of Flooding</b>	<b>Damages</b>	<b>Flood Level</b>
March 1995	\$5,482,000	9-year
January 1995	\$11,808,000	55-year
January 1983	\$1,847,000	10-year
February 1983	\$2,086,000	11-year
January 1967	\$3,925,000	NA

According to this data, flooding on Mission Creek has damaged existing structures in the City of Santa Barbara.

The proposed project will improve the capacity of the stream from its existing capacity of 1,500 cfs, a five-year level of flood protection, to 3,400 cfs, a 20-year level of flood protection. The capacity improvement will be achieved through deepening and widening of the stream and through construction of floodwalls and riprap side slopes. Therefore, the Commission finds that the proposed project is for flood-control purposes and is necessary to protect existing development.

<sup>5</sup> Draft Feasibility Report, Santa Barbara County Streams, Lower Mission Creek Corps of Engineers, December, 1999, pp. 13-17.

<sup>6</sup> Draft Feasibility Report, Santa Barbara County Streams, Lower Mission Creek, Corps of Engineers, December 1999, p. 35.



The third test of Section 30236 limits the proposed flood-control facilities to those where there are no other feasible method for protecting existing structures. This test is similar to the alternatives requirement of Section 30233 of the Coastal Act, which prevents the Commission from authorizing dredging or filling within a stream unless the activity is the least damaging feasible alternative. The Corps analyzed several different alternatives to the proposed project. These alternatives included non-structural alternatives, several different flood-control designs, and the no-project alternative. The Corps' analysis of non-structural alternatives includes flood plain management, flood proofing, and relocation. The Corps describes these alternatives as follows:

*The City of Santa Barbara has been a participant in the National Flood Insurance Program which requires the City to maintain a Flood Plain Management Plan to reduce future flood plain hazards. The Reconnaissance Study also investigated the flood warning system and evacuation element of flood plain management. The study revealed that a flood warning system would be impractical to implement. Storm waters falling in the upper Mission Creek watershed reach the lower Mission Creek area in less than one hour, which would be too short a time for local residents to respond to any flood warning.*

*Flood proofing measures examined in the Reconnaissance Study include blocking flood water from entering a structure, jacking the first floor of a structure above a flood surface elevation, and constructing a flood wall or ring dike. Blocking the flood waters at individual structures was not considered feasible due to likely failure of the structures' walls as a result of hydrostatic and hydrodynamic forces. Raising (jacking) structures above flood water elevations was determined to be too expensive and uneconomical given the frequency of flooding in the area. Flood walls or ring dikes were not considered a feasible alternative due to inadequate space, aesthetic considerations, and the difficulty in ensuring proper closure of openings in the wall or dike during a flood.*

*Finally, relocation of structures in the flood plain was considered. However, Santa Barbara is a highly developed area which has very little space to relocate structures out of the floodplain.*

The Commission agrees that the lower Mission Creek is an urban stream and relocation or retrofitting existing development would likely be cost prohibitive and infeasible. The Corps also considered structural alternatives. Within the coastal zone, the Corps will primarily construct vertical walls, except for the easterly bank above and below Mason Street Bridge and between State Street and Cabrillo Boulevard, where the Corps will construct the toe wall and vegetated riprap

combination. The portion of the project outside of the coastal zone consists primarily of toe wall with vegetated riprap slopes. In a response to concerns raised by Commission staff, the City of Santa Barbara sent a letter explaining why a flood-control alternative that uses vegetated slopes within the coastal zone is not feasible (Exhibit 10). The City argues that such an alternative would require substantial acquisition of land and significantly increase the cost of the project. Additionally, the City would be required pursuant to state and federal law to mitigate for impacts to low-income housing and historic resources. That mitigation would also substantially increase the cost of the facility. According to the City, the cost increases required for such an alternative would result in a benefit-cost ratio of less than one,<sup>7</sup> which means that the Corps could not fund the proposal. Therefore, the City concludes that that alternative is not feasible. The Commission does not consider its determination of feasibility to be constrained or governed by the Corps' cost benefit analysis. Nevertheless, in this case, the Commission agrees with the City that the alternative described above is infeasible, and that alternatives that are feasible are not less environmentally damaging, as discussed below.

For example in its revised consistency determination, the Corps considered a smaller version of the proposed project. In its Feasibility Study, the Corps considered two alternatives that provide protection from a 15-year flood, as opposed to the 20-year flood protection provided by the proposed project. Initially, this alternative seemed preferable, because it may allow the use of more vegetated riprap slopes within the coastal zone without the significant land acquisition costs. Additionally, its impacts to the estuary may be less than the proposed project because the stream corridor would be narrower. Finally, its costs may be significantly less, and thus it may have a benefit-cost ratio of greater than one. However, upon further analysis, the Corps' evaluation concluded that this alternative would not increase the amount of vegetated slopes in the coastal zone, reduce the impact to the estuary, nor lower the project costs. Therefore, the Corps concluded that that alternative was not environmentally preferable to the proposed project (Exhibit 11). In conclusion, the Commission finds that proposed project is the least damaging feasible alternative.

**3. Mitigation.** The proposed project includes excavating streambed, removing aquatic vegetation, widening of the stream banks and removing native and exotic vegetation from the banks. Additionally, the project includes annual maintenance of the facility. The project will increase the amount of estuarine habitat in the coastal zone, as it includes widening of the creek and removal of most of the existing cement from the streambed. In addition, the project includes

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<sup>7</sup> If the economic benefits from a project are greater than its costs, then the benefit-cost ratio is greater than one and the project is acceptable to the Corps for federal participation. The Corps usually proposes the alternative with the highest ratio, also known as the "NED Alternative."

construction of floodwalls and riprap slopes along the entire project area. This bank-hardening component will not significantly affect coastal zone resources. Most of the banks in the coastal zone are already hardened with a mixture of bank treatments including sandbags, cement walls, wood walls, gabions, and other measures to reduce erosion. In addition, the walls of buildings form the stream banks in several locations. Based on a rough estimate of the existing structures along the stream bank, approximately 85% of the coastal zone banks are currently hardened. The following chart shows the existing extent of stream bank structures:

**Table 1, EXISTING BANK TREATMENTS IN THE COASTAL ZONE<sup>8</sup>**

<b>STRETCH</b>	<b>HARDENED BANK (feet)</b>	<b>NATURAL BANK (feet)</b>	<b>TOTAL (feet)</b>
Yanonali Street to Mason Street, Right Bank	430	0	430
Yanonali Street to Mason Street, Left Bank	390	110	500
Mason Street to State Street, Right Bank	480	10	490
Mason Street to State Street, Left Bank	210	210	420
State Street to Cabrillo, Right Bank	60	0	60
State Street to Cabrillo, Left Bank	160	0	160
<b>Total</b>	<b>1,730</b>	<b>330</b>	<b>2,060</b>
<b>Percentage of Coastal Zone</b>	<b>84.0%</b>	<b>16.0%</b>	

Despite the existing conditions of the creek, the project could result in impacts to stream resources, by decreasing the stream's ability to absorb pollution and reducing the amount of nutrients in the creek. In addition, the widening of the stream and the loss of bank vegetation may also result in water temperature increases because of the expanded surface area exposed to the sun and loss of shading. Finally, the increased maintenance from the project will cause annual disturbances to the stream including removal of recently established vegetation, application of pesticides, removal of pools, riffles, and other stream resources that may have formed since the previous year, removal of benthic organisms and burrowing male gobies, and other annual disturbances to stream resources.

<sup>8</sup> Personal Communications, John Moeur, LA District Corps of Engineers, 3/16/01.

The primary impacts from construction and maintenance of the flood-control facility are the loss of aquatic vegetation and potential increases in water temperature. However, the Corps incorporated mitigation for these impacts into its project. To mitigate for the loss of bank and instream vegetation, the Corps' project includes planting of riparian vegetation where it uses riprap and in habitat expansion zones. In addition, the Corps incorporated a proposal to provide assistance and incentives to private landowners to plant trees in the coastal zone on the inland side of the floodwalls where there is no vegetated riprap (Exhibit 11). However, this program is inadequate to mitigate for the loss of vegetation in the coastal zone, which will consist primarily of vertical floodwalls. The loss of vegetation along with creek widening will increase water temperatures.

Therefore, the Commission is conditioning its concurrence with this consistency determination to require the development of a landscaping plan that provides for the planting of native riparian vegetation inland of the vertical floodwalls within the coastal zone. That plan will be submitted to the Commission as part of the design phase consistency determination. In addition, the Corps maintenance activities do not include vegetation or sediment removal in the coastal zone, south of Yanonali Street. The area between Yanonali Street and Highway 101, the coastal zone boundary, is currently and will remain a cement and sand stone channel. The portion of the coastal zone with the more important estuarine habitat value is south of Yanonali Street, where there will be no vegetation and sediment removal. Therefore, any estuarine or riparian vegetation that grows in the Mission Creek estuary will remain and the planted riparian vegetation on the riprap slopes and inland of the vertical floodwalls will provide a source of nutrients and shading for the estuary.

Finally, the Corps and the County Flood-Control District maintenance activities inland of the coastal zone (the maintenance plan does not include sediment and vegetation removal in the coastal zone) are designed to minimize vegetation removal. Specifically, the Corps will remove vegetation from half the channel along one side for an arbitrary distance, then switching to the opposite bank for another arbitrary distance. Despite these mitigation measures, the Commission is concerned that maintenance activities will affect coastal resources and that the current level of analysis provided by the Corps does not adequately address this issue. Therefore, the Commission has conditioned its concurrence to require that the Corps submit a maintenance and adaptive management plan with its consistency determination for the design phase of this project.

The Commission believes that the Corps can reduce impacts to the estuary from maintenance activities if it properly designs a low-flow channel that maximizes the transport of sediment while maintaining its steelhead migration corridor function (as described in the Significant Disruption Section below). In order to finalize the feasibility study, the Corps has prepared preliminary designs of the channel. The Corps has clarified that the Commission is not approving any designs through this consistency determination. However, since the only plans the Commission has to review are preliminary, the Commission is concerned that an improperly designed channel will adversely affect coastal zone resources.

Therefore, the Commission is conditioning its concurrence to require final plans for the low-flow or pilot channel to be submitted to the Commission as part of the consistency determination for the design phase of this project.

Another potential adverse impact on stream resources from the proposed project is the possibility of an increase in water temperature. Specifically, the project includes widening of the stream and estuary thereby increase amount of water surface exposed to solar radiation. In addition, the project will remove a significant amount of non-native vegetation that provides shading of the stream. The Corps' analysis of this impact (Exhibit 12) concludes that the project will not significantly affect stream temperature. This conclusion is based on project features designed to minimize any temperature impacts. These mitigation measures include planting of trees inland of the floodwalls, planting of riparian vegetation on riprap slopes and habitat expansion zones, maintenance activities that do not include removal of vegetation in the estuary, and the mosaic vegetation removal (described above) inland of the coastal zone. In addition, as described above, the Commission has conditioned its concurrence to require the Corps to prepare a landscaping plan that provides for the planting of trees inland of the vertical floodwalls in the coastal zone. These mitigation measures and conditions will prevent any long-term temperature impacts from the proposed project.

Despite these improvements, the Commission believes that the project could have an overall adverse effect on estuarine resources. In response to this concern, the Corps modified its consistency determination to commit to prepare a comprehensive estuary management plan. The Corps will use environmental restoration funds to support the City's ongoing estuary management planning effort. The Corps also agreed to submit a consistency determination for that plan.

In conclusion, the Commission finds that the project will benefit the stream resources by widening of the stream and estuary and removal of artificial hard bottom in the estuary and stream. In addition, the Commission finds that the project includes mitigation for potential impacts to aquatic resources from vegetation removal and temperature increases. Finally, the Commission has conditioned its concurrence to address any remain impacts to stream resources. Therefore, the Commission finds that the project includes mitigation measures that will minimize environmental impacts from the proposed project in a manner consistent with the requirements of Section 30233(a) of the Coastal Act.

#### **4. Avoiding Significant Disruption.**

As described above, the Mission Creek provides habitat for steelhead trout and tidewater gobies, both of which are listed as threatened species. These sensitive resources are also ESHAs under the Coastal Act. Section 30240 of the Coastal Act requires that the project avoid significant disruption to the sensitive resources. The stream features (removal of hard bottom areas and stream

widening) will increase the amount of habitat available to these species. In addition, mitigation measures described above will mitigate for impacts to stream resources, and thus reduce impacts to listed species. Finally, the Corps has incorporated measures into its project specifically to minimize impacts to these sensitive species.

The U.S. Fish and Wildlife Service (Service) and the National Marine Fisheries Service (NMFS), as required by the federal Endangered Species Act, have evaluated all of these measures. Both of these resource agencies have responded to the Corps with favorable biological opinions (Exhibit 13 and 14). These biological opinions allow the project to go forward with modifications to protect listed species. The required modifications have been incorporated into the Corps' consistency determination (Exhibit 12).

Both the Service and NMFS recognize potential effects on listed species and add conditions to their biological opinions to address potential adverse effects. The specific measures incorporated into the project to avoid impacts to sensitive species include timing the project to avoid breeding and migration seasons, capturing and relocating these species prior to construction, and adding instream features to the project that will enhance the ESHA.

To avoid construction impacts on sensitive species, the Corps proposes the following measures.

#### **Measures in the estuary to protect steelhead trout and tidewater gobies<sup>9</sup>**

1. No construction work in water anywhere in the estuary from December 1<sup>st</sup> to June 1<sup>st</sup>;
2. Divide a suitable length of the estuary down the middle with an impermeable barrier;
3. Dam half the estuary at the upper end of the center-line barrier with sheet piling;
4. Qualified biologists walk downstream in zigzag pattern to herd as many fish as possible from the incipient enclosure;
5. Dam the lower end of the enclosure with sheet piling immediately;
6. Fish biologists seine the entire confined half thoroughly to remove any gobies and other large organisms to the wet side of the construction enclosure;
7. Commence pumping water from the enclosure with intakes to pump fitted with 1/2 mesh screens;

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<sup>9</sup> Final EIS, pp. 10-61—10-62.

8. Fish biologists monitor drying enclosure and seine it thoroughly at least twice a week;
9. When construction on one side has been complete, the downstream wall of the enclosure shall be removed first, followed by the upstream end;

**Measures in the remaining portion of the creek to protect steelhead trout**

10. No mechanized equipment permitted in water between December 1<sup>st</sup> and the end of March;
11. If continuous flows greater than half an inch deep occur through the Caltrans portion of Mission Creek (just above the project area) between April 1<sup>st</sup> and June 1<sup>st</sup> operation of mechanized equipment in the stream channel shall cease and may not resume until steady flows have dropped below that threshold;
12. Prior to starting work in the next region upstream, a qualified biologist will examine all scour pools at bridge abutments, undercut concrete ledges, etc.;
13. Any steelhead, or young salmonid fish in particular, found unexpectedly in these small refuges will be relocated upstream;
14. Silt curtains shall be deployed below the immediate area of construction. Curtains will be deployed in pairs, with a gap at least 30 feet wide between the upstream and the downstream curtain to reduce suspended sediments in the water;
15. A temporary net shall be strung across the existing low flow channel to prevent salmonids from entering the section of creek next to be constructed;
16. Once certified free of protected fish, the current will be diverted to a temporary pilot channel;
17. As many culvert pipes as determined necessary to carry anticipated low flows (at least 40 ft/sec capacity) shall be placed into the pilot channel. Culverts shall be at least 24 inches in diameter. All joints between culverts shall be smooth and the lining of each culvert shall also be smooth to the touch;
18. Once culverts have been placed, the biologist shall monitor each section at least twice a week to verify that screens are in place over intakes and water has not leaked into the local section under construction;
19. Prior to completion of work in a given section, the temporary net shall be re-suspended upstream of the culvert intake and fully across the existing low flow channel;

In summary, these measures will avoid most of the significant impacts to steelhead by avoiding the migration season, removing any remaining steelhead from the construction area, and isolating the construction area from the rest of the creek. According to NMFS, steelhead use lower Mission Creek primarily as a migratory corridor and the creek does not contain habitat for overwintering juveniles or habitat for spawning. The migratory use of the stream will not be altered by the proposed project. In addition, the Corps has included features in the project design to improve the steelhead migratory function of this portion of the creek. These improvements include installation of fish ledges to provide some shading for steelhead trout, and fish baffles (a double row of large angular rocks) that provide areas for small fish to hide. The project also includes several boulder fields in the stream that are necessary as energy dissipaters but also provide some changes in water conditions making the stream more suitable for steelhead migration. Finally, the project will include a low flow channel (which will be reconstructed after maintenance) to provide better migratory habitat for steelhead trout. The NMFS conclusion about the project's effects is as follows:

*Steelhead occurring within the project area during construction will be limited mainly to rearing juveniles and outmigrating smolts. Minor amounts of harassment and incidental mortality could occur (10-20 fish captured and 1-2 individuals experience mortality during relocations) during stream diversion and relocations. This small number of individuals affected is not expected to affect the survival of the steelhead population in Mission Creek or the survival and recovery of the Southern California ESU.*

*NMFS expects 5380 linear ft of temporary and permanent impacts to designated critical habitat, along the channel invert and both embankments, resulting from the project action. Within this area, project construction will result in the permanent loss of natural banks, and temporary degradation to the stream bed and riparian vegetation. In addition, maintenance activities will result in ongoing impacts to the stream bed. These impacts, however, will not alter the current use of lower Mission Creek as a steelhead migration corridor. Furthermore, with the maintenance of a natural bottom channel bed, incorporation of fish baffles and ledges, and enhancement of the riparian corridor, including replacement of nonnative with native vegetation, these impacts are not expected to diminish the value of habitat for the survival and recovery of the Mission Creek population or of the Southern California ESU.<sup>10</sup>*

However, the Commission is concerned that the preliminary design of the low-flow channel is insufficient to allow the Commission to assess the effects and benefits to steelhead. To provide the most significant benefit, the pilot channel

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<sup>10</sup> Biological Opinion, Mission Creek Flood-Control Channel, NMFS, August 2, 2000, pp.25-26.



must be designed to maximize sediment transport and still provide a migration corridor for steelhead trout. To address this issue, the Commission has attached a condition to its concurrence requiring that the Corps submit final plans for the pilot channel as part of the consistency determination for the design phase of this project.

The project is also designed to avoid most of the significant impacts to tidewater gobies. The project does not include any activities in Mission Creek lagoon (south of Cabrillo Boulevard), which is goby breeding habitat. The creek above Cabrillo Boulevard has considerable amount of cement placed on the streambed making it unsuitable for goby breeding. Other mitigation measures include timing of project construction to occur between April and October when water flow is minimal, not allowing work in flowing water unless absolutely necessary, placing silt-fencing during routine maintenance activities, using existing access points, ensuring that construction equipment is in good working order and inspected for leaks and drips on a daily basis prior to commencement of work, and developing a storm water pollution prevention plan to prevent discharges of oil or grease into the creek. Finally, the Corps proposes to install tidewater goby refugia on the floodwalls in the estuary to provide hiding places for the gobies during high water flows (the Service describes this as a novel but untested concept with uncertain beneficial effects). In addition, the Service concludes that the project impacts to tidewater gobies are as follows:

*After reviewing the current status of the tidewater goby, the environmental baseline for the action area, the effects of the proposed Project, and the cumulative effects, it is our biological opinion that the Lower Mission Creek Flood Control Project, as proposed, is not likely to jeopardize the continued existence of the tidewater goby. We have reached this conclusion because the project is unlikely to result in the permanent extirpation of the species from Mission Creek. Also, the Corps and County will implement measures to minimize adverse effects, and the quality of the spawning habitat will not be substantially affected by the project. Lastly, the tidewater goby currently occurs in approximately 85 streams and the loss of the population in Mission Creek, however unlikely, would not appreciably reduce the ability of the species to survive and recover.<sup>11</sup>*

However, the Commission is concerned that the significant alteration of the stream and ongoing maintenance activities could result in significant effects on the goby. To address this potential impact, the Commission is conditioning its concurrence to require the Corps to complete the goby portion of the comprehensive estuary management plan and incorporate it into the flood-control project. The condition also requires the Corps to include the goby portion of the

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<sup>11</sup> Biological Opinion, Mission Creek Flood-Control Channel, USFWS, June 1, 2001, p.14.

management plan in the consistency determination for the design phase of the flood-control project. This condition addresses any remaining potential effects on the goby.

In conclusion, the project area of Mission Creek provides a migration corridor for steelhead trout and foraging habitat for tidewater gobies. The project construction will affect these sensitive species, but the Corps' project includes measures to minimize construction-related impacts. The completed flood-control channel will provide similar habitat values to that which is currently there. Additionally, the project includes features that will provide additional benefits to these sensitive species. These features include removal of cement from streambed, construction and maintenance of a low-flow channel, and placement of boulder fields, fish ledges and baffles, and goby refugia. Finally, the Commission has attached conditions to its concurrence that addresses potential impacts to these species. Therefore, the Commission finds that the proposed project will not significantly disrupt the sensitive species and is consistent with Section 30240 of the Coastal Act.

**5. Other Habitat Issues.** In the previous staff recommendations on this project, the staff has raised concerns about adequacy of monitoring and use of non-native vegetation to cover floodwalls and fences. The previous concern on the monitoring was that it was limited to five years and was not based on performance standards. The Corps has modified the monitoring to identify restoration goals and monitor the area until those goals are accomplished. Specifically, the Corps will monitor for five years. If the plants do not meet pre-determined growth and survival rates, actions shall be taken to improve growing conditions such as fertilization, increased irrigation, and replanting. The Corps' restoration goal is 90% success of the planted vegetation at end of five years. After five years from the project construction, the Santa Barbara County will assume all operational and maintenance activities. Monitoring of plants will be incorporated into the annual maintenance manual, and Santa Barbara County will monitor vegetation for the life of the project. In addition, the Corps will monitor project impacts on steelhead and gobies and will submit all of these monitoring plans to the Commission. These modifications resolve previous concerns over monitoring and the Commission finds that the monitoring is consistent with the Coastal Act's habitat policies.

The original project proposal provided for planting non-native ivy on the floodwalls and the fences above the facility. The Commission staff previously raised concerns that this type of vegetation is likely to spread into the riparian plants and reduce their habitat value. Based on Commission concerns, the Corps revised its project to eliminate any provision to plant non-native vegetation. Specifically, the Corps proposes to use locally native vegetation, such as blackberry vines, to cover fences and floodwalls. With this modification, the project's re-vegetation provisions are consistent with the habitat policies of the Coastal Act.

**6. Conclusion.** In conclusion, the Commission finds that the proposed project is necessary to protect existing structures from flooding. In addition, based on analysis provided by the Corps, the proposed project is the least damaging feasible alternative. The project also includes feasible habitat improvements and mitigation, including monitoring, that meets the mitigation requirements of the CCMP. Finally, the project incorporates measures and is conditioned in a manner that will avoid significant construction and operational disruptions to the threatened species habitat within the stream. Therefore, the Commission finds that the proposed project is consistent with the stream alteration, wetland, and habitat policies of the CCMP.

**B. Water Quality.** The Coastal Act protects the quality of coastal waters, including streams. Section 30231 of the Coastal Act provides that:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Mission Creek is located in a relatively urban part of the City of Santa Barbara. The water quality of Mission Creek has been degraded by the discharge of non-point source pollution associated with urban land uses. As stated above, Mission Creek provides habitat for two federally listed threatened fish species, which can be adversely affected by water pollution. The proposed project has the potential to adversely affect these sensitive species by increasing point and non-point sources of pollution.

The proposed project may increase sedimentation into the creek during construction and maintenance operations. In similar situations, the Commission has required a pollution prevention plan to address these construction-related impacts. The environmental documents for this project indicate that the Corps will prepare a runoff and erosion control plan. Since the Corps has not completed this plan, the Commission cannot evaluate it for consistency with the water quality policies of the CCMP. However, the Corps has committed to phased consistency review of this project. The Corps will approve the final project design through a process known as "Pre-construction Engineering Design" (PED). The Corps will evaluate the PED for coastal zone effects and, if necessary, consistency with the CCMP. Since the storm water pollution prevention plan (SWPPP) will be prepared as part of the final plan, the Commission will review it for consistency when it reviews the PED for the project. At this point in the

process, the Corps has committed to preparing a SWPPP that will minimize non-point source pollution from construction and maintenance activities. This commitment along with an agreement to conduct a phased consistency review that will include a SWPPP is sufficient to find the proposed project consistent with the water quality policies of the CCMP.

Another water quality concern is from discharges associated with flood-control maintenance activity. The Corps' consistency determination allows for annual maintenance activities that include sediment and vegetation removal and the use of herbicides to control aquatic vegetation. However, the consistency determination for this project does not include any sediment or vegetation removal in the coastal zone. In addition, the Corps committed to additional mitigation measures to prevent adverse water quality effects on coastal zone resources from maintenance activities inland of the coastal zone. These water quality measures are as follows:<sup>12</sup>

1. All routine maintenance shall be accomplished between August and mid-October.
2. A pair of silt curtain fences shall be set across the low flow not more than 100 yards downstream of the work area; the fences shall be approximately 10 yards apart.
3. If storm events do not reduce conveyance more than 15% then the next maintenance cycle shall involve only mowing of vegetation.
4. No discharge of oil or spill of contaminated material should be allowed within the creekbed (conditions identified above will be followed during the future maintenance).
5. BMPs will be employed to avoid excessive impacts to water quality.

Additionally, the project provides for the use of herbicides to control vegetation. However, since the project does not include vegetation removal for maintenance purposes in the coastal zone, herbicides will only be used inland of the coastal zone boundary. Additionally, the vegetation removal activities will occur during the dry season when creek flows are minimal or non-existent. Finally, the type and manner with which the Corps will use herbicides will be consistent with state and federal regulations. The Corps and subsequently the Flood-Control district will only use herbicides authorized for aquatic and near-aquatic use, Rodeo™ and Round-up™. Therefore, the Commission finds the use of herbicides for vegetation control inland of the coastal zone will not affect water quality resources of the coastal zone.

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<sup>12</sup> Final EIS, pp. 7-18—7-19.

The proposed flood-control facility provides the Corps with an opportunity to restore water quality resources in Mission Creek by incorporating appropriate measures or technologies into the project design to reduce non-point source pollution. The reconstruction of the flood-control facility, including the replacement of bridges, installation of a culvert under Highway 101, and construction of floodwalls, provide the Corps with an opportunity to design the facility to incorporate measures into the project in order to reduce non-point source pollution. Section 30231 of the Coastal Act requires the restoration of water quality resources where feasible. However, based on discussions with water quality experts within the Commission staff and Santa Barbara County, it is undesirable to install non-point source pollution treatment devices at the storm drain outfall into the flood-control channel because that location makes maintenance of the treatment device more problematic.<sup>13</sup> It seems preferable to place the treatment devices away from the creek where it is more accessible for maintenance purposes. In addition, the City of Santa Barbara is applying for a Phase II Stormwater NPDES to address non-point source pollution and the City has other programs to address water quality. Finally, the Corps has agreed that prior to construction it will coordinate with the City's water quality staff to determine if any of the activities proposed by the City could be coordinated with the flood-control project. With these measures, the project is consistent with the water quality policies of the Coastal Act.

In conclusion, the Commission finds that the proposed project will not significantly affect water quality resources of the coastal zone. Specifically, the project provides for water quality protection measures for construction and maintenance of the flood-control channel. Additionally, the Corps will coordinate its construction activities with the City's non-point source pollution program to avoid redundant construction efforts and increasing construction efficiency. Therefore, the Commission finds that the proposed project is consistent with the water quality policies of the CCMP.

**C. Sand Supply.** Section 30233(d) of the Coastal Act provides for the use of suitable material removed from coastal streams to be used for beach replenishment purposes. This section provides that:

*Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before*

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<sup>13</sup> Personal Communication, Santa Barbara County, 3/29/01.

*issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

The proposed project includes the removal of sediment from the stream. With such activities, the Coastal Act requires the use of suitable sediment for beach replenishment purposes, if it is feasible. In this case, the Corps proposes to test the material prior to excavation to determine if it is suitable for beach disposal. If it is suitable, the Corps will use the sediment for beach replenishment purposes. Otherwise, the Corps will dispose this sediment at nearby landfills. The Corps and the County will conduct the same analysis for sediment removal associated with maintenance activities. The final EIS for the proposed project does not include an evaluation of the suitability of this material for beach replenishment. In order to make such an evaluation, the Corps must analyze the physical and chemical characteristics of the sediment. Without this information, the Commission cannot determine if sediment disposal activities would adversely affect coastal resources. However, these evaluations will be conducted and submitted to the Commission staff during the PED consistency review. With the commitments for phased consistency review and use of suitable material for beach replenishment purposes, the Commission finds that the proposed project is consistent with the sand supply policies of the Coastal Act.

**D. Visual Resources.** The Coastal Act protects visual resources of the coastal zone. Section 30251 of the Coastal Act provides, in part, that:

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas....*

The proposed construction of the vertical walls south of Highway 101 could adversely affect visual resources of the coastal zone. In its environmental documents, the Corps proposes to design the project in a manner that minimizes visual impacts. The Corps describes addresses visual quality as follows:

*Aesthetic values would be increased by planting native riparian types of vegetation on the upper slope of the creek. Establishment of vegetation on the creek banks would enhance aesthetic values of the project area compared to other alternatives and existing conditions. Vertical walls would not be visible to people walking along the creek banks, as the upper banks would be covered with vegetation. Aesthetic treatment would be applied to visible lower banks to minimize impacts of the vertical walls. During the public scoping meeting, people voiced their concerns regarding aesthetic resources located within the project area. The new constructed channel would be pleasing and natural looking. Their concerns are addressed by implementation of this alternative. The visual quality*

*of the project reach would have positive impacts on tourists visiting the City of the Santa Barbara. Within a few years, planted vegetation would be mature, and trees would increase the visual value of the project area. Lower vertical walls may not be visible to people walking on a side of the creek banks due to the vegetation growth on upper banks. It should be noted, however that full-height vertical walls would be used for most of the distance between State and Mason Streets. These walls would also receive aesthetic treatment, including the use of colored concrete and forms that would mimic the appearance of sandstone or natural vertical creek banks.<sup>14</sup>*

As stated above, most of the Creek within the coastal zone will be developed with vertical walls and will not appear as a natural stream. However, most of the stream within the coastal zone (approximately 85%) is already developed with some manmade structures. The remaining portion of the stream within the coastal zone still has some natural appearance. The proposed project will change that appearance of the entire stream within the coastal zone to a channelized hardened stream. Despite this change in character, the Corps believes that the project will improve the visual character of the creek. This conclusion is based on several factors: 1) the project will remove trash and debris from the creek and project fences will make it more difficult to dispose of trash in the stream; 2) the project will remove buildings that are immediately adjacent to the creek (in some cases the walls of the buildings are the banks of the stream); 3) removal of several different types of existing bank treatments that have already adversely affected the stream's visual quality; and 4) the floodwalls will be constructed out of sandstone which will be more aesthetically pleasing than the current bank treatments and the project will include planting of vegetation that will also improve the visual quality of the stream. Finally, through the PED consistency review, the Commission will be able to ensure that the final design will protect and improve visual resources. Therefore, the Commission finds that the proposed project is consistent with the view protection policies of the Coastal Act.

**E. Archaeological Resources.** The Coastal Act provides for protection of historic and archaeological resources. Section 30244 of the Coastal Act provides that:

*Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

In addition, Section 30251 provides, in part, that:

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<sup>14</sup> FEIS, p. 13-6.

*... Permitted development shall be sited and designed ... to be visually compatible with the character of surrounding areas....*

The proposed project is located in an area that contains both historic structures and archaeological sites. The environmental documents for the Mission Creek project state that there are historic and archaeological resources potentially affected by the proposed project. The project includes measures to protect these resources by avoiding the removal of historic buildings and constructing a sandstone channel that is visually consistent with the historic character of downtown Santa Barbara. In addition, the Corps has coordinated with the State Historic Preservation Officer (SHPO), who did not raise any objections with the Corps' project. Therefore, the Commission finds that the proposed project is consistent with the archaeological policies of the Coastal Act.