

Appendix A
Biological Special-Status Species List

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Federally Listed, Proposed, and Candidate Species with Potential to Occur in the Action Area

Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurring in the Action Area
Amphibians				
<i>Ambystoma californiense</i>	California tiger salamander	C	Annual grasslands and grassy understory of valley-foothill hardwood habitats, need underground refuges, need vernal pools, stock ponds or other seasonal water sources for breeding. The species persists in disjunct remnant vernal pool complexes in Sonoma and Santa Barbara counties, in vernal pool complexes and isolated ponds scattered mainly along narrow strips of rangeland on each side of the Central Valley from southern Colusa County south to northern Kern County, and in sag ponds and human-maintained stock ponds in the coast ranges from Suisun Bay south to the Temblor Range.	Not likely; appropriate habitat characteristics are not present in the action area. No vernal pools or stock ponds occur in the action area. No known occurrences where found near the action area.
<i>Bufo californicus</i>	Arroyo toad	E	Semi-arid regions near washes or intermittent streams; habitats used include valley-foothill and desert riparian as well as a variety of more arid habitats, including desert wash, palm oasis, Joshua tree, mixed chaparral, and sagebrush.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Rana aurora draytonii</i>	California red-legged frog	T	Dense, shrubby riparian vegetation associated with deep (≥ 0.7 m), still, or slow-moving water.	Known to occur in Santa Rosa Creek adjacent to the action area. Red-legged frogs were observed in 1999 in Santa Rosa Creek, within 1 mile of the beach (CDFG 2003). Action area is included in unit 21 of the proposed critical habitat for the California red-legged frog (USFWS 2004).
Reptiles				
<i>Gambelia</i> (= <i>Crotaphytus</i>) <i>silus</i>	Blunt-nosed leopard lizard	E	Inhabits the San Joaquin Valley region in expansive, arid areas with scattered vegetation; inhabits non-native grassland and alkali sink scrub communities of the Valley floor marked by poorly drained, alkaline, and saline soils, mainly because remaining natural land is of this type. Absent from areas of steep slopes and dense vegetation, and areas subject to seasonal flooding.	Not likely; appropriate habitat characteristics are not present in the action area. Action area is located outside of this species range.
Birds				

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<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	T	Habitats used by nesting and non-nesting birds include sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, salt pond levees, and gravel bars.	Not likely; appropriate habitat characteristics are not present in the action area. Closest known occurrence is at Toro Creek Beach, approx. 2.5 miles north-northwest of Highway 41 junction with Highway 1 (CDFG 2003).
<i>Coccyzus americanus</i>	Western yellow-billed cuckoo	C	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage that abut on slow-moving watercourses, backwaters, or seeps. This species is likely found only along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter County, the south fork of the Kern River in Kern County, and along the Santa Ana, Amargosa, and lower Colorado Rivers.	Not likely; action area is outside of the known range of the species. No known occurrences were found near the action area.
<i>Gymnogyps californianus</i>	California condor	E	Permanent resident of the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles County; forages over wide areas of open rangelands, roosts on cliffs and in large trees and snags; occurs mostly between sea level and 2,700 m (0–9,000 ft) and nests from 610–1,372 m (2,000–6,500 ft). Total population in early 1980s estimated to be fewer than 20 and declining; occurrence in the wild now in question. Two U.S. Forest Service sanctuaries have been set aside within the Los Padres National Forest, primarily for nesting and roosting protection .	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Haliaeetus leucocephalus</i>	Bald eagle	T	Winters throughout most of California at lakes, reservoirs, river systems, and some rangelands and coastal wetlands on protected cliffs and ledges. Also nests on bridges and buildings in urban areas. Nests are normally built in the upper canopy of large trees, usually conifers.	Not likely; appropriate habitat characteristics are not present in the action area. Closest known occurrence is at Las Tablas Creek territory, along Las Tablas Creek (Lake Nacimiento), approx. 5 miles northwest of Adelaida (CDFG 2003).

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<i>Pelecanus occidentalis californicus</i>	California brown pelican	E	Found in estuarine, marine subtidal, and marine pelagic waters along the California coast. In Northern California, fairly common to uncommon June to November. Usually rests on water or inaccessible rocks (either offshore or on mainland), but also uses mudflats, sandy beaches, wharfs, and jetties.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Rallus longirostris obsoletus</i>	California clapper rail	E	Tidal salt marshes near tidal sloughs; perennial inhabitant of tidal salt marshes of the greater San Francisco Bay	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Sterna antillarum</i> (=albifrons) <i>browni</i>	California least tern	E	Migratory in California; breeding colonies are located in Southern California along marine and estuarine shores, and in San Francisco Bay in abandoned salt ponds and along estuarine shores; feeds in nearby shallow, estuarine waters or lagoons where small fish are abundant. After breeding, family groups regularly occur at lacustrine waters near the coast of Southern California. Prefers undisturbed nest sites on open, sandy, or gravelly shores near shallow-water feeding areas in estuaries.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	E	Rare, local, summer resident below about 600 m (2,000 ft) in willows and other low, dense valley foothill riparian habitat and lower portions of canyons, mostly in San Benito and Monterey Counties; in coastal Southern California from Santa Barbara County south; and along the western edge of the deserts in desert riparian habitat.	Not likely; project location is outside of the known range of this species. No known occurrences were found near the action area.
Mammals				
<i>Dipodomys heermanni morroensis</i>	Morro Bay kangaroo rat	E	Inhabits coastal scrub vegetation on old sand dune substrate and is geographically isolated from other subspecies of the Heermann's kangaroo rat. Until recently, it was found only in several small areas of less than one-half square mile in total size near Los Osos in San Luis Obispo County. Currently, if it still exists, it is thought to inhabit just one small privately owned parcel that remains in native vegetation. This species may be extinct.	Not likely; appropriate habitat characteristics are not present in the action area. Project location is outside of the known range of the species. No known occurrences were found near the action area.

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Scientific Name	Common Name	Federal Status	Preferred Habitat	Likelihood of Occurring in the Action Area
<i>Dipodomys ingens</i>	Giant kangaroo rat	E	Permanent resident that occurs in scattered colonies along the western side of the San Joaquin Valley (e.g., Carrizo Plain and Panoche Valley); found on fine sandy loam soils supporting sparse annual grass/forb vegetation, and marginally found in low-density alkali desert scrub.	Not likely; appropriate habitat characteristics are not present in the action area. Project location is outside of the known range of the species. No known occurrences were found near the action area.
<i>Enhydra lutris nereis</i>	Southern sea otter	T	Preferred habitat is kelp beds; lives in a narrow band along the coast ; rarely ventures more than about 1 1/2 miles (3km) offshore.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	Inhabits grasslands and scrublands, many of which have been extensively modified. Types of modified habitats include those with oil exploration and extraction equipment, wind turbines, and agricultural mosaics of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands. Oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities also provide habitat for kit foxes.	Not likely; appropriate habitat characteristics are not present in the action area.
Fish				
<i>Eucyclogobius newberryi</i>	Tidewater goby	E (PD)	Brackish shallow lagoons and lower stream reaches where the water is fairly still but not stagnant; found in water with salinity levels from 0 to 10 ppt, temperature levels from 35 to 73 degrees Fahrenheit, and water depths from 5 to 7.5 feet.	Not likely; appropriate habitat characteristics are not present in the action area. Closest known occurrence was observed in 2002 in a shallow, warm lagoon located at least 0.7 mile from the action area (CDFG 2003).
<i>Oncorhynchus mykiss irideus</i>	South Central California coast steelhead	T	Pacific Ocean, spawns in coastal streams and rivers, over gravel beds. Pool depth, volume, amount of cover, and proximity to gravel for spawning play key roles.	Known to occur in Santa Rosa Creek adjacent to action area. Steelhead were observed in 1999 in Santa Rosa Creek, along Cambria Road, near Mammoth Rock School (CDFG 2003).
Invertebrates				
<i>Branchinecta longiantenna</i>	Longhorn fairy shrimp	E	Vernal pools. Known around the borders of Soda Lake in San Luis Obispo County in vernal pools of the Northern Claypan type (Eriksen and Belk 1999).	Not likely; appropriate habitat characteristics are not present in the action area. Project location is outside of the known range of the species. No known occurrences were found near the action area.

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<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T	Vernal pools; small swales, earth slumps, or basalt-flow depression basins with grassy or occasionally muddy bottom, in unplowed grassland (Eriksen and Belk 1999). Known in eastern San Luis Obispo County.	Not likely; appropriate habitat characteristics are not present in the action area. Project location is outside of the known range of the species. No known occurrences were found near the action area.
<i>Helminthoglypta walkeriana</i>	Morro shoulderband snail (=banded dune snail)	E	Restricted to sandy soils of coastal dune and coastal sage scrub communities near Morro Bay.	Not likely; appropriate habitat characteristics are not present in the action area. Project location is outside of the known range of the species. No known occurrences were found near the action area.
Plants				
<i>Arctostaphylos morroensis</i>	Morro manzanita	T	Chaparral, cismontane woodland, coastal dune, and coastal scrub; 5 to 205 meters. Blooming period from December through March.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Arenaria paludicola</i>	Marsh sandwort	E	Freshwater-marsh habitats; 3 to 170 meters. Blooming period from May through August.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Caulanthus californicus</i>	California jewelflower	E	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; 70 and 1,000 meters. Blooming period from February through May.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Chlorogalum purpureum</i> var. <i>purpureum</i>	Purple amole	T	Chaparral, cismontane woodland, valley and foothill grassland; endemic to Monterey County; often in grassy areas with blue oaks in foothill woodland; 300 to 330 meters. Blooming period from April through June.	Not likely; this species is endemic to Monterey County; no known occurrences were found near the action area, and no suitable habitat occurs in action area.
<i>Chlorogalum purpureum</i> var. <i>reductum</i>	Camatta Canyon amole	T	Cismontane woodland, serpentine substrate; 600 to 630 meters. Blooming period from April through May.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Chorizanthe pungens</i> var. <i>pungens</i>	Monterey spineflower	T	Coastal dunes, chaparral, cismontane woodland, coastal scrub; only known from Monterey and Santa Cruz Counties; sandy soils in coastal dunes or more inland within chaparral or other habitats; 3 to 450 meters. Blooming period from April through June.	Not likely; this species is only known in Monterey and Santa Cruz Counties ; no known occurrences near the action area. A historical (1842) occurrence is located 6.8 miles from the action area in San Simeon (CDFG 2003).

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<i>Cirsium fontinale</i> var. <i>obispoense</i>	Chorro Creek bog thistle	E	Chaparral, cismontane woodland; serpentine substrate in seep habitats; endemic to San Luis Obispo County; 35 to 365 meters. Blooming period from February through July.	Not likely; appropriate habitat characteristics are not present in the action area. Closest known occurrence is located 4.3 miles from the action area at San Simeon Creek, approx. 0.2 miles downstream (along the road) of confluence of north and south forks for San Simeon Creek, 5.2 miles from Highway 1 (CDFG 2003).
<i>Cirsium loncholepis</i>	La Graciosa thistle	E	Moist conditions in brackish-marsh, coastal dunes, and coastal scrub; 4 to 220 meters. Blooming period from May through August.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Clarkia speciosa</i> var. <i>immaculata</i>	Pismo clarkia	E	Chaparral, cismontane woodland, valley and foothill grassland; occurs in opening and edge habitats; 25 to 185 meters. Blooming period from May through July.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	Salt marsh bird's-beak	E	Coastal dunes, marshes and swamps, salt marshes; 0 to 30 meters. Blooming period from May through October.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Eriastrum hooveri</i>	Hoover's woolly-star	PD	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland; 50 to 915 meters. Blooming period from March through July.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Eriodictyon altissimum</i>	Indian Knob mountainbalm	E	Chaparral, cismontane woodland, coastal scrub; 80 to 270 meters. Blooming period from March through June.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Lupinus nipomensis</i>	Nipomo Mesa lupine	E	Dunes and coastal habitats; 10 to 50 meters. Blooming period from March through May.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Monolopia</i> (= <i>Lembertia</i>) <i>congdonii</i>	San Joaquin woolly-threads	E	Chenopod scrub and valley and foothill grassland; endemic to San Joaquin Valley; alkaline or loamy plains; sandy soils, often with grasses and within chenopod scrub; 60 to 800 meters. Blooming period from February through May.	Not likely; appropriate habitat characteristics are not present in the action area. This species is endemic to San Joaquin Valley and there are no known occurrences near the action area.

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<i>Rorippa gambelii</i>	Gambel's watercress	E	Freshwater-marsh and brackish-marsh habitats; 5 to 330 meters. Blooming period from April through September.	Not likely; appropriate habitat characteristics are not present in the action area.
<i>Suaeda californica</i>	California seablite	E	Marshes and swamps; margins of coastal salt marshes; 0 to 5 meters. Blooming period from July through October.	Not likely; appropriate habitat characteristics are not present in the action area. Closest known occurrence is in Estero Bluffs at and adjacent to confluence of San Geronimo Creek and Estero Bay (CDFG 2003).

Federal Endangered Species Act

E = Endangered

T = Threatened

C = Candidate for listing status

PD = Proposed for De-listing

Source: USFWS species list for San Luis Obispo County and CNDDDB search for seven quadrangles surrounding the project area.

Appendix B

**Concurrence Letter from National Oceanic and Atmospheric Administration
National Marine Fisheries Service**

Appendix B
NOAA Fisheries Concurrence Letter



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

APR 14 2004

151422SWR03PR13741:APS

Sandro Amaglio
Federal Emergency Management Agency
Region IX
1111 Broadway, Suite 1200
Oakland, California 94607-4052

Dear Mr. Amaglio:

The National Marine Fisheries Service (NOAA Fisheries) received the biological assessment and your letter of March 24, 2004, concerning the County of San Luis Obispo's (County) proposed flood-control project in Cambria. The information contained in the biological assessment, and characteristics of the existing flood basin noted by our fishery biologist, Anthony Spina, during a recent site visit, have provided an improved understanding of the manner in which the proposed action may affect threatened steelhead (*Oncorhynchus mykiss*) in Santa Rosa Creek. Based on this improved understanding, NOAA Fisheries now believes the proposed action is not likely to adversely affect steelhead. Although steelhead could become trapped in the existing basin, the characteristics of the basin and the avoidance measures proposed in the biological assessment (e.g., grading the basin to fully drain into the creek) minimize the likelihood of such trapping. However, our fishery biologist believes that incorporating special conditions into the action is necessary and appropriate to further decrease the likelihood that operation of the flood basin would adversely affect steelhead. Accordingly, the following special conditions should be incorporated in the proposed action:

- The County shall inspect the flood basin after discharge in Santa Rosa Creek has increased sufficiently to "spill" into the basin for the purpose of assessing presence of steelhead. This inspection shall be performed no later than 24 hours following the discovery that the creek is no longer spilling into the basin.
- The County shall notify NOAA Fisheries if a steelhead is observed in the basin. Such notification shall be made to NOAA Fisheries within a reasonable period of time, but not later than 24 hours after the County's discovery of a steelhead.

If you modify the proposed action as identified above and then determine that the modified proposed action is not likely to adversely affect steelhead, this letter will constitute a written concurrence that the proposed action is not likely to adversely affect steelhead pursuant to 50 CFR §402.13(b). Please provide written documentation to NOAA Fisheries of your decision to modify the proposed action.

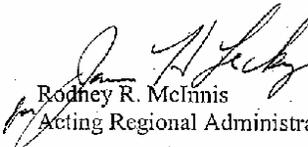


Appendix B
NOAA Fisheries Concurrence Letter

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Thank you for your willingness to support NOAA Fisheries' review of the proposed action. Please call Anthony Spina at (562) 980-4045 if you have a question concerning this letter or if you would like additional information.

Sincerely,


Rodney R. McInnis
Acting Regional Administrator

cc: Lorena Solórzano-Vincent, URS

Appendix C

Draft Revegetation and Tree Replacement Plan, Erosion Control, and Habitat Mitigation and Monitoring Plan

*Revegetation and
Tree Replacement Plan, Erosion Control,
and
Habitat Mitigation and Monitoring Plan*

Prepared For:

*San Luis Obispo County
Public Works
County Government Center
San Luis Obispo, CA 93408*

Draft - January 29, 2004

Cambria Flood Mitigation Project

Revegetation and Tree Replacement Plan, Erosion Control
and
Habitat Mitigation and Monitoring Plan

Prepared For:

San Luis Obispo County
Department of Public Works

Prepared By

Questa Engineering Corporation
1220 Brickyard Cove Road, Suite 206
P. O. Box 70356
Point Richmond, California 94807
(510) 236-6114

January 29, 2004

Appendix C

**Draft Revegetation and Tree Replacement Plan, Erosion Control,
and Habitat Mitigation and Monitoring Plan**

SUMMARY

This Revegetation and Tree Replacement Plan (TRP) and Habitat Mitigation and Monitoring Plan (HMMP) for the Cambria Flood Mitigation Project provides a comprehensive approach for the restoration, enhancement, and replacement of wildlife habitat temporarily lost as a result of proposed flood mitigation and channel management activities.

The *Cambria Flood Mitigation Project* includes the use of an existing floodplain basin area (bypass basin), construction of a new bridge on Highway 1 (overflow bypass structure), and creation of an earthen out flow channel (bypass outlet channel) and outlet to allow flood waters to flow under Highway 1 and back into Santa Rosa Creek, widening of Cambria Drive, and installation of a traffic signal. The *Cambria Flood Mitigation Project Final Environmental Impact Report* (September 14, 2001, Padre Associates) outlined potential impacts and mitigation measures for the project. Design revisions to incorporate recommended mitigation measures include elimination of a floodwall, elimination of Highway 1 roadway elevation modifications, and the preservation of 32 Monterey pines along Cambria Drive and Highway 1 that were previously proposed for removal. The current project includes removal of six mature Eucalyptus trees and several young willows at the bypass outlet, and preservation of two mature Sycamores along Santa Rosa Creek.

This Plan has two primary goals: 1) to help reduce the risk of injury, decline, and death of the two preserved trees due to construction; and 2) to mitigate the loss of value to wildlife, biological productivity, and biodiversity by replacing removed trees at a greater than 3:1 ratio.

To implement the first goal, the Plan contains Tree Preservation Guidelines that restrict all construction activities to areas outside the root zones of trees to be preserved. This zone is generally a circle that is 1.5 times the dripline radius measuring from the trunk. All grading and construction activities will be monitored by a qualified botanist/biologist to insure implementation of the tree preservation guidelines.

To meet the second goal, 55 replacement trees will be planted to compensate for the eight to 10 trees removed as part of project construction. This planting number exceeds a 3 to 1 ratio. We expect that some mortality will occur within the first year or two. The over planting is intended to meet the mitigation goal without having to resort to replanting. However, if mortality occurs such that the 3 to 1 goal is not attained then replacement planting will occur. Planting shall occur in the fall and winter and shall be spaced in a natural, random manner. Plant materials shall be seedlings with browse protection and weed control fabric or mulch provided.

Planting sites shall be maintained and monitored for three years or longer, depending on growth and survival. Mitigation shall be considered successful if, after a minimum of three years from installation, the replacement tree survival rate will be 30 trees or 54% of the initially planted trees. For the plant establishment period (at least three years after planting), annual status reports shall be submitted. These reports shall assess the condition of the trees, (observations on health and growth) make recommendations, and include information regarding the previous year's maintenance schedule, observations, and survival counts.

Appendix C

Draft Revegetation and Tree Replacement Plan, Erosion Control, and Habitat Mitigation and Monitoring Plan

The TRP/HMMP identifies existing habitat conditions, provides for replacement planting with native species, provides planting prescriptions, and includes a management and monitoring protocol.

On-going bypass outlet channel maintenance and management will continue for a minimum three year period. Maintenance and management would include: (a) removal of diseased trees; (b) removal of debris, and c) removal and management of weeds and exotics.

Other permits and reviews required for this project include:

- County of San Luis Obispo: Coastal Development Permit
- U.S. Army Corps of Engineers Section 404 Permit
- Regional Water Quality Control Board Section 401 Water Quality Certification
- Caltrans Encroachment Permit
- NMFS/USFWS: Section 7 Consultation
- State of California Streambed Alteration Permit

The existing bypass basin upstream of Highway 1 was expanded and graded as part of an unrelated adjacent completed construction project, and has been seeded with annual grasses. This area will be used for staging during project construction.

There are no seasonal wetlands that will be affected by project construction. Temporary disturbance to areas within the OHW of Santa Rosa Creek will occur at the bypass channel outlet. This area will be restored and densely planted with live willow and cottonwood stakes.

Construction of the bridge and bypass channel outlet will involve the excavation of an approximately 3M (10 ft.) deep by 28M(85ft.) wide swale. This material will be used to level and widen Cambria Drive. All work will be done during the dry season and timed to avoid impacts to nesting species or other wildlife species. Side slopes of the constructed bypass outlet channel will be protected with erosion control fabric and the site will be planted with genetically appropriate native species. The restoration and tree replacement is intended to replace trees removed as part of project construction with native species, protect against soil erosion and sedimentation, provide habitat diversity, improve the visual quality of the existing basin, reduce stream downcutting and improve the overall water quality of the creek and receiving waters.

Enhancement planting will occur within the bypass basin as well as along the bypass outlet channel creek corridor area where disturbance has occurred. The overall objective is to increase habitat value through enhancement efforts.

The project has been designed to temporarily contain flows during the 100-year flood event. In addition, the bypass basin and outlet channel will receive runoff and stormwater flows from Cambria Drive. As such, it is expected that the low flow sections of the bypass basin and the bypass outlet channel will develop wetlands functions and values with associated riparian habitat. The bypass outlet channel will be planted in zones with native riparian trees and shrubs along the creek. Exotic vegetation will also be removed and controlled. Mitigation for temporary impacts is provided by enhancing/restoring the upper Santa Rosa Creek banks.

Appendix C

**Draft Revegetation and Tree Replacement Plan, Erosion Control,
and Habitat Mitigation and Monitoring Plan**

The new planting sites will be provided with temporary irrigation and will be monitored and managed for a minimum of three years under the direction of a qualified environmental monitor to assure that new or restored/enhanced habitat is successfully managed. Contingency measures will be built into the plan to assure that the overall mitigation goals are met.

The by-pass basin, bypass outlet channel and outlet structure will require very little sediment removal activities. As designed, the bypass system will only be inundated with water in events exceeding the 25-year recurrence or greater. Given the short duration of the peak flows in the watershed, inundation events in the basin will not last longer than a few hours and are not likely to deposit sediment greater than a few inches thick during each event. Thus the need to remove sediment in the by-pass area should be very infrequent. When sediment is to be removed, it will need to be removed in and around the bridge structure only. The capacity function of the by-pass system is driven by water surface elevations in the Santa Rosa Creek channel and not by the cross sectional area of the by-pass. Therefore, sediment will be left in the basin if its removal disturbs existing or developing habitat values.

Erosion control within the bypass system will be accomplished in two phases. The first phase will be construction level procedures to include standard construction site best management practices such as the installation of silt fences, straw wattles, limiting disturbance areas, and hydroseeding all disturbed areas prior to October 15th. The second phase involves long-term erosion control. The site will be graded so that positive drainage is accomplished; no pooling or standing water will be permitted. Runoff collected in the by-pass area and adjacent storm drainage systems will be collected and conveyed to the Santa Rosa Creek in grass swales. Rock revetment will be used in areas where drainage must flow down a steep embankment or the potential for erosion is acute. Tree planting and seeding of all the areas will ensure a solid ground cover and some canopy cover of the site. The long term erosion potential in the by-pass is expected to be low.

This mitigation plan has been developed in conformance with the L.A. District, Army Corps of Engineer's *Habitat Mitigation and Monitoring Proposal Guidelines*, effective June 1, 1993.

PROJECT DESCRIPTION

The West Village in Cambria has been subjected to flooding in recent years, resulting in significant economic damage. Some of this is due to overtopping of Santa Rosa Creek during severe storm events. This flood mitigation project consists of:

- Creation of a floodwater bypass system to convey flows that overtop Santa Rosa Creek during the 100 year event, consisting of:

The use of an existing floodplain basin area(bypass basin)

Construction of a bridge at Highway1 over the new bypass channel

Construction of a new earthen out flow channel(bypass outlet channel) and outlet to allow flood waters to flow under Highway 1 and back into Santa Rosa Creek

- Storm drain improvements to collect runoff from the village
- Placement of excess fill as expanded road embankment and widening Cambria Drive

Draft Revegetation and Tree Replacement Plan, Erosion Control, and Habitat Mitigation and Monitoring Plan

- Installation of a new traffic signal

Six Eucalyptus trees and several young willows will be removed as part of project construction. Tree replacement and enhancement planting with native riparian species will occur as part of the project installation, in accordance with this *Revegetation and Tree Replacement Plan and Habitat Mitigation and Monitoring Plan*. The HMMP provides a comprehensive approach to enhancing and restoring to the existing annual grasslands community. Management and monitoring of the enhanced habitat will continue for three years to assure that wildlife enhancement and habitat diversity objectives are achieved.

Project Location

The project site is located at West Village in Cambria. The project site includes Cambria Drive north of Highway 1, the existing approximately 10 acre grassy floodplain basin field east of Highway 1 between Cambria Drive and Santa Rosa Creek, and a 33M (100-foot) long section west of Highway 1 to Santa Rosa Creek.

Summary of Overall Project

The existing floodplain portion of the project upstream of Highway 1 that forms the bypass basin was created with the construction of Highway 1 embankment, and was modified, i.e. deepened and graded, as part of an adjacent construction project, and has been seeded with annual grasses. This area will be used for staging during project construction. It will be planted with clusters of riparian and upland trees, and overseeded with a native species mix.

Construction of the bridge and bypass channel outlet will involve the excavation of an approximately 3M (10 ft.) deep by 28M (85ft.) wide swale. This material will be used to level and create the embankment for the widening of Cambria Drive. All work will be done during the dry season and timed to avoid impacts to nesting species or other wildlife species. Side slopes of the bypass outlet channel will be protected with erosion control fabric and the site will be planted with genetically appropriate native species. The restoration and tree replacement is intended to replace trees removed as part of project construction with native species, protect against soil erosion and sedimentation, provide habitat diversity, improve the visual quality of the existing basin, reduce downcutting and improve the overall water quality of the creek and receiving waters.

There are no seasonal wetlands that will be affected by project construction. Disturbance of Santa Rosa Creek will be limited to the bank area shown on the enclosed plans. Temporary fencing will be installed during construction to preclude disturbance to the creek and trees outside of the construction zone. Temporary impacts to the existing Santa Rosa Creek channel will be offset by enhancement planting to improve riparian habitat, including planting upper slopes and bank tops with native riparian plants.

Work will commence as soon as appropriate permits are obtained, and will be completed during appropriate seasons to reduce wildlife impacts and disturbance to nesting species.

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**Draft Revegetation and Tree Replacement Plan, Erosion Control,
and Habitat Mitigation and Monitoring Plan**

Responsible Parties

This plan has been developed for the San Luis Obispo County Flood Control and Water Conservation District by Mr. Sydney Temple, P.E., Project Manager and Hydrologist, Margaret Henderson, Landscape Architect # 1689 and Jeffrey Peters, CPESC #185, Principal, Questa Engineering Corporation (510) 236-6114.

Jurisdictional Areas to be filled

No seasonal wetlands are proposed to be filled as part of this project. A new bypass channel is proposed that will develop wetland functions and values as it receives and filters urban runoff and seasonal stormwater flows. Temporary disturbance to areas within of Santa Rosa Creek may occur where the bypass outlet channel outlets into the creek. These areas will be restored and replanted as part of project implementation. Please see details on the enclosed plans.

Special Aquatic Sites and Sensitive Wetland Species

Santa Rosa Creek and adjacent riparian habitat are considered critical habitat for south central coast steelhead. Other sensitive species potentially occurring in the project area include California red-legged frog, two striped garter snake, western pond turtle, and tidewater goby. Little instream construction is anticipated, however, the Santa Rosa Creek bank at the bypass channel outlet will be armored to prevent erosion. Two mature Sycamores in this area will be protected, and this area will be densely planted with willow, cottonwood and alder cuttings to protect the existing creek bank ~~this area~~ from headcutting and help attenuate flood flows.

In addition, to avoid disturbance to sensitive species, Mitigation Measure BIO-2 as stated in the project EIR will be incorporated into the project, including:

- Conduct pre-construction surveys to determine if special-status species are inhabiting the site;
- Time construction to coincide with low occurrence periods in the project reach, such as late summer and early fall when flows are minimal and instream pools are shallow;
- Erect instream and upland exclusion dams/fences to minimize fish, amphibian, and reptile entry to the construction zone. The exclusion dams shall be constructed of geotextile silt fencing material attached to steel fence posts. The dams will be erected approximately 50 feet up and downstream from the construction zone and shall span the entire width of the channel to the top of the bank. Hay bales will be used to secure the bottom portion of the fence. Steel rebar will be driven through the hay bales to secure them against the streambed. The hay bales and geotextile material will impound flows but allow water to slowly filter water through. The silt fencing will also be erected on the top of bank and connected to the silt dams to provide a continuous barrier;
- Provide on-site monitoring by a qualified biologist during construction to physically relocate/remove any special-status species entering the construction zone.

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GOAL OF ENHANCEMENT AND MITIGATION

The overall objectives of mitigation, as reflected in this plan are: (1) to avoid disturbance to sensitive wetland and endangered species habitat along Santa Rosa Creek; (2) to enhance riparian/upland habitat and bypass system habitat that is created by this project; (3) reduce erosion potential that may contribute to downstream sedimentation; and (4) provide for ongoing maintenance and management of the enhancement area.

This plan proposes to restore and enhance approximately 0.85 acres of grassland and riparian habitat. Mitigation will consist of: (1) protecting existing sensitive habitat; (2) creating new stream bottom wetlands habitat; (3) enhancing and restoring existing annual grasslands with a variety of native riparian species; and (4) incorporation of project protocols (as called for in the EIR) to protect existing sensitive wildlife species. The overall objective is to ensure that no net loss of aquatic area or decrease in functional habitat value will occur.

Tree Preservation Guidelines

The most vulnerable parts of a tree are the root crown (the base of the trunk) and the root zone. Roots function to absorb water and minerals, exchange gases, stabilize soil, and support and anchor the tree. Nearly all of a tree's roots are found in the top meter of soil. This soil holds most of the roots that absorb water and oxygen. Beneficial fungi called "mycorrhizae" are associated with the roots of most trees, especially oaks, and function to assist in the absorption of water and minerals (Sanborn, 1989). For the two mature sycamores to be preserved, the following protocols shall be followed, where possible:

- Construction shall be avoided within the root protection zone, 1.5 times the dripline radius measuring from the trunk.
- Prior to mobilization of construction equipment, temporary protective fencing shall be installed around the dripline perimeter of trees to be preserved near construction zones.
- Trees shall not be used as posts. Doing so may cause injury to the trunk that can inhibit the passage of water and nutrients.
- Changes in grade shall be avoided within the protected perimeter.
- Heavy equipment, vehicles, and/or construction materials shall not be parked or stored beneath trees.
- Trees with root damage shall be pruned and watered under the direction of a professional forester, landscape architect, or certified arborist.
- Trees shall be carefully pruned such that cuts are clean and discriminate. Cuts shall not be painted nor branch stubs left on trees. Only sharp, sanitized tools (cleaned with bleach) will be used for pruning. An equal portion of top growth shall be removed to compensate for the loss of roots.

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Tree Replacement

Six mature Eucalyptus trees, and several young willows will be removed as part of project implementation, and two mature sycamores will be preserved and protected near the bypass channel outlet. The Tree Replacement Plan calls for planting 55 native seedling trees, planting willow and cottonwood stakes, and hydroseeding with a native plant mix to improve the biodiversity of the site and mitigate for the loss of the six Eucalyptus and willows.

Types of Habitat to be Created

New habitat will be created or enhanced of the following types: (1) Bypass outlet channel-bypass low-flow channel; (2) Bypass outlet channel banks; (3) Bypass basin enhancement, and (4) Monterey pine enhancement. These habitat types are described below:

- **Bypass Outlet Channel Low-Flow Channel.** This habitat type includes the low flow channel within the outlet channel. The area adjacent to Santa Rosa Creek has two mature sycamores that will be preserved. The first 10-12 meters of the outlet channel bottom immediately upstream of the confluence with the creek will be densely planted with cuttings of willows and cottonwoods to discourage headcutting and help attenuate backwater flows. The remainder of the low flow channel will be overseeded with a mix of native grass and shrub species. It is anticipated that a perennial low-flow channel may develop within the bypass as a result of urban stormwater runoff that is redirected to this area. Otherwise, this area is expected to remain dry except during severe seasonal flood events.
- **Bypass Outlet Channel Banks Riparian Enhancement.** This habitat type includes the banks of the newly created bypass outlet channel. It will be planted with a mix of native riparian shrubs and grasses, with overseeding of disturbed areas. The lower channel slopes will be planted with willow and cottonwood cuttings.
- **Bypass Basin Enhancement.** The existing basin will convey temporary overland flows from Santa Rosa Creek during the 50-100-year events. Planting of clusters of riparian and upland species, selected willow planting, and overseeding with a native shrub and grass seed mix is proposed for habitat enhancement and selective screening from scenic Highway 1.
- **Monterey Pine Enhancement.** The project proposes planting a grouping of Monterey Pine trees along the east side of Cambria Drive, adjacent to the widened section. This will balance the existing mature Monterey pines on the west side of the street and provide an aesthetic backdrop for entry into the Cambria downtown area.

Existing Wetlands to be Protected

A high level of effort will be made to protect portions of Santa Rosa creek where stabilization work is not needed. These areas presently support sensitive wildlife species. These areas will be fenced (temporary construction fencing) during implementation and protocols followed, as directed in the EIR.

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Functions and Values of Habitat to be Created

The habitat value of the project area will be increased by preserving and protecting existing sensitive habitat, as well as creating new stable, enhanced terrestrial habitat. This enhanced habitat will support a diversity of native species, as well as provide for improved water supply by reducing potential erosion and sedimentation along the creek, and filtering and attenuating stormwater and urban runoff. This will help assure the establishment of a diverse habitat.

Amount and Type of Compensation

It is not anticipated that any existing wetlands or waters will be permanently affected by project implementation. Any incidental disturbance to the upper slopes of Santa Rosa Creek where the bypass channel outlet is created will be restored and protected. Temporary disturbance is estimated to be well less than 0.03 acres of wetlands below OHW. It is anticipated that the project will result in a net increase in wetland habitat, as the urban/stormwater runoff forms perennial wetland habitat, and wetland species become established.

Time Lapse

Habitat enhancement and restoration/establishment is proposed to commence as soon as earthwork and bridge installation is completed. It is anticipated that successful habitat creation and establishment can occur within three to five years. The comprehensive planting program, regular monitoring and maintenance, and improved hydrologic conditions will compliment enhancement activities. Plant materials proposed include willows and alders that are fast growing, and all species are present within or near the project area and suitable for enhancement planting.

Sediment Management

The by-pass basin, bypass outlet channel and outlet structure have been designed to be a passive flood relief system. The basic concept of the plan is to restore a portion of the historic Santa Rosa Creek flood plain by reconnecting portions of the flood plain east of Highway 1 with the Santa Rosa Creek channel. This portion of the flood plain only is inundated during large events in excess of the 25-year event. As such the by-pass will function as the flood plain for the creek. Sedimentation in the by-pass is expected to be of a similar dynamic as the current creek flood plain. As such, the by-pass basin, outlet channel and outlet structure will require very little sediment removal activities.

As designed the bypass system will only be inundated with water in events exceeding the 25-year recurrence or greater. Given the quick response of the peak flows in the watershed, inundation events in the basin will not last longer than a few hours and are not likely to deposit sediment greater than a few inches thick during each event. Thus the need to remove sediment in the by-pass area should be very infrequent. When sediment is to be removed, it will need to be removed in and around the bridge structure only. The capacity function of the by-pass system is driven by water surface elevations in the Santa Rosa Creek channel and not by the

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cross sectional area of the by-pass basin or outlet channel. Therefore, sediment will be left in the basin if removal disturbs existing or developing habitat values.

When sediment is removed from appropriate areas of the by pass this sediment will be hauled away to suitable county approved site and will not be permitted to reenter the creek or impact the riparian corridor in any way. The long term maintenance issues of the by-pass should be very negligible and of low impact to the values and function of the creek corridor as well as the revegetation of the area.

Erosion Control

Erosion control within the bypass will be accomplished in two phases. The first phase will be construction level procedures to include standard construction site best management practices such as the installation of silt fences, straw wattles, limiting disturbance areas, and hydroseeding all disturbed areas prior to November 1st. These features will be detailed on the construction drawings and approved along with the overall grading plan for the project site.

The second phase of erosion control involves long-term protection of the by-pass area. In the long term the site is not subject to large amounts of erosional potential. The bottom of the by-pass area is generally flat and should sustain a good cover of annual grasses and perennial shrubs. The upslope areas of the bypass basin draining to the by-pass outlet channel will remain undisturbed and show no existing signs of significant erosion potential. Storm water runoff will be collected from a series storm drain lines on the mid state bank property and areas to the east along main street. These pipes will terminate in the by-pass basin. An energy dissipater will reduce the velocity of the flow leaving the pipe. Storm drainage will then flow through a grassy swale to the west towards Santa Rosa Creek. Flow will be discharged into the creek and rock revetment will used to reduce any possible bank slope erosion caused by storm drain flows. The site will be graded so that positive drainage is accomplished; no pooling or standing water will be permitted. Runoff collected in the by-pass area and adjacent storm drainage systems will be collected and conveyed to the Santa Rosa Creek in grass swales. Rock revetment will used in areas where drainage must flow down a steep embankment or where the potential for erosion is acute. Tree planting and seeding of all the areas will ensure a solid ground cover and some canopy cover of the site. The long-term erosion potential in the by-pass is expected to be low.

FINAL SUCCESS CRITERIA

The final success criteria for implementation of this plan are outlined below. These criteria will be considered fulfilled if the predominance, dominant species diversity, and cover or frequency standards have been met for two consecutive years following cessation of all human support (irrigation, maintenance, etc.).

Target Functions and Values - Vegetation and Wildlife

Enhancement tree planting and overseeding with genetically appropriate species is a key to establishing diverse wildlife habitat. Preservation of the existing creek bank where no work is proposed is important, as well as repairing the area (at the bypass channel outlet) that is

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temporarily affected by project implementation. Enhancement planting with genetically appropriate native plants (endemic to central California coastal watersheds) is the primary mitigation measure proposed.

The following vegetative success criteria will be used in the evaluation:

- At the end of three years, at least 80 percent of the planted container stock riparian/upland trees and shrubs within and adjacent to project sites and/or at the off-site mitigation area will have survived and either: (1) grown at least one meter; or (2) produced 30-percent canopy cover over the specified planting area. Annual survival and apical and/or lateral leader growth will be sufficient to meet these criteria if continued for the remainder of the three-year period.

Target Jurisdictional Area to be Created

As an overall goal, there will be no net less of wetlands or riparian habitat as a result of project implantation. Encroachment into the existing creek side slope at the bypass channel outlet, and placement of biotechnical structures will be needed to stabilize the creek bank toe. This area will be restored, and this and upstream areas will be replanted with willows and alders to improve habitat conditions. It is the goal of this plan to preserve and protect all other portions of the creek and to plant riparian and upland tree species to increase habitat diversity.

Location and Size of Enhancement Mitigation Area

The enhancement area includes:

- 1 acre bypass outlet channel
- 0.25 acre bypass outlet channel side slopes
- 10 acre floodplain bypass grassland basin enhancement
- 0.25 acre Monterey pine enhancement

Ownership Status

The project area will be managed and maintained by the SLO County Flood Control and Water Conservation District under a permanent flood control easement.

Existing Functions and Values of Enhancement Mitigation Area

The existing floodplain bypass basin area north of Highway 1 was graded as part of an adjacent development project and seeded with an annual grass mix. As a recently disturbed area, it has minimal habitat functions and values.

Present and Proposed Uses of Enhancement Mitigation Area

The site is presently used as undeveloped grassland. When complete, the area will support a variety of native riparian and upland plant species, and will function as a periodic ponding area

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to receive flows from Santa Rosa Creek during the 100-year event. It is expected that the area will generally function as diverse upland habitat, with a perennial low-flow channel that may develop as a result of urban and stormwater runoff that is filtered through the bypass outlet channel.

Jurisdictional Delineation

There are no seasonal wetlands on the existing project site. At the bypass channel outlet, there may be some temporary disturbance to the banks of Santa Rosa Creek within OHW.

Present and Proposed Uses of All Adjacent Areas

The site is south and west of the developed West Village area of Cambria, and is east and north of Santa Rosa Creek and undeveloped grasslands.

Zoning and Land Use

The project site and surrounding areas are zoned for open space and recreation. North and west of the site is zoned for public facilities, commercial and office/retail use.

IMPLEMENTATION PLAN

Rationale for Expecting Implementation Success

Plant species selected for habitat enhancement are endemic to the project area and the appropriate climate and planting regime will be utilized to ensure successful plant establishment. All plants will be installed during the cool season to minimize stress, and DRiWATER or other supplemental irrigation will be provided as needed during the establishment period. Drought-tolerant natives have been selected for the hydroseed mix.

Responsible Parties

Implementation of this plan will be the responsibility of SLO Flood Control and Water Conservation District County. All implementation work will be performed under the direction of a qualified restoration specialist. Monitoring during the clearing and grubbing phase will be conducted by the project biologist to ensure compliance with special-status species protocols, including red-legged frog habitat protection measures.

Grading

Grading activities will consist of excavating, import, stockpiling existing soil/sediment that is removed during construction and subsequent emplacement within the project site. Salvaged topsoil will be replaced on the bank slopes and bypass outlet to create the appropriate medium for plant establishment. The staging area for project equipment will be the existing bypass basin area north of Highway 1.

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Planting Plan

Planting will consist of 1) planting live willow and cottonwood stakes at the bypass channel outlet and along the lower bypass channel slopes; 2) hydroseeding all disturbed areas, the bypass outlet channel bottom and bypass basin with a mix of genetically appropriate native herbaceous and woody plants suited for the soil conditions and water regime within the enhancement area; and 3) tree enhancement planting along the side slopes and within the bypass basin area, as well as Monterey pine enhancement planting on the east side of Cambria Drive.

Specific plants that will be utilized and the typical spacing are shown in the following table.

**Revegetation and Tree Replacement Plan
Habitat Mitigation and Monitoring Plan
Plant Palette
Bypass Channel Outlet and Lower Slope**

Common name	Scientific Name	Size	Spacing	Quantity
Arroyo willow	<i>Salix lasiolepis</i>	4-7CM x 1M cuttings	1M	200
Shining willow	<i>Salix lucida lasiandra</i>	4-7CM x 1M cuttings	1M	200
Black cottonwood	<i>Populus balsamifera trichocarpa</i>	4-7CM x 1M cuttings	1M	200
Total				600

Bypass Channel/Basin Hydroseeding

SEED SPECIES	FUNCTION	POUNDS PER ACRE
California brome <i>Bromus carinatus</i>	perennial	12 lbs. PLS
California poppy <i>Eschscholzia californica</i>	annual	1 lb. PLS
California Rose <i>Rosa californica</i>	shrub	1 lb. PLS
Coyote Brush <i>Baccharis pilularis</i>	shrub	1 lb. PLS
Creeping wild-rye <i>Elymus triticoides</i>	perennial	2 lbs. PLS
Lupine <i>Lupinus succulentus</i>	Nitrogen-fixing	2 lbs. PLS ¹
Meadow barley <i>Hordeum brachyantherum</i>	perennial	10 lbs. PLS
Monkey flower <i>Mimulus auranticus</i>	shrub	1 lb. PLS
Mugwort <i>Artemisia douglasiana</i>	shrub	1 lb. PLS
Purple needlegrass <i>Nassella pulchra</i>	perennial	2 lbs. PLS
Sky lupine ² <i>Lupinus bicolor</i>	perennial	1 lb. PLS
Zorro fescue <i>Vulpia myuros</i>	Cover crop	10 lbs. PLS
Mulch	Erosion control	2000 lbs.
Fertilizer	Plant establishment	200 lbs.
Tackifier ³	Erosion control	100 lbs.
<i>DRiWATER mix</i>	<i>Supplemental Water</i>	<i>Per manufacturer's recommendations</i>

1 PLS = Pure Live Seed

2 Seed will be treated with nitrogen-fixing bacteria inoculant by the seed supplier on the seed supplier's recommendation.

3 The tackifier rate is approximate, and should be applied at the rate and in the manner specified by the manufacturer.

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Tree Replacement Planting

Common name	Scientific Name	Size	Spacing	Quantity
California bay	<i>Umbellularia californica</i>	deepot	4-6M	8
California sycamore	<i>Platanus racemosa</i>	deepot	4-6M	11
Coast live oak	<i>Quercus agrifolia</i>	deepot	4-6M	16
Monterey pine	<i>Pinus radiata</i>	deepot	4-6M	11
White alder	<i>Alnus rhombifolia</i>	deepot	4-6M	9
Total				55

Planting Techniques

Native woody plant materials will be collected from on-site sources (principally willows and cottonwoods), if practical, or obtained from local commercial sources, if grown from sources within central California coastal areas. All of the native plant species mentioned above are present along various sections of Santa Rosa Creek, but four months of lead time would generally be necessary to propagate riparian species for purposes of this plan. Seed of annual species and perennials best suited to propagation by seed will be collected either from plants or by scraping topsoil in areas to be filled. Seeds or propagules for other perennial species will be purchased from local commercial sources, or custom grown.

Timing

Planting shall occur in the fall and winter after soil and air temperatures have dropped and the rainy season has begun. The optimal time is typically from November until the end of December. It is during this time that plants go dormant and put energy into root development.

Spacing

Replacement trees shall be installed in random clusters to reflect the natural spacing of the surrounding vegetation. Trees within each cluster shall be spaced no closer than 3M on center.

Container Planting

Following is a general technique for container planting:

- Clear a 1M x 1M planting area free of vegetation or mulch in preparation for plant installation.
- Dig or auger planting hole at least one and a half times the width of the root ball. Do not auger deeper than root ball unless soil is severely compacted. Roughen sides of hole to allow root penetration.
- If tree does not slide freely from container, cut container away from root ball. Do not pull on stem, which may damage or break roots at root crown.
- If container is root-bound, cut away or untangle coiled roots and place tree in hole so that the root crown is at or just above the soil surface. Prune top of plant to compensate for lost roots.

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- Backfill 75% of hole with native soil. Add slow-release fertilizer and tamp gently. If using collar and screen browse protectors, install as per planting detail. Complete backfill to grade.
- Install DRiWATER gel cells, four per plant, per manufacturer’s instructions.
- Construct shallow watering basin around root zone to impound irrigation and runoff water.
- Install 1M x 1M weed control fabric mulch around plant. Pre-cut slits to slide fabric over plant.
- Anchor fabric flush with grade using 6 – 8 spikes and washers or 6-in. heavy gauge wire staples.
- Deeply water-in trees as soon as possible to encourage root penetration.

Willow and Cottonwood Cuttings

Live stakes will be 4-7CM in diameter, and 1 M in length. Paint top in tree sealant, axe score and dip bottom end in rooting compound. Pre-soak cuttings a minimum of 48 hours prior to use. Plant within 10 hours of removal from water. Alternately use deepots or leachtubes.

Erosion Control

All disturbed areas within the new bypass outlet channel banks will be hydroseeded with the planting cover crop listed above, consisting of native grasses and forbs to prevent soil erosion and provide habitat enhancement. An erosion blanket will also be provided for 2:1 bank slopes.

Erosion control seeding activities will take place in the fall so that sown seeds can benefit from winter rains.

Planting will normally take place in the late fall or early winter after soil and air temperatures have cooled, and winter rains have begun. Dormant cuttings can be installed throughout the winter and early spring.

Schedule

The enhancement work will be done according to the following schedule:

Period	Activity
Spring 2004	(1) Obtain Corps approval of working drawings, Section 7 Consultation. (2) Begin ordering plants for future planting and/or contact nurseries for availability. (3) Fence existing waterways to be preserved and protected.
Summer/Fall during construction	Install temporary erosion control and stabilization components associated with site grading.
Fall/Winter during construction	Plant and hydroseed all disturbed areas.
Spring following construction	Check and replace plants as needed. Perform maintenance activities. Perform weed control and eradication of exotics;

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Period	Activity
	replace DRiWATER and/or provide supplemental irrigation.
Following three years	Maintain and monitor according to schedule.

Irrigation Plan

All plants will be irrigated directly during and after planting. In addition, DRiWATER gel pacs will be installed or a temporary irrigation system will be installed to provide water to the riparian trees for the first two to three years.

DRiWATER will be provided during dry winters to supplement any deficiency in rainfall that may occur during the first two years. Each tree shall receive four DRiWATER 3” Tube & Gel Pacs at initial installation. These pacs shall be replenished at least twice a year to provide supplemental irrigation. In addition, DRiWATER mix shall be included in the hydroseed slurry to aid in seedling establishment.

Supplemental irrigation (via water truck or water line extension from adjacent County property) will be applied during the first two summers after planting if needed to supplement DRiWATER, and ensure the successful establishment of the plants. The need for supplemental irrigation during subsequent years will be determined by the project restoration specialist following the initial irrigation period, or will be discontinued when the trees have reached at least half the heights specified in the monitoring section.

As-Built Conditions

Within six weeks of completion of site preparation and planting, as-built drawings will be submitted to responsible agencies, describing the installed condition of the project.

The as-built report will include maps showing the location of installed plantings, as well as fencing and other improvements which delineate areas to be protected from disturbance.

MAINTENANCE DURING MONITORING PERIOD

Maintenance Activities

Maintenance will consist primarily of basic care-taking during the first three years after construction at each site. Any repairs necessary to fences and browse protection, irrigation and erosion control, and other facilities will be performed promptly if the need occurs.

Watering and weeding of tree planting sites will begin, as needed, in the spring following planting. Replacement of DRiWATER irrigation gel packs in the spring and early summer of the establishment period will be done to increase growth rates compared to no watering or minimal hand watering. The increased growth rate allows plants to outgrow impacts of competing weeds as well as destructive insects and herbivores. Individual planting spots shall be checked on a weekly basis and hand weeded. Watering should not be necessary between October 15 and April 15 in a normal rainfall year.

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Some weeding or mowing may be necessary where weeds are shading replacement trees. Additional mowing may be needed to reduce fire hazard. Mowing shall occur in the spring to cut annual grasses before seed set. Summer mowing shall be limited to allow perennial grasses to set seed. Individual tree maintenance (watering and weeding) shall be discontinued no earlier than the end of Year Three, providing the trees have become established as determined by a revegetation specialist. "Establishment" means that the plant has been in the ground for three years and is capable of healthy growth without supplemental watering and weeding. This is generally indicated by the plant having at least doubled in height and width by the end of Year Three. At the end of the establishment period, weed mats, protectors, and gel packs may be removed.

If any noxious weeds are detected in mitigation areas, they will be eradicated to the extent possible. For this project, noxious weeds will be defined as giant reed (*Arundo donax*), tamarisk (*Tamarix* sp.), and perennial pepperweed (*Lepidium latifolium*). Eradication techniques may include hand removal or hand application of an herbicide labeled for such use. Broadcast spraying and mechanized plant removal may be done selectively if the infestation involves more than 50 percent of an area, and is outside Santa Rosa Creek.

Erosion Control during the maintenance period will follow the procedures outlined above. It is expected that little long-term maintenance will be needed during the monitoring period. Construction related erosion control measures will be monitored during the first winter after construction. After the first year erosion issues will be addressed on as needed basis. By the end of the monitoring period little or no erosion control maintenance is expected.

Red-Legged Frog Protection During Maintenance

- Maintain a worker education program that includes an explanation of California Red-legged frog natural history and identification, avoidance measures, and federal laws that protect the frog.
- Avoid removing overhanging vegetation along banks.
- Conduct maintenance during daylight hours and during dry periods when California Red-legged frogs are less likely to be present in these ponds.
- Stop work if a California Red-legged frog is located in the bypass or basin.

Responsible Parties

SLO County Flood Control and Water Conservation District will perform maintenance tasks under the supervision of the project restoration specialist.

Schedule

Maintenance activities will occur on a weekly basis for the first quarter; and on a monthly basis thereafter for the first year. Particular attention will be paid to inspection and maintenance following large storm events. Maintenance during the second and third years will be monthly during the growing season and quarterly during the dormant season.

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MONITORING PLAN

The purpose of monitoring is to: (1) document that the desired enhancement trees have become established; and (2) identify shortcomings so that appropriate corrective actions can be taken. SLO County will retain the services of a qualified restoration specialist to perform the monitoring described below. Monitoring of any revegetation project is necessary to insure the success of the installation. The first two years are the most critical when plants are particularly susceptible to factors including under-watering or over-watering, weeds, flood, predators, and fire. Proper timing of mowing, for example, is essential to reduce weed seed banks while protecting perennial grasses and wildlife. A periodic spot check by a qualified revegetation specialist will provide the opportunity to correct problems before they become catastrophic and will insure that the design and intent of the plan is being satisfied.

Maintenance staff responsible for watering and weeding shall keep records of weeding and irrigation performed as well as conditions contributing to success or decline of the plantings. A revegetation specialist shall visit the site monthly or as needed during spring and summer maintenance.

In October of each monitoring year, the revegetation specialist shall perform a survival survey. If replacement tree survival drops below 85% in the first two years, supplemental planting shall be installed to bring the numbers up to 100%.

Performance Criteria

At the end of three years, at least 80 percent of the planted container riparian trees will have survived and either: (1) grown at least one meter; or (2) produced 30 percent canopy cover over the specified planting area. Annual survival and apical and/or lateral leader growth will be sufficient to meet this standard if continued for the remainder of the three-year period.

Monitoring Methods

- **Installation Monitoring.** As construction occurs, the biological monitor will coordinate site management as necessary to ensure that construction is being done in accordance with the specifications in this plan, working drawings, any permit conditions issued by the Corps, and special status species protocols. A qualified biologist will also monitor work for compliance with the conditions of the U.S. Fish and Wildlife Service and National Marine Fisheries Service and provide guidance and consultation on habitat protection measures for red-legged frog and other special status species. The restoration specialist will determine if field adjustments to the plans are necessary. If field adjustments are made, they will be documented in as-built plans or by other appropriate means.
- **Performance Monitoring.** Performance monitoring will begin when construction is completed and will continue for three years. If significant corrective actions are needed, the monitoring period for the site will be extended such that monitoring continues three years past the last corrective action. The Corps will be notified if significant corrective actions are needed, and corrective actions will be undertaken promptly by the applicant if the need is discovered.

Appendix C

Draft Revegetation and Tree Replacement Plan, Erosion Control, and Habitat Mitigation and Monitoring Plan

Monitoring may be discontinued before the end of three years if the performance standards below have been met and the Corps approves discontinuation.

Vegetative monitoring will occur at least once annually, at a time when the maximum number of herbaceous species can be identified. Predominant vegetation, dominant species diversity, cover or frequency, and riparian tree survival and leader growth will be documented. A photo point for panoramic photos will be established and the same point re-occupied and the sites re-photographed annually.

Corrective actions may include re-seeding or replanting, weed control, fertilization, continued irrigation, irrigation system supplement, and repair of fences or browse protection, and similar actions.

These performance standards can be considered satisfied if: (1) the predominance, dominant species diversity, and cover or frequency standards have been met for two consecutive years; and (2) survival and growth of the planted trees meet the three-year standard.

Annual Reports

Annual reports will be submitted beginning the first year after construction, by May 1 following the prior year's maintenance and monitoring. In addition to evaluating the factors discussed below, these reports will include photographs taken from permanent photo points that provide north, south, east, and west area views of each site, as well as photos of vegetation sampling plots. These reports will assess the condition of the replacement trees and will make any recommendations for adjustments necessary to help the plants survive. In addition, the status reports shall include information regarding the previous year's maintenance schedule, observations, and survival counts.

Additional reports will be produced if a need for corrective action is identified. These reports will describe the performance problem and the corrective action recommended by the monitor. If appropriate (e.g., a one-time repair), the reports will describe the corrective action taken by the applicants otherwise (e.g., in the case of an on-going modification or repair best undertaken at a different season) the report will present a schedule for taking corrective action. These reports will be submitted to the Corps within 90 days of the date when the need for corrective action was identified.

Copies of the report will be provided to the Regional Water Quality Control Board, California Department of Fish and Game, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service.

Schedule

Monitoring for compliance with performance criteria will commence following completion of planting and initial assessment of the project. The first annual report will be submitted within one year of completion of planting at the project site. An as-built report will be filed within eight weeks of project completion.

Appendix C

**Draft Revegetation and Tree Replacement Plan, Erosion Control,
and Habitat Mitigation and Monitoring Plan**

COMPLETION OF MITIGATION

Notification of Completion

The Corps will be notified following completion of the final monitoring period, provided that the final success criteria have been met. As part of this final notification of mitigation completion, SLO County will provide the Corps with a jurisdictional delineation which outlines the restored and enhanced riparian areas.

Corps Confirmation

Site visits with Corps representatives will be scheduled annually to verify the results of the mitigation/enhancement efforts. Periodic visits with the U.S. Fish and Wildlife Service to observe the red-legged frog habitat protection measures are also anticipated.

CONTINGENCY MEASURES

Initiating Procedures

As stated previously in the report, if annual performance criteria are not met, or if the final success criteria are not met, then an analysis of the failure will be provided along with recommended remedial action. If appropriate, additional work will be performed to correct the deficiency. The monitoring period will be extended for the appropriate length of time following any remedial action.

Alternative Locations for Contingency Mitigation

Should enhancement planting establishment fail to meet designated performance criteria, an intensive planting program and/or contingency enhancement site will be developed as an alternate.

Funding Mechanism

Planning, implementation and monitoring of contingency procedures will be funded by San Luis Obispo County Flood Control and Water Conservation District, Zone 18. This Zone has been approved and is funded through assessments to benefiting property owners.

Responsible Parties

Implementation and monitoring contingency procedures is the responsibility of San Luis Obispo County Flood Control and Water Conservation District and will be completed under the direction of a qualified restoration specialist.

Appendix D
Concurrence Letter from State Historic Preservation Officer

Concurrence Letter from State Historic Preservation Officer

STATE OF CALIFORNIA – THE RESOURCES AGENCY

ARNOLD SCHWARTZENEGGER, Governor

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATIONP.O. BOX 942898
SACRAMENTO, CA 94296-0001
(916) 653-8624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

January 27, 2004

In reply refer to:
FEMA031203AAlessandro Amaglio, AIA
Regional Environmental Officer
Federal Emergency Management Agency
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607

RE: FEMA-1046-DR-CA, HMGP #1046-0003, [SECTION 106 CONSULTATION OF CITY OF CAMBRIA FLOOD CONTROL PROJECT, SAN LUIS OBISPO COUNTY]

Dear Mr. Amaglio:

Thank you for requesting my comments on the Federal Emergency Management Agency's (FEMA) undertaking referenced above. This request is made in accordance with 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act. You are requesting my concurrence that efforts to identify historic properties within the Area of Potential Effects (APE) for this project are complete and adequate and no historic properties will be affected by the undertaking. You also acknowledge that if any post-review discoveries are made, your agency will address those discoveries in accordance Stipulation VIII. of the Programmatic Agreement (PA) for this disaster (FEMA-1046-DR-CA).

The proposed undertaking consists of the constructing a new concrete bridge structure that includes culverts under Highway 1, utilization of an existing overflow detention basin, constructing an earthen berm which will serve as a floodwall, and permanent closure of a culvert under Cambria Drive. I understand that the APE for this undertaking includes all areas of proposed construction activity and ancillary activities.

Based on the information provided in your letter I concur that the undertaking's APE has been adequately delineated; that historic property identification efforts are satisfactory; and that efforts to involve interested parties, including Native Americans, are likewise satisfactory. I also concur with your finding that the subject undertaking would not affect historic properties. Accordingly, I concur that your efforts to address the requirements of 36 CFR Part 800 for this undertaking are complete and satisfactory.

In the event that historic properties may be adversely affected, FEMA will continue to consult with me regarding eligibility and develop measures to resolve adverse effects under provisions of the Programmatic Agreement (PA) for this disaster (FEMA-1044-DR-CA). I agree that FEMA's inclusion of this option under 36 CFR 800.13 satisfies prospective issues related to unanticipated discoveries for this undertaking.

If you have any questions or need clarification of any of my comments, please contact Blossom Hamusek, Staff Archaeologist, at (916) 653-4614 or at bhamu@ohp.parks.ca.gov.

Sincerely,

Dr. Knox Mellon
State Historic Preservation Officer