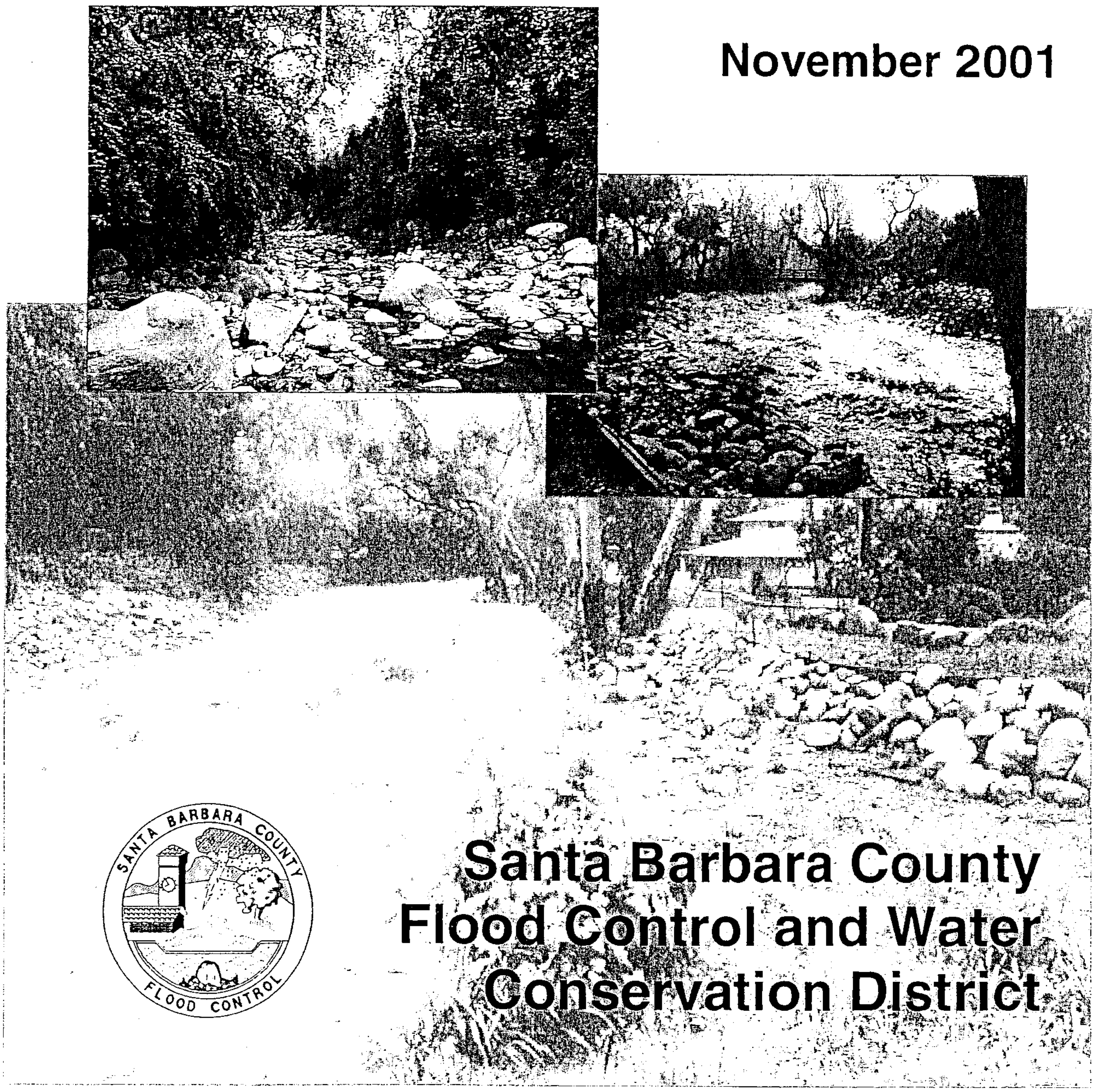
FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT

UPDATED ROUTINE MAINTENANCE PROGRAM

November 2001



Santa Barbara County
Flood Control and Water
Conservation District

County of Santa Barbara
Planning and Development

John Patton, Director

TRANSMITTAL OF PROPOSED FINAL ENVIRONMENTAL IMPACT REPORT SANTA BARBARA COUNTY FLOOD CONTROL DISTRICT UPDATED ROUTINE MAINTENANCE PROGRAM

01-EIR-01 (State Clearinghouse #2001031043)
November 2001

Pursuant to the California Environmental Quality Act (CEQA), a proposed Final EIR has been prepared for the Santa Barbara County Flood Control District Updated Routine Maintenance Program. This proposed Final EIR discusses the potential environmental impacts of the proposed project and suggests measures which could eliminate or reduce these impacts. As a result of this project, Class I and II significant effects on the environment are anticipated in the following categories: *Water Quality; Wetlands, Riparian Habitat, and Rare Plants; Fish, Aquatic Species, and Wildlife; Hydrology; Air Quality; Noise; Cultural Resources; Recreation; and Visual Resources.* This EIR is intended to serve as an informational document that informs the public, decision-makers and other interested agencies of the potential environmental consequences of the proposed project. The EIR will be reviewed by the decision-makers in their consideration of the proposed project. While CEQA requires that major consideration be given to avoiding environmental damage, the County of Santa Barbara and other responsible public agencies are obligated to balance the environmental effects of the project with other public objectives, including economic and social factors, in determining whether and in what manner, the project should be approved.

The Draft EIR for the Updated Routine Maintenance Program was released for public review on March 7, 2001. The public review period closed on April 27, 2001. Environmental Hearings were held on April 11 and 12, 2001. All comments received on the Draft EIR have been responded to in the Response to Comments section of the proposed Final EIR.[1] Where appropriate, changes have been made to the Draft EIR text in response to comments received and have been incorporated into the proposed Final EIR.

County staff will prepare a staff report and forward it with the proposed Final EIR and staff recommendation to the Santa Barbara County Flood Control District Board of Directors. The Board of Directors will review the environmental document and the staff report and conduct a public hearing on December 11, 2001. Please contact Karl Treiberg at (805) 568-3443 for additional information. Final action on the project and certification of the EIR will be taken at the public hearing.

If a copy of the proposed Final EIR is not attached, a copy may be obtained at the Santa Barbara County Flood Control District offices at 123 E. Anapamu Street in Santa Barbara. All documents referenced in the EIR are also available for review at that location. Additionally, the proposed Final EIR is available for review at the Santa Barbara Public Library as well as the Goleta, Santa Maria and UCSB libraries.

Jackie Campbell

Jackie Campbell, Environmental Hearing Officer

1 Pursuant to PRC 21092, public agencies that commented on the draft EIR are herewith provided a copy of the Final EIR or relevant portions and our response to agency comments.

FINAL PROGRAM
ENVIRONMENTAL IMPACT REPORT

UPDATED ROUTINE MAINTENANCE PROGRAM

01-EIR-01

November 2001

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Note to Readers:

Portions of the Draft EIR, issued in March 2001 for public review, have been revised in response to comments. Revisions and additions have been noted in the text of the Final EIR by underlining.

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EXECUTIVE SUMMARY
FINAL ENVIRONMENTAL IMPACT REPORT
ROUTINE MAINTENANCE PROGRAM
SANTA BARBARA COUNTY FLOOD CONTROL DISTRICT
NOVEMBER 2001

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW OF DISTRICT

The Santa Barbara County Flood Control and Water Conservation District (District) provides flood protection throughout the County by constructing flood control facilities; acquiring federal funds and assistance for capital projects; assisting other County's departments regarding flood control issues; and maintaining capacity in key watercourses to protect public infrastructure, life, and property. The District is governed by the Board of Supervisors, acting as the Board of Directors for the District. The District is funded through property tax assessments and benefit assessments.

The District maintains various flood control projects throughout the County that were constructed and funded by the federal government or the District, including debris basins, flood control channels and levees, storm drain facilities, and grade control structures. The District also conducts maintenance of most regional flood control channels and drainage facilities within the boundaries of municipalities in the County.

1.2 CURRENT ROUTINE MAINTENANCE PROGRAM

In 1991, the District completed a Program EIR for County-wide routine creek maintenance activities. A final routine Maintenance Program were approved by the Board in April 1992. The Maintenance Program includes various desilting, channel shaping, herbicide spraying, and channel clearing activities in most creeks and streams throughout the County. The Maintenance Program is implemented on an annual basis. Each year, the District prepares an Annual Routine Maintenance Plan, conducts public workshops, and completes a CEQA environmental review for planned maintenance work. The Annual Routine Maintenance Plan includes a description of the need for the maintenance work, the work to be performed, the presence of sensitive biological resources, impacts of the activities on biological resources, standard maintenance practices to reduce impacts, and restoration measures. The District documents impacts and mitigation of each maintenance activity and confirming that all planned activities are consistent with the adopted Program EIR. An Addendum to the 1991 Program EIR is then prepared.

Debris basin maintenance occurs on an as-needed basis, typically after severe storm events and wildfires, and is not included in the Annual Routine Maintenance Plan. A Debris Basin Maintenance Plan and set of CEQA Addenda was prepared by the District in 1996 to address maintenance activities in 16 debris basins on the South Coast.

1.3 LOWER SANTA YNEZ RIVER MAINTENANCE PROJECT

Since the 1950s, the District has periodically cleared portions of a 4.5-mile long reach of the lower Santa Ynez River that is prone to flooding. The reach extends from the Lompoc Wastewater Treatment Plant to the 13th Street Bridge on Vandenberg Air Force Base. The District cleared portions of the project reach in 1992, 1993, and 1997/1998. The latter clearing involved mowing about 16 acres to create a continuous 100-foot wide swath, as possible, along the river to prevent flooding during high flows. For that one-time mowing project, the District prepared an Environmental Assessment (EA) on behalf of VAFB.

1.4 NEED FOR AN UPDATED MAINTENANCE PROGRAM

The Maintenance Program was been successfully implemented for nine years. The District's program is based on careful planning to ensure that only necessary maintenance is conducted, field practices minimize environmental impacts, and environmental mitigation and restoration are included. However, the District has determined that the Maintenance Program needs to be updated, and as such, a new CEQA analysis will be required to address any modifications to the program. The primary reasons for updating the Maintenance Program are described below.

- Include information about threatened and endangered species listed since 1992
- Address impacts of maintenance on natural water quality filtering processes by wetlands
- Consider new analytic tools for assessing the need for maintenance, including considerations of fluvial geomorphology
- Include the Lower Santa Ynez River maintenance in the annual program
- Improve the standard maintenance practices by consolidating individual practices and re-organize them for greater efficiency of use
- Include a bio-technical bank stabilization in the program

2.0 CURRENT ROUTINE MAINTENANCE PROGRAM

The objectives of the routine maintenance program are to maintain the capacity of key watercourses in the County to preserve existing conveyance capacity and prevent the accumulation of obstructing vegetation and sediments that could increase existing flood hazards that could then result in damage to life, and public property and infrastructure. The extent and frequency of maintenance are dependent upon many factors including the availability of funds from individual flood zones, the degree of flood hazard, and the environmental impacts of the maintenance actions. Maintenance practices are used that minimize environmental impacts to natural habitats, water quality, sensitive species, and natural fluvial processes.

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2.1 CREEK MAINTENANCE ACTIVITIES

Maintenance activities are completed on numerous drainages in the County each summer and fall, prior to the winter. There are six primary types of activities involved in the program, as listed below. These actions are applied individually or in combination, depending upon the maintenance requirements of the affected drainage. A description of these actions is provided below.

Selective Brushing. Brushing is the removal of vegetation in the drainage that could obstruct flows or could trap sediments. The vegetation is removed because it has sufficient mass to reduce the channel capacity by increasing roughness; capture sediments at its base and thereby reduce channel capacity; and/or "snag" floating debris in storm flows and create a debris dam. Vegetation on the banks is not removed.

Herbicide Spraying. Herbicide is applied to patches of obstructive vegetation that reduces channel capacity by its mass, or is likely to cause a build up of sediment in the future. Foliage of the plants is sprayed with Aquamaster™ (formerly Rodeo™) or Round-up™, which are widely used EPA approved herbicides. Herbicide application is very patchy. That is, only clumps of plants are sprayed. Herbicides are applied by crews using a spray nozzle and a backpack unit. Only vegetative material is sprayed; herbicide is not applied to open water. Aquamaster™ is used when there is open water in proximity of the plants to be treated. It is registered for use on aquatic plants in open water conditions. It is non-toxic to fish and aquatic organisms at recommended application rates.

Channel Shaping and Bank Stabilization. Channel shaping consists of earthwork on the channel bed to redirect flows that are undermining banks and causing bank erosion or failure (that can lead to channel obstructions). Sandbars that redirect flows are typically lowered and spread out across the channel bed, filling low areas that have been scoured. Actively eroding banks that threaten public property and infrastructure are stabilized by the District using a variety of methods such as ungrouted or grouted rip-rap, pipe and wire revetment, concrete sackwalls, and native vegetation plantings. If feasible, willow cuttings (and other native plants) are planted in conjunction with the bank protection to provide a root system to stabilize the banks.

Bank Protection Repair (Unlined Channels). Bank protection that is damaged from flood flows may be repaired or replaced. In general, the same type of bank protection is used for the repair or replacement, and the length of bank protection is similar to the original condition. In addition to the repair of bank protection along earthen channels, the District also maintains and repairs concrete grade control structures.

Maintenance and Repair of Lined Channels. Various maintenance activities occur in concrete lined channels on an as-needed basis such as cleaning weep holes, trimming overhanging vegetation, repairing damaged concrete sections, and removing accumulated sediment from the channel bottom. Most of these activities are exempt from CEQA.

Channel Desilting. Desilting is required in areas where sediments have accumulated such that the channel capacity has been significantly reduced, or when sedimentation could cause imminent bank erosion and/or overbank flooding.

2.2 MAINTAINED DRAINAGES

The number of watercourses maintained each year since the inception of the Maintenance Program in 1992/93 varies greatly from year to year. The average number of drainages maintained each year is 11 and 4 on the South Coast and in the North County, respectively. More maintenance work occurs on the South Coast compared to the North County because there are more drainages near developed areas on the South Coast where flooding and bank erosion problems could threaten public infrastructure and other public facilities. More drainages are subject to maintenance work in years following flood events because there has been damage (usually bank erosion) and deposition of debris (e.g., down trees, wood and sand debris piles).

The most frequent maintenance action or project is brushing, followed by spraying and shaping. Desilting and repair of flood control facilities are substantially less common maintenance actions. There are slight differences in the relative frequency of specific maintenance actions between the North County and South Coast. For instance, there is a higher percentage of desilting on the North County creeks, probably due to the generally higher sediment deposition rates associated with long, low gradient alluvial creeks and rivers in an agricultural area. South Coast creeks have a higher relative frequency of repair work because of there are comparatively more flood control facilities in this urbanized environment. It should be noted that brushing and spraying typically occur together at the same maintenance site.

2.3 DEBRIS BASIN MAINTENANCE

There are 16 debris basins on the South Coast which are designed to capture sediments, boulders, and vegetative debris that could reduce channel capacity in downstream reaches. Detailed maintenance procedures are described in the 1996 Debris Basin Maintenance Plan, which is considered an element of the overall Maintenance Program. Basin maintenance is conducted on an as-needed basis to ensure the proper functioning of the basin prior to each winter. Basins are inspected during the winter after significant rain events. Routine maintenance includes keeping the outlet works clear of vegetation and maintenance of a 15-foot wide pilot channel through the center of the basin. Long-term maintenance of the basins involves the removal of sediment once the design capacity has been reduced by 25 percent (or when there is a significant wildfire)

2.4 ENVIRONMENTAL PROTECTION MEASURES

In 1992, the District adopted 77 Standard Maintenance Practices (SMPs) as part of the Maintenance Program. The SMPs were developed as mitigation measures for the impacts identified in the 1991 Final EIR. They include various environmental protection measures that are applied to individual maintenance activities for specific drainages, such as avoidance of sensitive species and post-maintenance habitat restoration.

2.5 SANTA YNEZ RIVER MAINTENANCE PROGRAM

The objective of the project is to maintain a 100-foot wide swath (or its equivalent in two swaths with minimum widths of 30 feet) along the project reach with non-obstructive vegetation in order to allow sufficient channel capacity for certain flood flows. The District estimates that the capacity of the project reach without channel clearing would be 5,000 cubic feet per second (cfs) due to the accumulation of dense, obstructive vegetation in the channel invert over time. Based on observations during the floods of 1995 and 1998, the District estimates that the project reach will convey up to 20,000 cfs after mowing.

The District proposes to periodically mow portions of the river from the Lompoc Wastewater Treatment Plant to the 13th Street Bridge, using the same methods from the December 1992, 1993 and 1997/1998 mowing projects. The District will connect the mowed areas to existing natural open areas in the river channel that are clear due to natural scouring, or that contain low-growing freshwater marsh vegetation. The District only mowed 16 acres in 1997/1998, and proposes only to mow up to this amount under the Maintenance Program. Mowing would not occur within 25 feet of the low flow channel and freshwater marsh areas.

Clearing will be accomplished by a combination of hand crews using chain saws and a mower that cuts vegetation at about 12 inches above the ground surface. Mowing would occur during the months of September 1st to December 1st to prevent conflicts with endangered riparian breeding birds and the southern steelhead trout. It is estimated that mowing will be required about every 3 to 5 years, depending upon runoff and weather conditions.

2.6 CURRENT HABITAT RESTORATION PROGRAM

Pursuant to the adopted SMPs and the District's state and federal permits, the District conducts habitat restoration under the following circumstances:

- Work areas temporarily disturbed during maintenance activities are restored if establishment of vegetation at the site will not impede flood flows

- Eroding banks that are stabilized with both earthen material and/or bank protection usually include selective plantings with riparian trees and shrubs in strategic locations on the bank to provide additional stabilization due to the root systems, and to replace the vegetation lost due to erosion.

- To compensate for the reduction in vegetation density and height due to brushing or the removal of vegetation due to channel shaping or desilting, the District provides compensatory habitat restoration at nearby locations. The District staff finds suitable restoration sites along the affected watercourse, as near to the impact areas as possible.

The District plants a variety of native shrubs and trees at the restoration sites, including (among others): arroyo willow, western sycamore, black cottonwood, mulefat, blackberry and California rose. Plants are installed in late fall and winter and provided with supplemental water for the first two years. The District provides routine maintenance, including watering, weeding, and plant replacement. The sites are monitored on a regular basis. The performance goals for all restoration sites are 70 percent survival by the end of the first year, and 100 percent thereafter. About 100 restoration sites have been established along creeks in the County under the Maintenance Program. Most have been deemed successful and do not require any additional planting or maintenance.

3.0 UPDATED MAINTENANCE PROGRAM

The proposed updated maintenance program consists of the current program described above with the following modifications or additional elements:

- **Lower Santa Ynez River Maintenance.** The District will include maintenance of the lower Santa Ynez River, as described above.

- New Mitigation Measures. The District will replace the current SMPs with new measures developed in the current EIR, which include new measures to address impacts to new endangered species like the steelhead, or impacts to water quality.

- New Grade Stabilizers. The District routinely repairs existing grade stabilizers that are in disrepair, suffer storm damage, or become unstable due to undercutting. Under the proposed updated maintenance program, the District would have the option of installing a new grade stabilizer on an unlined channel if it is necessary to prevent severe bank erosion or channel headcutting that could threaten public infrastructure. The stabilizer would be constructed to allow passage of fish and other aquatic organisms.

- Alternative Bank Protection Methods. Under the updated Maintenance Program, the District will consider the use of the following types of bio-technical methods when placing new slope protection for eroding banks.

    1. Live Stakes. Live cuttings of willows, mulefat, or cottonwood trees are tamped into the banks to root, grow, and form a thicket of new trees.
    2. Joint Planting. Willows are planted amongst ungrouted rip-rap, or soil with willow cuttings is placed on top of ungrouted rip-rap.
    3. Anchored Cuttings. Willow cuttings arranged in layers or bundles are secured to creek banks and partially buried.
    4. Brush Layers. Cuttings of willow are placed into trenches cut into the bank so that the branches stick outward from the bank.
    5. Live Fascines. Fascines are dormant branch cuttings of willows bound together into long cylindrical bundles that are placed in shallow trenches parallel to the bank and buried.
    6. Brush Mattress. A combination of live willow stakes, fascines, and individual branch cuttings are interwoven and pinned to the bank with jute cord or wire held in place with metal stakes. The "mattress" is then covered with soil to facilitate sprouting of the willows.

7. Tree Revetment. A row of downed trees are laid parallel to the base of the bank and anchored together, and to the bank with steel cable.
8. Coconut Fiber Roll. Cylindrical structures composed of coconut husk fibers bound together with twine woven from coconut material are placed parallel to the slope.
9. Reed Rolls. Soil and rootballs of herbaceous plants are placed into burlap rolls and partially buried and staked along the bank.
10. Geotextiles consist of plastic or biodegradable materials that hold soils in place to allow plants to become established through the mesh.
11. Live Cribwall. Hollow, box-like interlocking arrangements of timber are placed at the base of a slope that are filled with alternating layers of soil and live branch cuttings.

- **Modified Engineering Analysis.** The District will consider various hydraulic factors when determining the need and extent of maintenance, using current principles of channel stability and geomorphology. The District is interested in determining if such concepts and associated analytic tools will increase the efficiency and effectiveness of the maintenance planning and implementation program. Under the modified engineering analysis, the District would evaluate the following key geomorphologic characteristics when determining the need, type, and extent of channel maintenance in creeks where natural geomorphic processes are still present: channel slope and sinuosity, channel bed substrate and roughness, vegetation roughness, bankful channel dimensions (when present), and bank substrate and hardness. Understanding these factors and noting their occurrence at maintenance sites will allow the District to make more informed decisions about the need and extent for maintenance activities that could affect channel geometry and hydraulic processes.

- **Updated Habitat Restoration Plan.** The overall restoration goal is to replace the acreage of riparian and wetland habitats that are adversely affected by routine maintenance actions at or near the affected site through the creation of native habitat in disturbed areas (unrelated to the maintenance program). Only vegetated habitats that are affected would be mitigated. Replacement habitats would be willow scrub or woodland, mulefat scrub, and willow/cottonwood woodland. Compensatory habitat restoration would not occur for areas that are dominated by aggressive, noxious perennial weeds such as tamarix or giant reed. If this type of vegetation is removed as part of the maintenance program, the District will stabilize the maintenance site with native vegetation, rather than implement compensatory restoration.

  In most cases, the District will restore habitat at or near the site of the maintenance activity. However, in the event that restoration is not feasible at the work site, then restoration will occur at a suitable location elsewhere along the affected drainage. Finally, if suitable sites for restoration are not available elsewhere along the affected drainage, the District will use habitat restoration credits at the Los Carneros Mitigation Bank.

  Under the updated Maintenance Program, the District will document the area (square footage) of vegetated native habitats affected by each maintenance action in the Annual Plan. The restoration site will encompass same area as the affected area to achieve a 1:1 replacement ratio. The District may "bank" mitigation acreage credit by restoring in excess of what is required in some years, then using these credits for mitigation in subsequent years.

The installation of a new grade stabilizer or bank protection (that does not incorporate vegetation) will be mitigated at a higher ratio. In these cases, a site will be located on the affected drainage to create in-kind habitat at a 2:1 area replacement ratio. No habitat mitigation will be implemented for bank protection that uses vegetation stabilization only, or 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.

Mitigation for maintenance activities at a specific area will only occur once during the next ten years. That is, once habitat mitigation has been completed for maintenance activities along a specific reach of a drainage, no further mitigation is required for the next ten years for future maintenance of that same reach regardless of the type of future maintenance activity, provided the previous habitat mitigation has been successfully implemented, and the District continues to minimize habitat impacts to the extent feasible. This ten-year period begins with the formal adoption of the updated maintenance program. At the end of this ten year period, habitat mitigation would be required for maintenance work at all locations, even those areas where mitigation was previously completed. Mitigation will need to be repeated during the ten year period only if the planned maintenance activity will remove previously restored habitat, or if the previous restoration effort failed due to poor maintenance, flood flows, or vandalism.

All habitat mitigation completed over the past ten years under the current maintenance program and prior to the adoption of the updated routine maintenance program will not be considered for maintenance work under the updated program. Hence, no mitigation credits will be carried forward from the current program.

4.0 ENVIRONMENTAL IMPACTS

A summary of the environmental impacts of the updated Routine Maintenance Program is provided in Table S-1 and Table (S-2). The impacts of the Lower Santa River Project have been presented in Table S-2 for sake of convenience to the reader. These tables include a listing of mitigation measures designed to avoid or lessen environmental impacts. In addition, the residual impact after the application of a mitigation measure is provided in the tables. Impacts are categorized as follows:

Class I Impacts. Unavoidable significant impacts. For these impacts, the District must issue a "Statement of Overriding Considerations" under Section 15092 (b) of the *CEQA Guidelines* if the project is approved.

Class II Impacts. Significant environmental impacts that can be mitigated. The District must make "findings" under Section 15091(a) of the *CEQA Guidelines* if the project is approved.

Class III Impacts. Other environmental impacts that are potentially adverse but not significant. Mitigation measures are recommended to minimize adverse impacts.

Class IV Impacts. Beneficial impacts.

4.1 SUMMARY OF CLASS I IMPACTS

The updated Routine Maintenance Program would result in four significant, unmitigable impacts (Class I), as listed below. These impacts would generally not be significant at individual maintenance locations. However, they may be cumulatively significant for all affected sites over time. Mitigation measures to reduce the magnitude of these impacts are also indicated. The impacts listed below apply to maintenance activities along drainages (including the Lower Santa Ynez River) and in debris basins. However, there are no site-specific Class I impacts for the Lower Santa Ynez River maintenance project.

TABLE S-3
SUMMARY OF CLASS I IMPACTS

Impact	Mitigation Measure
Potentially Reduce the Amount of Natural Biofiltering. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. It could potentially reduce the bio-filtration effects (if any) of emergent wetlands present along the wetted channel and debris basin bottom. As such, maintenance activities could contribute to an overall decrease in water quality.	*H-1 - Maintenance Need Analysis.* Evaluate relevant hydraulic factors when determining the need, type, and extent of channel maintenance in order to minimize maintenance activities to the extent feasible. *B-2 – Minimize Vegetation Removal from Channel Bottom.* Minimize vegetation removal from the channel bottom to the least amount necessary to achieve the specific maintenance objectives for the reach. *W-3 - Maintain Biofiltering.* To the extent feasible and consistent with the maintenance objectives, avoid removal of emergent herbaceous wetland vegetation on the channel bottom. *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.

Impact	Mitigation Measure
Reduce Amount and Quality of Channel Bottom Habitat. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. Although the functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's habitat restoration program, there is a potentially adverse cumulative effect of annual habitat disturbances throughout the County.	***B-1 - Compensatory Habitat Mitigation.*** Provide compensatory habitat mitigation for the removal of riparian and wetland habitat associated with maintenance activities either on-site. ***B-2 – Minimize Vegetation Removal from Channel Bottom.*** ***B-3 - Construction Monitoring During Vegetation Removal.*** Monitor major vegetation removal activities to ensure that the appropriate limits are observed.
Displace Wildlife due to Vegetation Removal in the Channel Bottom. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. These actions could reduce foraging and loafing habitat for certain riparian and wetland dependent bird species. It can also reduce habitat heterogeneity for reptiles and small mammals, and degrade aquatic habitats by removing protective cover and increasing temperatures. While the long term functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's updated habitat restoration program, there will be a temporal impact to wildlife that cannot be fully mitigated.	***B-1 - Compensatory Habitat Mitigation.*** ***B-2 – Minimize Vegetation Removal from Channel Bottom.*** ***B-3 - Construction Monitoring During Vegetation Removal.***
Adverse Effects of Maintenance on Aquatic Habitat. Channel shaping, bank stabilization by placing fill or grading banks, sandbar removal, excessive removal and/or thinning of in-channel vegetation, and pilot channel construction could reduce vegetation cover, pools and gravel beds, organic input from overhanging vegetation supporting aquatic productivity, and instream cover and debris providing micro-habitat. In addition, fish and aquatic organisms could be directly displaced. These impacts are temporary and reversible.	***H-1 - Maintenance Need Analysis.*** ***B-1 - Compensatory Habitat Mitigation.*** ***B-2 – Minimize Vegetation Removal from Channel Bottom.***

4.2 SUMMARY OF CLASS II IMPACTS

The updated Routine Maintenance Program would result in numerous significant, but mitigable impacts (Class II), as listed in Tables S-1 and S-2. Mitigation measures that would reduce the impacts to a less than significant level are presented in the tables. A summary of the Class II impacts is presented below in Table S-4.

TABLE S-4
SUMMARY OF CLASS II IMPACTS

ROUTINE MAINTENANCE PROGRAM:

Impact	Mitigation Measure	Residual
Hydrology		
Preventing a Build up of Channel Resistance May Increase Velocities.	H-1 - Maintenance Need Analysis B-7 – Post Maintenance Channel Bed Treatment	Less than significant
Reduced Bank Stability due to Giant Reed Removal	H-6 – Removal of Giant Reed from Banks	Less than significant
Unintended Bank Erosion from Hard Bank Protection.	H-5 - Bank Protection Methods H-9 Landowner Information Regarding Bank Prot.	Less than significant
Effect of Equipment on Channel Bed	H-1 - Maintenance Need Analysis B-7 – Post Maintenance Channel Bed Treatment	Less than significant
Water Quality		
Potentially Adverse Herbicide Concentrations	W-2 – Responsible Herbicide Application W-5 Water Quality Monitoring During Herbicide Applications for Large Projects W-6 – Public Education Regarding Creek Water Quality W-7 – Reporting Water Quality Incidents W-8 – Reduce Overall Herbicide Use	Less than significant
Accidental Spills	W-4 – Prevent Accidental Spills	Less than significant
Wetlands, Riparian Habitat, and Rare Plants		
Remove Bank Habitat	B-1 – Compensatory Habitat Mitigation H-9 Landowner Information Regarding Bank Prot.	Less than significant
Access Ramp Habitat Impacts	H-8 – Access Ramps	Less than significant
Temporary Habitat Disturbance	B-4 - Restore Temporarily Disturbed Areas	Less than significant
Displace Sensitive Plants	B-5 - Pre-Construction Biological Surveys B-6 - Construction Monitoring for Sensitive Species	Less than significant
Fish, Aquatic Species, and Wildlife		
Displace Wildlife for Hard Bank Protection	B-1 – Compensatory Habitat Mitigation H-9 Landowner Information Regarding Bank Prot.	Less than significant
Displace Wildlife for New Access Ramps	B-1 – Compensatory Habitat Mitigation	Less than significant
Displace or Remove Sensitive Fish and Wildlife	B-5 - Pre-Construction Biological Surveys and Avoidance Measures B-6 - Construction Monitoring for Sensitive Species B-1 – Compensatory Habitat Mitigation	Less than significant
Fish and Wildlife Exposure to Herbicide	W-2 – Responsible Herbicide Application W-5 Water Quality Monitoring During Herbicide Applications for Large Projects	Less than significant
Fish Passage Impacts from New Grade Stabilizers	H-7 – New or Reconstructed Grade Stabilizers F-1 Assist Others with Fish Passage Impediments	Less than significant

TABLE S-4
(Continued)

ROUTINE MAINTENANCE PROGRAM (Continued):

Impact	Mitigation Measure	Residual
Air Quality		
Equipment Emissions	A-1 – Reduce Emissions	Less than significant
Fugitive Dust Emissions	A-2 – Reduce Fugitive Dust	Less than significant
Noise		
Maintenance Equipment Noise	N-1 – Minimize Noise	Less than significant
Cultural Resources		
Disturb Cultural Resources	C-1 - Unexpected Archeological C-2 – Archeological Surveys	Less than significant
Recreation		
Potentially Adverse Herbicide Concentrations	W-2 – Responsible Herbicide Application	Less than significant
Impacts of Reduced Sediment Supply to Beaches	R-2 – Disposal of Sediments at Beaches	Less than significant
Visual Impacts		
Visual Impacts in Channels	V-1 - Minimize Visual Impacts in Channels	Less than significant

LOWER SANTA YNEZ RIVER PROJECT:

Impacts	Mitigation Measures	Residual
Water Resources		
Equipment Leaks and Spills	SY-H-1 - Prevent Equipment Leaks and Spills	Less than significant
Wetlands, Riparian Habitat, and Rare Plants		
Habitat Disturbance	SY-B-1 – Compensatory Habitat Mitigation SY-B-2 - Limits of Disturbance SY-B-3 – Minimize Surface SY-B-4 – Training and Monitoring	Less than significant
Disturbance to Wetlands	SY-B-1 – Compensatory Habitat Mitigation SY-B-5 – Avoid Ponds and Wetlands	Less than significant
Access Ramp Habitat Impacts	SY-B-6 – Access Ramp Restoration	Less than significant
Impacts to Rare Plants	SY-B-7 - Pre-Construction Biological Surveys	Less than significant
Fish, Aquatic Species, and Wildlife		
General Impacts to Wildlife	SY-B-2 - Limits of Disturbance SY-B-5 – Avoid Ponds and Wetlands SY-B-8 – Seasonal Avoidance	Less than significant

TABLE S-4
(Continued)

LOWER SANTA YNEZ RIVER PROJECT (Continued):

Impact	Mitigation Measure	Residual
Displace or Disturb Sensitive Wildlife	SY-B-2 - Limits of Disturbance SY-B-5 - Avoid Ponds and Wetlands SY-B-7 - Pre-Construction Biological Surveys SY-B-8 - Monitor for Sensitive Species SY-B-9 - Seasonal Avoidance	Less than significant
Disturbance to Migrating Steelhead	SY-B-9 - Seasonal Avoidance	Less than significant
Equipment Leaks and Spills (as it affects aquatic organisms and sensitive species)	SY-H-1 - Prevent Leaks and Spills	Less than significant

5.0 CUMULATIVE IMPACTS

Under CEQA, an EIR must discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," which means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Section 15065). Section 15355 of the CEQA Guidelines defines cumulative impacts as two or more individual effects, that when considered together, are either considerable or compound other environmental impacts. These cumulative impacts are changes in the environment that result from the incremental impact of the proposed project and other nearby related projects.

General types of projects that could affect the same resources and involve similar impacts as the proposed maintenance program are listed below:

- Land Development Projects. Development of residential, commercial, and industrial projects involves the conversion of vacant, agricultural, or native lands. Projects located adjacent to a creek or river can result in adverse impacts due to increased noise and lighting, disturbances from human entry, and introduction of non-native plants from landscaping. Land development in a watershed can also have an indirect adverse effect on creek conditions due to altered stormwater hydrology and quality.

- Road Maintenance Projects. Maintenance work on roadway culverts and bridges by the County and Caltrans can affect aquatic, riparian, and wetland resources in a manner similar to the proposed project.

- Agricultural Activities. Agricultural activities can affect the natural resources of creeks by increased levels of sediment, nutrients, and pesticides.

The proposed maintenance program would contribute to the above impacts to natural resources in the creeks and rivers of the County. In several instances, this contribution is considered cumulatively considerable. Significant cumulative impacts are listed below:

1. Increased land development will result in a greater need to perform maintenance activities due to the increase in public infrastructure and structures at or near drainages. Hence, the extent and frequency of the maintenance program will increase as land development increases in portions of the County in accordance with the Comprehensive Plan, and in local municipalities. A similar effect would occur as the public infrastructure system increases (i.e., roads, pipelines, utilities). In essence, most of the impacts described in Section 5.0 for the proposed program would intensify over time as new reaches are included in the routine maintenance program. This effect is considered a significant and unmitigable cumulative impact (Class I).

2. The impacts of the proposed maintenance program on water quality, wetland and riparian habitat, fish and wildlife, and sensitive species are considered cumulatively considerable in the context of the impacts of ongoing and future land development, agriculture, and roadway maintenance. All of these activities would combine to cause a cumulative degradation of riparian resources throughout the County. Significant effects may not be exhibited at any one location along a creek or river. However, the effect would be widespread and regional in nature as the County reaches full build out in accordance with the Comprehensive Plan. This impact is considered a significant and unmitigable (Class I).

6.0 ALTERNATIVES

6.1 PROGRAM ALTERNATIVES

Alternatives to the proposed updated maintenance program that are addressed in the EIR are listed below:

1. No Maintenance Alternative - the condition in which no maintenance is implemented

2. Traditional Maintenance - pre-1992 channel clearing with little environmental protection included.

3. Current Maintenance (No Project Alternative) - the program approved in 1992 which includes environmental protection through the use of SMPs and annual maintenance plans and their associated CEQA compliance. This alternative represents the baseline environmental conditions for the EIR impact assessment.

The results of the comparison of the impacts amongst the above alternatives and the proposed maintenance program are summarized below. Based on the EIR analyses, the environmentally superior alternative is the proposed Updated Routine Maintenance Program.

- The alternatives to the proposed maintenance program would not avoid or reduce the significant unmitigable impacts (Class I) associated with the proposed updated maintenance program, with the exception of the No Maintenance Alternative

- The Traditional Maintenance and the Current Maintenance alternatives would have new and additional significant impacts compared to the proposed project, resulting in an overall greater number and magnitude of environmental impacts.

- The No Maintenance Alternative would not meet the basic project objectives to reduce flooding hazards and protect public infrastructure through preventative maintenance, rather than through emergency responses. This alternative would also have severe environmental impacts of increased flooding and bank erosion.

- The No Maintenance Alternative would lessen most of the significant, but mitigable impacts (Class II) of the proposed project. The Traditional Maintenance and the Current Maintenance alternatives would not substantially lessen the Class II impacts of the proposed project.

- The No Maintenance Alternative is not considered feasible by the District because it would not meet the District's project objectives. The Traditional Maintenance Alternative is not considered feasible because it would have greater environmental impacts that can be avoided, and would most likely not be permitted by the state and federal resource agencies.

6.2 SANTA YNEZ RIVER ALTERNATIVES

Alternatives to the proposed Santa Ynez River maintenance project are listed below:

1. No Project Alternative
2. Minimum Mowing Alternative - 8 acres of mowing with a goal of a 50-foot wide swath
3. Minor Mowing Alternative - 12 acres of mowing with a goal of a 75-foot wide swath
4. Proposed Mowing Alternative - 16 acres of mowing with a goal of a 100-foot wide swath
5. Original Mowing Alternative - 125 acres of mowing with a 300-foot wide mowed zone

The results of the comparison of the impacts amongst the above alternatives and the proposed maintenance program are summarized below. Based on the EIR analyses, the environmentally superior alternative is the Minor Mowing Alternative. However, it is not considered desirable by the District as it does not substantially meet the project objectives.

- The Minimum and Minor Mowing Alternatives would result in less environmental impacts than the proposed project. However, they would not provide a suitable level of flood protection deemed necessary and reasonable by the District, and established by recent, previous clearing events. Hence, they are considered undesirable, although they still represent feasible alternatives.

- The No Project Alternative would result in greater environmental impacts than the proposed project due to the damaging effects of flooding on prime farmlands and on mature riparian woodland on the riverbanks. This alternative would not meet the District's objectives, and is considered infeasible and undesirable.

- The Original Mowing Alternative would cause substantially greater impacts than the proposed project, including several potentially significant, unmitigable habitat impacts.

TABLE S-1
SUMMARY OF IMPACTS AND MITIGATION –
ROUTINE MAINTENANCE PROGRAM (Not Including the Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
CLASS I IMPACTS: SIGNIFICANT AND UNMITIGABLE		
Water Quality		
Potentially Reduce the Amount of Natural Biofiltering. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. It could potentially reduce the bio-filtration effects (if any) of emergent wetlands present along the wetted channel and debris basin bottom. As such, maintenance activities could contribute to an overall decrease in water quality.	*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. *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	This impact would generally not be significant at individual maintenance locations. However, it may be cumulatively significant for all affected sites over time.

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Potentially Reduce the Amount of Natural Biofiltering (Continued)	*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. *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.	This impact would generally not be significant at individual maintenance locations. However, it may be cumulatively significant for all affected sites over time.

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Wetlands, Riparian Habitat, and Rare Plants		
Reduce Amount and Quality of Channel Bottom Habitat. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. Although the functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's habitat restoration program, there is a potentially adverse cumulative effect of annual habitat disturbances throughout the County.	*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.	This impact would generally not be significant at individual maintenance locations. However, it may be cumulatively significant for all affected sites over time.

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Reduce Amount and Quality of Channel Bottom Habitat. (Continued)	*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. See Mitigation Measure ***B-2 – Minimize Vegetation Removal from Channel Bottom.***	This impact would generally not be significant at individual maintenance locations. However, it may be cumulatively significant for all affected sites over time.
Fish, Aquatic Species, and Wildlife		
Displace Wildlife due to Vegetation Removal in the Channel Bottom. Removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. These actions could reduce foraging and loafing habitat for certain riparian and wetland dependent bird species. It can also reduce habitat heterogeneity for reptiles and small mammals, and degrade aquatic habitats by removing protective cover and increasing temperatures. While the long term functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's updated habitat restoration program, there will be a temporal impact to wildlife that cannot be fully mitigated.	See Mitigation Measure *B-1 - Compensatory Habitat Mitigation.* See Mitigation Measure *B-2 – Minimize Vegetation Removal from Channel Bottom.* See Mitigation Measure *B-3 - Construction Monitoring During Vegetation Removal.*	This impact would generally not be significant at individual maintenance locations. However, it may be cumulatively significant for all affected sites over time.

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Adverse Effects of Maintenance on Aquatic Habitat. Channel shaping, bank stabilization by placing fill or grading banks, sandbar removal, excessive removal and/or thinning of in-channel vegetation, and pilot channel construction could reduce vegetation cover, pools and gravel beds, organic input from overhanging vegetation supporting aquatic productivity, and instream cover and debris providing micro-habitat. In addition, fish and aquatic organisms could be directly displaced. These impacts are temporary and reversible.	See Mitigation Measure *H-1 - Maintenance Need Analysis.* See Mitigation Measure *B-1 - Compensatory Habitat Mitigation.* See Mitigation Measure *B-2 – Minimize Vegetation Removal from Channel Bottom.*	This impact would generally not be significant at individual maintenance locations. However, it may be cumulatively significant for all affected sites over time.

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
CLASS II IMPACTS: SIGNIFICANT, BUT MITIGABLE		
Hydrology		
Preventing a Build up of Channel Resistance May Increase Velocities. Channel resistance is reduced by brushing, mowing, spraying, and discing to remove obstructive and/or silt-trapping vegetation; and by removing storm debris and obstructive sandbars. These actions can result in higher velocities, which in turn could theoretically cause minor and localized channel degradation that contributes to bank erosion in the affected reach. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. To ensure that this impact is avoided under the current program, the District would conducts an "engineering analysis" (Mitigation Measure H-1) to determine the need, nature, and extent of maintenance activities each year along maintained drainages, and give full consideration of incidental adverse hydraulic effects associated with channel maintenance.	See Mitigation Measure *H-1 - Maintenance Need Analysis.* See Mitigation Measure *B-7 – Post Maintenance Channel Bed Treatment.*	Less than significant
Reduced Bank Stability due to Giant Reed Removal. The District may periodically remove giant reed plants from stream banks for habitat restoration purposes if the stands are large and appear to represent a significant threat to the local riparian vegetation. Removal of large stands could destabilize banks and result in increased local bank erosion and downstream sedimentation. Hydraulic impacts would be localized. In addition, large stands of giant reed on banks that are vulnerable to erosion are few in number.	***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.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Unintended Bank Erosion from Hard Bank Protection. Installation of hard bank protection could cause local bank erosion and channel bed degradation on the opposite banks due to increased flow velocities. This impact is expected to occur rarely, if at all, and would only have localized hydraulic impacts.	*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-9 - Landowner Information Regarding Bank Protection*. The District shall provide information to landowners along creeks that wish to stabilize eroding banks on their property. The District shall prepare a guide for landowners that describes methods of bank protection, with an emphasis on bio-technical solutions. The booklet shall be written for an educated layperson and include clear diagrams about materials and installation methods. It shall also include discussions of hydraulic and biological impacts when considering bank protection, and permits required from local, state, and federal agencies. The District shall also make staff available to conduct site visits with property owners to provide guidance on an as-needed basis.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Effect of Equipment on Channel Bed. For large maintenance projects, the movement of equipment in the channel bed can disrupt any armored layer on the channel bed and loosen sediments. It may also reduce the channel topographic diversity, which imparts a certain resistance to flow, thereby increasing flow velocities and sediment transport capacity.	See Mitigation Measure *H-1 - Maintenance Need Analysis.* See Mitigation Measure *B-7 – Post Maintenance Channel Bed Treatment.*	Less than significant
Water Quality		
Potentially Adverse Herbicide Concentrations. The application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed because of the following reasons: (1) no herbicide is directly applied to open water; (2) overspray is minimized by precise spraying by trained field crews; (3) most spraying occurs in the fall when flows are absent in drainages; (4) glyphosate is strongly absorbed by soil particles and not easily mobilized once it has contact with soils or wet sediments; and (5) residual herbicide in soils or sediments are subject to microbial degradation. However, there is a potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray which would degrade water quality. While this impact would be localized and temporary, it is considered a significant, but mitigable cumulative impact because of the wide use of herbicides throughout the county.	*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.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Potentially Adverse Herbicide Concentrations (Continued)	*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.	

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Potentially Adverse Herbicide Concentrations (Continued)	*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.	

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Accidental Spills and Leaks. Accidental leakage or spill of fuel and/or oil from heavy equipment working within or directly adjacent to the watercourse or in a debris basin can cause discharge of pollutants to the creek, which would degrade water quality. This impact is anticipated to be highly localized because most accidental spills are limited in quantity (e.g., less than 50 gallons) and would occur in the dry season when flows are absent. Potential accidental spills of herbicides from applicators.	*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.	Less than significant
Wetlands, Riparian Habitat, and Rare Plants		
Remove Bank Habitat. The District may place "hard" bank protection (i.e., grouted rip-rap) to stabilize a severely eroded bank. Under the updated maintenance program, the use of hard bank protection would only be allowed if no other alternatives using biotechnical methods are available or feasible. This impact would occur very rarely and typically involve a limited reach (e.g., less than 200 feet). Use of hard bank protection would permanently reduce the amount of existing and future bank riparian vegetation.	See Mitigation Measure *B-1 – Compensatory Habitat Mitigation* See Mitigation Measure *H-9 - Landowner Information Regarding Bank Protection*	Less than significant
Access Ramp Habitat Impacts. Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat.	*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. See Mitigation Measure *B-1 – Compensatory Habitat Mitigation*	Less than significant
Temporary Habitat Disturbance. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could temporarily remove wetland, riparian and aquatic habitats in work areas.	*B-4 - Restore Temporarily Disturbed Areas.* The District shall restore channel banks containing riparian or wetland vegetation that are temporarily disturbed by maintenance or construction activities associated with the following: channel shaping, placement of bank protection, ramp construction, and repair or 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.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Displace Sensitive Plants. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, channel shaping, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could remove regionally rare plant species This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. This impact is expected to occur infrequently because so few sensitive plants occur in the areas maintained.	*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.	Less than significant
Fish, Aquatic Species, and Wildlife		
Displace Wildlife for Hard Bank Protection. Placement of "hard" bank stabilization without native vegetation would permanently reduce the amount of existing and future bank riparian vegetation. This action could also adversely affect nesting and foraging habitat for riparian-dependent bird species, as well as cover for riparian amphibians, reptiles, and mammals.	See Mitigation Measure *B-1 – Compensatory Habitat Mitigation* See Mitigation Measure *H-9 - Landowner Information Regarding Bank Protection*	Less than significant
Displace Wildlife for New Access Ramps. Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat. This action could adversely affect nesting, cover, and foraging habitat for riparian-dependent bird species, as well as cover for riparian amphibians, reptiles, and mammals.	See Mitigation Measure *B-1 – Compensatory Habitat Mitigation*	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Displace or Remove Sensitive Fish and Wildlife. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, channel shaping, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could remove and displace sensitive fish and wildlife species, depending upon location and time of year. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. Species that could be directly affected include the southern steelhead trout, arroyo chub, southwestern pond turtle, two-striped garter snake, San Diego horned lizard, California red-legged frog, silvery legless lizard, and tri-colored blackbird. Species that could be indirectly affected due to habitat modification include southwestern willow flycatcher, least Bell's vireo, yellow warbler, yellow breasted chat, purple martin, warbling vireo, Wilson's warbler, Swainson's thrush, blue grosbeak.	See Mitigation Measure *B-5 - Pre-Construction Biological Surveys and Avoidance Measures.* See Mitigation Measure *B-6 - Construction Monitoring for Sensitive Species* See Mitigation Measure *B-1 – Compensatory Habitat Mitigation*	Less than significant
Fish and Wildlife Exposure to Herbicide The analyses presented in Section 5.2.3 indicated that the application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed, because of reasons: (1) no herbicide is directly applied to open water; (2) overspray is minimized by precise spraying by trained field crews; (3) most spraying occurs in the fall when flows are absent in drainages; (4) glyphosate is strongly absorbed by soil particles and not easily mobilized once it has contact with soils or wet sediments; and (5) residual herbicide in soils or sediments are subject to microbial degradation. However, there is a potential, albeit very remote, that adverse herbicide concentrations may be temporarily present in aquatic areas immediately after spraying due to excessive or poor application.	See Mitigation Measure *W-2 – Responsible Herbicide Application* See Mitigation Measure *W-5 - Water Quality Monitoring During Herbicide Application for Large Projects.*	Less than significant
Fish Passage Impacts from New Grade Stabilizers .New grade stabilizers may be installed to stabilize the bed of a channel that is being lowered due to headcutting. A new or reconstructed stabilizer could create a vertical drop, which may become a fish passage impediment or barrier over time, depending on the height of the vertical drop.	*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.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Fish Passage Impacts from New Grade Stabilizers (Continued)	*F-1 – Assist Others with Fish Passage Impediment Removal Projects*. Subject to available resources, the District shall provide technical and regulatory assistance to other parties (agencies and non-governmental organizations) seeking to remove or modify fish passage impediments along reaches maintained by the District. Assistance shall include review and recommendation concerning project plans; and identifying a CEQA lead agency and assisting in the preparation of a CEQA document for the proposed project; and general assistance in acquiring access easements and permits.	
Air Quality		
Equipment Emissions. Temporary emissions of reactive organic compounds (ROC), particulate matter, and NOx associated with gasoline and diesel-powered heavy-duty maintenance equipment, as well as employee vehicles and trucks transporting excavated materials to and from maintenance sites	*A-1 – Reduce Emissions*. Implement the following Santa Barbara County APCD-approved measures for each piece of heavy-duty diesel construction equipment to minimize NO_x emissions: (1) The engine size of construction equipment shall be the minimum practical size; (2) Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) should be utilized wherever feasible; (3) The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time; (4) Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or precombustion chamber engines; (5) Catalytic converters shall be installed on gasoline-powered equipment, if feasible; (6) Diesel catalytic converters shall be installed, if available; and (7) Diesel powered equipment should be replaced by electrical equipment, whenever feasible.	Less than significant
Fugitive Dust Emissions. Temporary emissions of fugitive dust (particulate matter) due to earth moving activities during maintenance, including channel shaping, desilting, bank stabilization by placing fill or grading banks, bank protection construction or repair, pilot channel construction, and access ramp construction.	*A-2 – Reduce Fugitive Dust*. Implement the following Santa Barbara County APCD-approved measures to minimize fugitive dust emissions: (1) After clearing, grading, earth moving or excavation is complete, the disturbed area must be treated with watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur; (2) During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this shall include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 mph. Reclaimed water shall be used whenever possible; (3) Minimize the amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less; (4) Gravel pads should be installed at all access points to prevent tracking of mud onto public roads; (5) If importation, exportation, and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation; (6) Trucks transporting fill material to and from the site shall be tarped; and (6) Dust control requirements shall be shown on all grading plans.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Noise		
Maintenance Equipment Noise. Maintenance activities that require the use of heavy equipment, such as channel shaping and desilting, could temporarily increase the ambient indoor and outdoor noise levels for noise-sensitive receptors located in close proximity to the watercourse where maintenance work is conducted. This impact would be limited to weekdays between 8 AM and 5 PM, with a limited duration of several days at any one location. Increased ambient noise levels could cause a nuisance to noise sensitive receptors, such as residences, schools, nursing homes, and day care centers.	*N-1 – Minimize Noise*. Routine maintenance work shall be limited to weekdays and the hours of 7:30 AM and 4:30 PM. Equipment and haul trucks shall be equipped with functioning and properly maintained muffler systems, including intake silencers where necessary. Additional reductions in noise emissions shall be provided, as feasible, by performing noisy operations, such as chipping and loading spoils into dump trucks on the banks, as far away as practicable from sensitive receptors.	Less than significant
Cultural Resources		
Disturb Cultural Resources. There is a remote potential for certain earth-disturbing maintenance activities to disturbed buried prehistoric and historic archeological sites and isolated artifacts. This impact would occur only on undisturbed upland sites outside watercourse channels and basins due to incidental excavation grading banks for stabilization, installing or repairing bank protection, and constructing access ramps.	*C-1 - Unexpected Archeological Finds*. If cultural materials are unexpectedly uncovered during maintenance activities, the District shall immediately consult with a qualified archeologist who shall inspect the material and coordinate with the District to halt or redirect earth-disturbing maintenance work until the significance of the material is determined, and the location is cleared for further work. *C-2 – Archeological Surveys*. The District shall conduct an archeological field investigation in maintenance areas that may be disturbed by excavation activities associated with routine maintenance when such work occurs in upland areas outside watercourses and basins that: (1) appear to represent undisturbed ground not subject to previous excavations or significant grading; and (2) contain known significant archeological sites. The investigation shall be conducted by a qualified cultural resource specialist.	Less than significant
Recreation		
Potentially Adverse Herbicide Concentrations. The application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed. However, there is a potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray which would degrade water quality, and affect recreational users along creeks. This impact would be localized and temporary.	See Mitigation Measure *W-2 – Responsible Herbicide Application*	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Impacts of Reduced Sediment Supply to Beaches. Periodic removal of the sediments from the basins contributes to the reduction in overall sediment supply to local beaches.	*R-2 – Disposal of Sediments at Beaches.* Sediments removed from debris basins or creeks on the South Coast during long-term maintenance of the basins and during routine maintenance of creeks, respectively, shall be disposed at local beaches to the extent feasible. Only suitably sized sediments shall be disposed at the beaches, as permitted by applicable regulatory agencies.	Less than significant
Visual Impacts		
Visual Impacts in Channels. Certain maintenance activities could reduce the visual quality of riparian corridors that are visible from both private viewpoints (e.g., private roads, backyards of private residences) and public viewpoints (e.g., public parks roads). These channel maintenance activities include channel shaping, bank protection construction or repair, bank stabilization, and desilting. An adverse visual impact would occur if such activities remove substantial amounts of riparian vegetation or very large specimen trees (such as oaks, sycamores) and/or substantially modifies the banks and bed of a watercourse such that the affected reach is clearly characterized as a man-altered landscape feature.	*V-1 - Minimize Visual Impacts in Channels.* The District shall minimize brushing in the channel bottom (per Mitigation Measure B-1), minimize remove of bank vegetation (per Mitigation Measure H-2), incorporate natural channel dimensions during channel reshaping (per Mitigation Measure H-1), restore all temporarily disturbed areas with native riparian trees and shrubs (per Mitigation Measure B-4), and use biotechnical methods with riparian vegetation for bank protection and repair, as feasible (per Mitigation Measure H-4). Implementation of these measures will reduce short and long-term visual impacts.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
CLASS III IMPACTS: ADVERSE, BUT NOT SIGNIFICANT		
Hydrology		
Impact of Removing Channel Obstructions (Excessive Desilting). Excessive desilting could result in lowering the channel bed below its previous invert elevation, which could contribute to oversteepened banks that are prone to failure. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts.	See Mitigation Measure ***H-1 - Maintenance Need Analysis*** See Mitigation Measure ***W-3 - Maintain Biofiltering by Reseeding Channel Bottom Areas.*** ***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.	Less than significant
Altered Channel Sinuosity and Slope. Creation of a straight pilot channel could theoretically reduce sinuosity, increase channel slope, and cause channel bed degradation. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts.	***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.	Less than significant
New Grade Stabilizer. The District may occasionally need to stabilize the bed of a channel that is being degraded. A new grade stabilizer will prevent channel bed degradation, which in turn, leads to oversteepened banks. However, it could create a scour pool beneath the grade stabilizer and cause a need for repeated repairs.	***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.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Steep or Exposed Access Ramps. Creating an overly steep and unstabilized access ramp can cause increased local bank erosion.	*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.	Less than significant
Impacts of Reduced Sediments. Periodic removal of the sediments from the basins contributes to the reduction in overall sediment supply to the downstream reaches of the drainages. Reduced sediment supply can result in channel degradation over time.	See Mitigation Measure ***H-1 - Maintenance Need Analysis.***	Less than significant
Water Quality		
Temporary Sedimentation and Turbidity. Channel shaping, desilting, bank stabilization by placing fill or grading banks, bank protection construction or repair, pilot channel construction, access ramp construction, and excessive removal and/or thinning of in-channel vegetation could cause localized increases in suspended sediments and turbidity which could temporarily degrade water quality. This impact would also occur due to debris basin desilting and to a lesser degree, to pilot channel and outlet works clearing.	***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.	Less than significant

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Increase Water Temperatures. Brushing and spraying remove of vegetation from the channel bed which could redcue shade and increase water temperatures. The magnitude of the impact is low because most of the vegetation affected under the program does not occur in standing water nor provide critical shading. The District does not remove bank vegetation, which provides most of the shade along creeks, as part of the program.	See Mitigation Measure *B-2 – Minimize Vegetation Removal from Channel Bottom.*	Less than significant
Wetlands, Riparian Habitat, and Rare Plants		
Facilitate Weed Colonization. Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could facilitate colonization of disturbed areas by non-native invasive weeds. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins.	See Mitigation Measure *W-3 - Maintain Biofiltering by Reseeding Channel Bottom Areas* See Mitigation Measure *B-1 – Compensatory Habitat Mitigation*	Less than significant
Fish, Aquatic Habitat, and Wildlife		
Increased Water Temperatures in Aquatic Habitats. Brushing and spraying cause the removal of vegetation in the channel bed which could increase the temperature of water present due to greater solar radiation. The higher temperatures could adversely affect the quality of aquatic habitats in the channel bottom, if present.	See Mitigation Measure *B-2 – Minimize Vegetation Removal from Channel Bottom.*	Less than significant
Effects of Sediments and Turbidity on Aquatic Organisms. The following activities could cause a temporary increase in sediment and turbidity levels: brushing, mowing, and spraying channel bed vegetation; channel shaping, desilting, bank stabilization by placing fill or grading banks, pilot channel construction, equipment movement on the channel bed, and pilot channel clearing in basins. The higher levels could adversely affect fish and aquatic organisms present in any aquatic habitats.	See Mitigation Measure *W-1 – Reduce Sedimentation.*	Less than significant
Impact of Accidental Releases on Aquatic Organisms. There is a very low potential for the accidental discharge of fuel, oil, and herbicides to a channel or debris basin during routine maintenance. Such spills may affect fish and aquatic organisms, if present.	See Mitigation Measure *W-4 - Prevent Accidental Spills and Leaks.*	

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Recreation		
Temporary Disruption of Trail and Park Use. Maintenance activities near a public trail may disrupt the use of the trail for a short period of time, and/or disrupt the use of the creek for informal recreation.	*R-1 - Minimize Impacts to Trail and Park Users*. To the extent feasible, the District shall provide temporary detours for hikers using public trails that must be closed for maintenance work. All work areas shall be marked by signs, and by flagging if necessary to protect the public from hazardous conditions. The District shall notify appropriate County and City parks departments prior to initiating maintenance work in public parks. The work area shall be visibly marked, and measures taken to prevent public entry. If feasible, work shall be restricted to off-peak park hours.	Less than significant
Reduced Beach Sand Supply. The periodic removal of sediments from debris basins contributes to the cumulative loss of beach sand supply.	See Mitigation Measure *R-2 – Disposal of Sediments at Beaches*	Less than significant
Public Health and Safety		
Excessive Herbicide Release and Exposure. Excessive application of herbicide to vegetation on the bottom of a channel or debris basin, including substantial application to the bed itself and open water, could result in increased concentrations in downstream water, which could affect the public. Excessive application of herbicide to vegetation could also adversely affect hikers using the watercourse as a trail or for recreation. This situation would arise from poor application methods or procedures, and is expected to occur rarely, if at all.	See Mitigation Measure *W- 2 – Responsible Herbicide Application*	Less than significant
Visual Impacts		
Visual Impacts in Basins. The grading of a pilot channel in the middle of a debris basin would reduce the amount of vegetation in the basin. The removal of vegetation and accumulated sediment from debris basins will periodically reduce the amount of riparian vegetation in the basin. These impacts would be minor because they are temporary and affect a very small area; the basin (i.e., visual setting) is a man-made feature; and public access to the basin and/or nearby public viewing locations is generally prohibited.	None required.	Less than significant
CLASS IV IMPACTS: BENEFICIAL IMPACTS		
Hydrology & Public Health and Safety		

TABLE S-1 (Maintenance Program)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Bank Erosion. Maintenance activities prevent bank erosion and stabilize eroding banks, thereby reducing loss or private and public property and life due to bank loss or localized flooding, and damaging changes in channel alignments.	Not applicable	Not applicable
Flooding. Maintenance activities reduce overbank flooding that could damage private and public property and life.	Not applicable	Not applicable
Recreation		
Beach Sand Supply. Maintenance activities facilitate sediment transport to the ocean where sediments supply beach sand, reducing beach sand losses.	Not applicable	Not applicable.

TABLE S-2
SUMMARY OF IMPACTS AND MITIGATION – ROUTINE MAINTENANCE PROGRAM ON THE SANTA YNEZ RIVER

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
CLASS I IMPACTS: SIGNIFICANT AND UNMITIGABLE		
None Identified		
CLASS II IMPACTS: SIGNIFICANT, BUT MITIGABLE		
Water Resources		
Equipment Leaks and Spills. Accidental leakage or spill of fuel and/or oil from the mowing equipment working within the channel can cause discharge of pollutants and degrade water quality.	***SY-H-1 - Prevent Equipment Leaks and Spills.*** Equipment fueling or maintenance shall not occur within the river channel. Spill containment and clean-up procedures for 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.	Less than significant

TABLE S-2 (Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Wetlands, Riparian Habitat, and Rare Plants		
Habitat Disturbance. Periodic disturbance to immature willow scrub due to mowing operations. Early to mid-successional woody vegetation dominated by willows in the channel bottom is periodically mowed, then allowed to re-sprout and develop for 3 to 5 years, depending upon runoff conditions. The amount of such habitat disturbed during each maintenance event will not exceed 16 acres.	*SY-B -1 – Compensatory Habitat Mitigation.* The District has already initiated long-term compensatory habitat mitigation for the periodic disturbance of riparian habitats in the river channel, establishing 18 acres of various riparian habitats along the river upstream of the project site at three permanent mitigation sites, per the requirements of the California Department of Fish and Game. The creation, maintenance, and protection of these restoration sites represents full and complete mitigation for removal of up to 16 acres of riparian habitat at any time in the future as part of the project. However, subject to available resources, to further mitigate impacts of future periodic maintenance activities on riparian habitat, the District shall remove giant reed plants by the use of herbicides from the lower Santa Ynez River (Robinson Bridge to 13th Street Bridge) and prevent the colonization of this reach of the river for the life of the maintenance project. Stands of giant reed shall be removed, as needed in each reach maintained, in an on-going and proactive program to protect the lower river from this aggressive species. The District shall consider additional habitat restoration if and when future mitigation opportunities arise along the lower river through efforts by other public agencies and private entities. ***SY-B-2 - Limits of Disturbance.*** Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers along the margins of the swaths to be cleared. No more than 16 acres of riparian woodland shall be mowed within the river channel. No clearing shall occur within 25 feet of the primary low-flow channel except when it is necessary to connect cleared swaths from one side of the low flow channel to the other side, or when it is necessary to clear a path across the low-flow channel for temporary equipment and crew access. ***SY-B-3 – Minimize Surface Disturbance.*** Disturbance of the riverbed shall be avoided to the extent feasible. The riverbed shall not be scraped, pushed, excavated, filled, or otherwise directly manipulated by equipment. Vegetative material cut from the riverbed shall be less than six feet in length. Cut vegetative material shall be allowed to fall in place, and shall not be collected, stockpiled, and/or disposed in a directed and purposeful manner. ***SY-B-4 – Training and Monitoring.*** Prior to clearing, the District biologist shall conduct a training session with construction personnel to instruct them on areas to avoid and other environmental protection measures. The District biologist shall be present at all times during clearing activities to ensure that limits of work are observed. Monitoring activities shall be recorded daily.	Less than significant

TABLE S-2 (Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Disturbance to Wetlands. Mowing operations and accessing the river channel could in advertently disturb ponds and wetlands. The latter are defined as areas dominated by perennial wetland herbs such as watercress, spikerush, cattails, and bulrushes, and do not have a substantial number or density of willow trees or large mulefat plants	See Mitigation Measure *SY-B-1 – Compensatory Habitat Mitigation* ***SY-B-5 – Avoid Ponds and Wetlands***. No clearing shall occur within 25 feet of ponds and wetlands. Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers around ponds and wetlands to be avoided.	Less than significant
Access Ramp Habitat Impacts. Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat, which in turn could adversely affect nesting, cover, and foraging habitat for riparian-dependent bird species, as well as cover for riparian amphibians, reptiles, and mammals.	***SY-B-6 – Access Ramp Restoration.*** After each mowing event, the access ramps shall be seeded with low-growing native grasses, herbs, and shrubs common to the river banks of the project reach to restore habitat after the mowing event, but without dense woody plants that would preclude it use for the next maintenance event.	Less than significant
Impacts to Rare Plants. Accessing the river channel with the crew and mower could potentially affect the regionally rare Lompoc figwort which occurs in woodland habitat along the river banks. Although this species is not known to be present at any of the existing access points, there is a remote possibility that it may be present in the future.	***SY-B-7 - Pre-Construction Biological Surveys.*** The District biologist shall conduct a biological survey no later than five (5) days prior to the clearing to confirm the limits of the work area, the flagging of environmentally sensitive areas, and to search for: (1) Lompoc figwort at access points; and (2) the western pond turtles and California red-legged frog, both of which could occur in ponds or portions of the low flow channel. The latter species would be physically captured and removed if they occur in areas where clearing or equipment access must occur. They would not be removed from ponds that are protected from clearing or from the low flow channel that is protected by a 25-foot wide buffer zone. The District biologist has the requisite permits and authorizations to handle and relocate these species from CDFG and USFWS. If the Lompoc figwort is present, the District shall modify access routes, if feasible, to avoid removal or disturbance. If the plant cannot be avoided, the District shall relocate the plant by cultivation or seeding methods to a suitable nearby site.	Less than significant
Fish, Aquatic Species, and Wildlife		
General Impacts to Wildlife. Mowing will temporarily displace wildlife that utilize unmature willow scrub, and reduce the quality of the habitat. Between mowing events, the habitat would recover and be recolonized by wildlife.	See Mitigation Measure ***SY-B-2 - Limits of Disturbance*** See Mitigation Measure ***SY-B-5 – Avoid Ponds and Wetlands*** ***SY-B-8 – Seasonal Avoidance***. Clearing shall occur during the months of October 1st to December 1st, to prevent conflicts with the riparian breeding birds, and the endangered southwestern willow flycatcher and the least Bell's vireo.	Less than significant

TABLE S-2 (Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Displace or Disturb Sensitive Wildlife. Mowing operations and accessing the river channel could displace or disturb the California red-legged frog and the southwestern pond turtle. These species are residents in ponds and wetland areas of the river channel. Impacts to these species would be avoided. The willow flycatcher, least Bell's vireo, and various regionally rare riparian breeding birds are absent from the river during the work period. Periodic mowing of immature willow scrub would not adversely affect the quality of the habitat for these species.	See Mitigation Measure *SY-B-2 - Limits of Disturbance* See Mitigation Measure *SY-B-5 – Avoid Ponds and Wetlands* See Mitigation Measure *SY-B-7 - Pre-Construction Biological Surveys.* *SY-B-8 - Monitor for Sensitive Species.* The District biologist shall monitor clearing events located at or near sensitive species locations, as determined during the pre-construction survey. The objective of the monitoring is to ensure that key habitat features or species locations are avoided, and to relocate species if they are unexpectedly encountered in a work area. The District biologist shall examine ponds and channels near the work areas for the presence of pond turtles and/or red-legged frogs; and move these species if it appears that they may be indirectly affected by the clearing activities. Results of the monitoring shall be documented in a post-maintenance report. See Mitigation Measure *SY-B-9 – Seasonal Avoidance.*	Less than significant
Disturbance to Migrating Steelhead. Mowing operations and accessing the river channel could displace or disturb steelhead if they are migrating through the project reach. The southern steelhead migrates upstream from December 1st through March 1st. Smolts migrate downstream to the lagoon or ocean during the period February through May. The mowing will be restricted to the period October through November, and as such, will avoid impacts to migrating steelhead.	See Mitigation Measure *SY-B-9 – Seasonal Avoidance*	Less than significant
Equipment Leaks and Spills, as it affects aquatic organisms and sensitive species (see Water Quality)	See Mitigation Measure *SY-H-1 – Prevent Leaks and Spills*	Less than significant

TABLE S-2 (Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
CLASS III IMPACTS – ADVERSE, BUT NOT SIGNIFICANT		
Hydrology		
Reduced Channel Resistance. Mowing in-channel vegetation may have a slight effect on velocities of low to moderate flows that would otherwise pass through this vegetation. The reduction in channel resistance could result in increase in velocities of certain flows, which in turn, could cause increased channel bed scour and downstream sedimentation. This hydraulic impact is expected to be negligible due to the small area removed, the low resistance of the vegetation being mowed, and the wide channel available for flows to spread.	None required.	Less than significant
Water Quality		
Temporary Sedimentation and Turbidity. Mowing activities would generate vegetative debris that is discharged to the riverbed and susceptible to being suspended in winter runoff. This debris could cause temporary increases in suspended solids and turbidity in downstream areas. This impact is not considered significant because the effect would be temporary, similar to natural suspended material in winter flows, and the sediments produced would be very small compared to the sediments from the entire watershed.	None required	Less than significant.
Fish, Aquatic Species, and Wildlife		
Facilitate Increased Access. The access ramps to the river could be used by unauthorized ORV users and trespassers, which could adversely affect sensitive species.	***SY-B-10 – Barriers on Access Ramps.*** Access to the riverbed shall occur from existing access points and ramps, used in previous clearing events. All access ramps to the riverbed shall be blocked after use with a barrier to prevent unauthorized entry, particularly off road vehicles and motorcycles.	Less than significant

TABLE S-2 (Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
Air Quality		
Equipment Emissions. Temporary emissions of reactive organic compounds (ROC), particulate matter, and NOx associated with the mower and chain saws.	*SY-A-1 – Reduce Emissions*. Implement the following Santa Barbara County APCD-approved measures for each piece of heavy-duty diesel construction equipment to minimize NO_x emissions: (1) The engine size of construction equipment shall be the minimum practical size; (2) Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) should be utilized wherever feasible; (3) The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time; (4) Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines; (5) Catalytic converters shall be installed on gasoline-powered equipment, if feasible; (6) Diesel catalytic converters shall be installed, if available; and (7) Diesel powered equipment should be replaced by electrical equipment, whenever feasible.	Less than significant
Fugitive Dust Emissions. Temporary emissions of fugitive dust (particulate matter) due to mower operations.	No feasible measures can be employed to reduce unavoidable dust created during mowing operations.	Less than significant
Noise		
Mower Noise. Mowing and chain saw operations would temporarily increase the ambient noise levels in adjacent land uses. However, there are no noise-sensitive receptors in proximity to the project site. This impact would be limited to weekdays between 7 AM and 5 PM, with a limited duration of several days at any one location.	None required	Less than significant
Visual Impacts		
Visual Impacts of Mowing. Mowing would increase the open areas in the river channel, exposing open sandy floodplain. This impact would be minor because only a small proportion of the channel would be affected, dense woodland and mature trees on the banks would be avoided, and public viewing locations of the river channel are not present.	None required.	Less than significant

TABLE S-2 (Santa Ynez River)

DESCRIPTION OF IMPACT BY ISSUE AREA	MITIGATION MEASURES	RESIDUAL IMPACT LEVEL
CLASS IV IMPACTS: BENEFICIAL IMPACTS		
Hydrology		
Prevent Bank Erosion. Periodic mowing will prevent debris dams and encourage moderate flows to remain in the center of the channel, thereby potentially reducing the frequency of impingement on banks that could cause bank erosion and loss of property and life due to bank loss or localized flooding.	Not applicable	Not applicable
Flooding. Mowing will maintain channel capacity and reduce the frequency of overbank flooding that could damage private and public property and life.	Not applicable	Not applicable

1.0 INTRODUCTION

1.1 OVERVIEW OF DISTRICT

The Santa Barbara County Flood Control and Water Conservation District (District) was established in 1955 by the State Legislature and vested with certain authorities, as stipulated in the California Water Code. The general purpose of a flood control district is to "...control the flood and storm waters of said district...to conserve such waters for beneficial and useful purposes...and to protect from such flood or storm waters watercourses, watersheds, harbors, public highways, life, and property in said district (Section 74-4)." Since its inception, the District has sought to provide reasonable flood protection throughout the County in the following manner: assist in floodplain regulation; construct flood control facilities; acquire federal funds and assistance for capital projects whenever possible; assist the County's Planning & Development Department regarding flood control issues; and maintain capacity in key watercourses to protect life and property.

Prior to the formation of the District, flood control projects were appropriated from the General Fund and were limited to protection of County facilities and properties. After the devastating floods on the South Coast in 1952, the Board of Supervisors approved the formation of the District to address the following needs: (1) major flood control and channel work along the Santa Maria and Santa Ynez rivers; (2) maintenance clearing of creeks, particularly in urbanized areas; and (3) control of flows that pass through urbanized areas and that are discharged from built up areas. The Board established budgets for three programs (Capital Outlay, Annual Maintenance, and Reserves) to complete capital projects and conduct maintenance on 45 creeks and rivers in the County. Finally, the Board initiated actions to form the District and flood zones to be supported through property tax assessments.

The District is governed by the Board of Supervisors, acting as the Board of Directors for the District. The District is funded through property tax assessments and benefit assessments. It is managed by a Director who reports to the Public Works Department Director.

There are ten flood zones in the District, as listed below in Table 1-1 along with examples of key rivers and creeks in each zone. Flood control activities in each zone are funded from assessments in that zone.

TABLE 1-1
FLOOD ZONES

Flood Zone	Examples of Key Rivers, Creeks, or Drainages
South Coast	Carpinteria, Montecito, San Ysidro, Mission, Arroyo Burro, San Jose, Atascadero, Maria Ygnacio, Glen Annie creeks, etc.
Santa Ynez	Alamo Pintado and Zaca creeks
Lompoc Valley	Santa Ynez River, Rodeo-San Pasqual Channel
City of Lompoc	San Miguelito Creek, Santa Ynez River
Los Alamos	San Antonio Creek, numerous small ditches
Orcutt	Orcutt-Solomon Creek, Pine Canyon Creek
Bradley	Bradley Canyon Channel, Santa Maria River, numerous small ditches
Santa Maria River Levee	Santa Maria River levee in both Santa Barbara and San Luis Obispo counties
Santa Maria	Bradley Ditch other numerous small ditches
Guadalupe	Green Canyon Channel, Santa Maria River, Orcutt-Solomon Creek

There are several major flood control capital projects in the County completed by the federal government, which are now the responsibility of the District to maintain, for example:

- The Santa Maria Valley Levee Project was comnleted in 1963. It includes a 17-mile long levee on the south side of the river and a shorter levee on the north side; a cleared channel from Fugler Point to the ocean, and two miles of channels and levees from Bradley Canyon to the river.

- The South Coast Post-Fire Emergency Work was completed by the Corps of Engineers after the devastating Coyote Fire in 1964. Sediment was removed and channels were improved along nine creeks from Summerland to eastern Goleta, and six debris basins were constructed.

- Romero Fire emergency work by the Corps of Engineers in 1971 in which sediment was removed and debris basins constructed from Gobernador Creek to Montecito Creek.

- The Santa Ynez Flood Protection Project was completed in the 1950s and includes flood control channels along Purisima and Cebada Canyon creeks, Hoag and Santa Rita creeks, San Miguelito Canyon Creek, and San Pasqual and Rodeo Canyon creeks.

- The Carpinteria Valley Watershed Project was initiated in 1971. Examples of projects include the Santa Monica Debris Basin and Creek Improvements, and five debris basins and channel improvements on Franklin Creek.

In addition to the above specific projects, the District maintains numerous smaller capital projects throughout the County and in municipalities that were constructed and funded by the District, including several debris basins (e.g., Maria Ygnacio Creek Debris Basins), flood control channels, storm drain facilities, and grade control structures. Maintenance of culverts and bridges associated with County roads (including within municipalities) is the responsibility of the County Public Works Department, Roads Division. Similarly, the maintenance of drainage facilities along state highways in the County is the responsibility of Caltrans.

The District conducts maintenance of most regional flood control channels, drainage facilities, and creeks within the boundaries of municipalities (Santa Barbara, Carpinteria, Guadalupe, Lompoc, and Santa Maria) except for flood control facilities constructed by the cities or drainages that are otherwise managed by the cities. For example, the District conducts channel maintenance of Mission and Sycamore creeks within the City of Santa Barbara. However, the District does not maintain the mouths of these creeks, which are located at city beaches. The District maintains portions of Tecolotito and Carneros creeks where they enter the Santa Barbara Municipal Airport (a City owned facility), but does not maintain drainage facilities within the Airport.

1.2 CURRENT ROUTINE MAINTENANCE PROGRAM

Between 1955 and 1987, when the District was formed, routine maintenance activities were conducted without formal environmental review. In 1988, the District initiated the preparation of a Program EIR for County-wide routine creek and debris basin maintenance activities in response to concerns by the public about impacts to riparian and wetland habitats, sensitive species, and water quality. A Draft EIR was issued for public review in 1990 and was certified in 1991. A final routine Maintenance Program was approved by the Board in April 1992.

The Maintenance Program includes various desilting, channel shaping, herbicide spraying, and channel clearing activities in most creeks and streams in the urbanized and highly developed agricultural areas of the County. The Maintenance Program is implemented on an annual basis. District staff conducts an engineering analysis to determine which reaches require routine maintenance, and field investigations to identify impacts and appropriate mitigation. CEQA documentation is then prepared. The latter consists of documenting impacts and mitigation of each maintenance activity and confirming that all planned activities are consistent with the adopted Program EIR.

The District has been conducting routine creek maintenance pursuant to that program since 1992. Each year, the District prepares an Annual Routine Maintenance Plan, conducts public workshops, and completes a CEQA environmental review for planned maintenance work. The environmental review involves the preparation of: (1) an Addendum to the Program EIR for specific maintenance actions along individual creeks; or (2) a Categorical Exemption for minor actions at other creeks or man-made ditches (i.e., maintenance of existing facilities) in which there is no reasonable possibility that the activity will have a significant effect on the environment (CEQA Categorical Exemption 15301 – Existing Facilities). The Annual Routine Maintenance Plan includes a description of the need for the maintenance work, the work to be performed, the presence of sensitive biological resources, impacts of the activities on biological resources, standard maintenance practices to reduce impacts, and restoration measures.

Debris basin maintenance occurs on an as-needed basis, typically after severe storm events and wildfires, and is not included in the Annual Routine Maintenance Plan. A Debris Basin Maintenance Plan and set of CEQA Addenda to the Program EIR was prepared by the District in 1996 to address maintenance activities in 16 debris basins on the South Coast. The Plan describes the environmental settings in the basins, the proposed maintenance activities and impacts, and environmental protection measures to be used by the District. No additional CEQA Addenda are required for debris basin maintenance.

Several maintenance activities are not included in the current maintenance program described in the Annual Plans (and associated 1992 Program EIR) or in the Debris Basin Maintenance Plan, as summarized below:

- **Lower Atascadero Creek Channel Maintenance Project.** This project occurs along a two-mile-long reach of Atascadero Creek from its confluence with Hospital Creek to the check structure at the end of Ward Drive. It was approved in 1994 after completion of an EIR. The project involves annual vegetation and sediment removal. The impacts of the maintenance activities on southern steelhead and water quality were addressed in a Supplemental EIR in 2000.

- **Goleta Slough Maintenance Project.** This project was implemented in 1994 after completion of an EIR. It consists of periodic sediment removal from the major creeks discharging to the ocean at Goleta Beach, including Tecolotito, Carneros, San Jose, San Pedro, and Atascadero creeks. The impacts of the maintenance activities on southern steelhead and water quality were addressed in a Supplemental EIR in 2000.

- **Montecito Creek Debris Basin.** This project is planned for completion in late 2001. Maintenance of the basin will be included in the updated Routine Maintenance Program after construction is complete and the conditions in the basin are known.

- **Lower Santa Ynez River Maintenance Project.** Separate maintenance projects were approved and implemented in 1992, 1992/93 and 1997/98. The District wishes to include a long-term project in the updated Maintenance Program, as described in Section 3.0.

- **Lower Mission Creek Flood Control Project.** A separate maintenance program has been developed for this project which will involve channel improvements along the lower creek within the City of Santa Barbara. A separate EIR/EIS was prepared by the City in coordination with the District.

1.3 LOWER SANTA YNEZ RIVER MAINTENANCE PROJECT

Since the 1950s, the District has periodically cleared portions of a 4.5-mile long reach of the lower Santa Ynez River that is prone to flooding. The reach extends from the Lompoc Wastewater Treatment Plant to the 13th Street Bridge on Vandenberg Air Force Base (VAFB), as shown on Figure 2. The riverbed is located on both private and federal lands, the latter including VAFB and the Lompoc Federal Penitentiary. In January 1992, the District cleared portions of the river along this reach with a tracked mower under emergency conditions due to the threat of imminent flooding. A 25-100-foot-wide swath of vegetation was cleared at that time.

In late 1992, the District completed a Final EIR for a one-time clearing of vegetation in a 100-foot wide swath in the middle of the riverbed along the entire reach. The Board approved the project and it was completed in December 1992 and January 1993.

In December 1997, the District completed an Environmental Assessment (EA) to maintain the 100-foot wide corridor in the riverbed that was created in 1992/1993. The EA was prepared on behalf of VAFB pursuant to the National Environmental Policy Act (NEPA). The CEQA environmental review for the project was accomplished by incorporating the results of 1992 Final EIR by reference, and adopting new CEQA Findings for the 1997 version of the project. The Board approved the project and adopted and emergency CEQA exemption in 1997, while VAFB adopted a Finding of No Significant Impacts (FONSI) in December 1997. The clearing was completed in January 1998.

1.4 NEED FOR AN UPDATED MAINTENANCE PROGRAM

The Maintenance Program initiated in 1992 under the 1991 Final Program EIR was been successfully implemented for nine years. The District's program is based on careful planning to ensure that only necessary maintenance is conducted, field practices minimize environmental impacts, and environmental mitigation and restoration are included. The program is considered one of the most environmentally sensitive programs in California amongst flood control agencies.

The District has determined that the Maintenance Program needs to be updated, and as such, a new CEQA analysis will be required to address any modifications to the program. The primary reasons for updating the Maintenance Program are described below.

- <u>Include new information about threatened and endangered species</u>. Since the initiation of the Maintenance Program in 1992, several species that reside in the County have been designated as endangered or threatened by the federal government, including the tidewater goby, western snowy plover, California red-legged frog, southern steelhead trout, southwestern arroyo toad, and California tiger salamander. The District wishes to include specific environmental protection measures for these species in the Maintenance Program to avoid future conflicts. The tidewater goby, snowy plover, and steelhead were not addressed in the 1991 Final Program EIR. Impacts to the other listed species were addressed in a cursory manner.

- <u>Address water quality impacts in a more sophisticated manner</u>. In the past several years, there has been an increased awareness of human-induced pollution in the South Coast watersheds, as exhibited by high coliform levels at local beaches. In addition, there is a greater recognition of the effects of wetlands and riparian corridors in reducing pollutant loading through natural processes. The 1991 Final Program EIR only addressed water quality impacts related to sediments and herbicides, and did not address impacts to "biofiltering" effects of in-stream vegetation due to maintenance activities.

- <u>**Consider new analytic tools for assessing channel capacity and geomorphology**</u>. In the past 10 years, there has been a growing interest in the field of fluvial geomorphology – the science of the interaction between watershed characteristics, flows, and channel geometry. Geomorphological concepts are being applied to river and creek restoration projects with greater frequency, particularly the concept of the "bankful capacity" and sediment transport equilibrium. The previous Program EIR did not conduct a rigorous analysis of the applicability of these concepts to the maintenance program. The District is interested in determining if such concepts and associated analytic tools will increase the efficiency and effectiveness of the maintenance planning and implementation program.

- <u>**Include the Lower Santa Ynez River maintenance into the annual program**</u>. The District is interested in including the maintenance activities along the Lower Santa Ynez River into the Maintenance Program for the sake of efficiency and consistency.

- <u>**Improve the standard maintenance practices**</u>. The current Maintenance Program includes 77 Standard Maintenance Practices (SMPs) that were developed based on the 1991 Final Program EIR and input from the Interagency and Public Advisory Committee (IPAC). While these practices have proven to be very effective in minimizing and mitigating environmental impacts, there is an interest in modifying the practices to consolidate many individual practices, reword the description of certain practices, and re-organize them in order to increase the efficiency when referencing the practices in annual maintenance plans, and to reduce ambiguity in certain measures. In addition, the effectiveness of the habitat restoration measures will be assessed in the updated Program EIR, including an evaluation of the use of the function-based methods for assessing riparian habitat impacts and determining mitigation.

- <u>**Improve the format and organization of the Program EIR**</u>. The District would like to re-organize the Program EIR to be consistent with the resource names or descriptors used by other County departments in order to establish consistency with CEQA documents and findings by other County departments. The 1991 Final Program EIR utilized a unique organization and resource terms or titles that has not proven effective when conducting subsequent environmental review under the Program EIR, or when using it for other permits.

- <u>**Include a variety of bank and grade stabilization measures in the program**</u>. In the past 5 to 10 years, there has been a tremendous increase in the development and application of environmentally sensitive slope stabilization methods. "Bio-technical" methods emphasize the use of plants and biodegradable materials rather than concrete and rip-rip. Routine maintenance may require limited slope stabilization. The District is interested in the feasibility and applicability of such methods within the context of the Maintenance Program.

- Assess the Impacts of the Los Carneros Mitigation Bank. The District recently proposed a 28-acre riparian and wetland mitigation bank at Lake Los Carneros, a County park in Goleta. Credits accrued from restoring habitats at the site will be used for mitigation for maintenance activities, and possibly for future District capital projects.

1.5 SCOPE OF THE UPDATED PROGRAM EIR AND MAINTENANCE PROGRAM

A new CEQA environmental review is required because the District is proposing to modify the current Maintenance Program, and such modifications are not exempt from CEQA. Modifications may include (among others) modified maintenance practices, inclusion of the lower Santa Ynez River, and refinements of environmental mitigation measures. The appropriate document for the proposed action is a Subsequent Program EIR, as defined in CEQA Guidelines Section 15162, because there has been a change in circumstances under which the project is being implemented (i.e., new endangered species in the region), and because there are substantial changes in the project (e.g., inclusion of the Santa Ynez River Project). The new Program EIR will utilize relevant analyses from the previous Program EIR. However, the new EIR will include mostly new analyses based on current environmental conditions, and on observations from the past nine years of the maintenance program. Maintenance alternatives to be addressed in the Program EIR are listed below:

1. No Maintenance Alternative – the condition in which no maintenance is implemented

2. Traditional Maintenance – pre-1992 channel clearing with little environmental protection included.

3. Current Maintenance (No Project Alternative) – the program approved in 1992 which includes environmental protection through the use of SMPs and annual maintenance plans and their associated CEQA compliance. This alternative represents the baseline environmental conditions for the EIR impact assessment.

4. Proposed Project (Updated Maintenance) – current practices with the inclusion of the Santa Ynez River, refined or improved SMPs (designated as mitigation measures), modified habitat restoration practices, use of the Los Carneros Mitigation Bank, inclusion of new grade stabilizers as part of the maintenance program, the potential use of new analytic tools for assessing channel conditions, environmental protection for newly listed species, and possible other modified assessment and/or mitigation approaches designed to improve the effectiveness of maintenance and mitigation. This alternative represents the proposed project.

A separate set of alternatives is included in the Program EIR for the Santa Ynez River maintenance project, as listed below:

1. No Project Alternative
2. Minimum Mowing Alternative - 8 acres of mowing with a goal of a 50-foot wide swath
3. Minor Mowing Alternative - 12 acres of mowing with a goal of a 75-foot wide swath
4. Proposed Mowing Alternative - 16 acres of mowing with a goal of a 100-foot wide swath
5. Original Mowing Alternative - 125 acres of mowing with a 300-foot wide mowed zone

2.0 CURRENT MAINTENANCE PROGRAM

2.1 ORIGIN OF THE PROGRAM

The Maintenance Program was developed after many years of environmental study and coordination with the public, environmental groups, and permitting agencies. In 1987, the Board directed the District staff to prepare a Program EIR on routine maintenance activities to: "... *provide a systematic approach to reviewing future flood control activities...offer feasible mitigation and/or alternative maintenance techniques which provide adequate protection against flood damage in the least environmentally damaging way.*" In February 1988, a Notice of Preparation was issued for the Program EIR. In May 1990, a draft Program EIR was issued for public review. A final Program EIR was issued in March 1991, which identified numerous significant environmental impacts and identified an Environmentally Superior Alternative. The latter consisted of numerous mitigation measures (called Standard Maintenance Practices) to avoid or reduce specific impacts to botanical resources, wildlife, water quality, stream geomorphology, cultural resources, and aesthetics.

In June 1991, the Board convened an Interagency and Public Advisory Committee (IPAC) to work with the District to develop a revised Maintenance Program, based on the EIR's Environmentally Superior Alternative. The IPAC met on seven occasions and developed, through a consensus process, a revised list of Standard Maintenance Practices (SMPs) and an annual planning and project approval process. Together, these products represented the revised Environmentally Superior Alternative that was recommended to the Board. The project was ultimately approved in March 1992 when an Addendum to the 1991 Program EIR was completed.

2.2 OBJECTIVES

The objectives of the routine maintenance program are to maintain the capacity of key watercourses in the County to preserve existing conveyance capacity and prevent the accumulation of obstructing vegetation and sediments that could increase existing flood hazards that could then result in damage to life, and public property and infrastructure. The extent and frequency of maintenance are dependent upon many factors including the availability of funds from individual flood zones, the degree of flood hazard, and the environmental impacts of the maintenance actions. Maintenance practices are used that minimize environmental impacts to natural habitats, water quality, sensitive species, and natural fluvial processes.

2.3 ROUTINE CREEK MAINTENANCE

Maintenance activities are completed on numerous drainages in the County each summer and fall, prior to the winter. There are six primary types of activities involved in the program, as described below. These actions are applied individually or in combination, depending upon the maintenance requirements of the affected drainage. A description of these actions is provided below.

2.3.1 Selective Brushing

Brushing is the removal of vegetation in the drainage that could obstruct flows. Brushing is conducted by hand crews using chainsaws or manual "loppers." Vegetation on the bed of the channel is removed if it is determined to represent a potential obstruction to flows, or could trap sediments. Plant species typically removed include mulefat, willow, sycamore, and cottonwood seedlings/saplings that have colonized the channel bed. In some North County drainages, large clumps of cattails and bulrushes may also be removed. The vegetation is removed because it has sufficient mass to reduce the channel capacity by increasing roughness; capture sediments at its base and thereby reduce channel capacity; and/or "snag" floating debris in storm flows and create a "debris dam." Woody vegetation rooted on the banks (e.g., willows) is trimmed up to a height of six feet if it overhangs the center of the channel and could fall into the channel or capture floating debris. Vegetation that does not impede flows or is not expected to create a future obstruction is not removed. Brushed vegetation is cut up into small pieces (less than four feet in length) and either left on the banks or channel bed, chipped at the site and spread on the banks, or removed from the drainage by a winch truck. Large non-native plants are also removed, such as giant reed, german ivy, castor bean, ironweed, and fennel. A crew of two to four District personnel conducts the brushing.

2.3.2 Herbicide Spraying

Herbicide is applied to patches of obstructive vegetation that reduces channel capacity by its mass, or is likely to cause a build up of sediment in the future. Foliage of the plants is sprayed with Aquamaster™ (formerly Rodeo™) or Round-up™ (1% concentration), which are widely used EPA approved herbicides. Herbicide treatment typically occurs in the fall when the water levels in creeks have decreased such that crews can walk in the channel without difficulty. Treated areas may be sprayed again in May or June of the following year to ensure that the affected vegetation does not recover. Herbicide application is very patchy. That is, only clumps of plants are sprayed. Most low-growing plants such as grasses and prostrate herbs near the channel surface are not affected. Herbicides are often applied to vegetation stumps in areas that have been brushed. Herbicides are typically applied to non-native plants in the channel that could obstruct flows or out-compete more desirable native plants. Typical weeds that are sprayed include giant reed, german ivy, ironweed, and castor bean.

Herbicides are applied by crews using a spray nozzle and a backpack unit. Individual plants and clumps of plants are sprayed with a hand-held spray wand. Only vegetative material is sprayed; herbicide is not applied to open water. In areas with extensive treatment, herbicides may be applied by a field crew working in the channel bed using a long hose attached to a spray truck located along the drainage. Most herbicide applications to man-altered channels in the North County are conducted using a boom truck.

The active ingredient in Aquamaster™ and Round-up™ is glyphosate, which inhibits the synthesis of amino acids in plants, and therefore, inhibits cell growth and reproduction. They are non-restricted herbicides and do not require a certified applicator, although District field supervisors are all certified applicators. Aquamaster™ is applied with a surfactant to enhance their effectiveness by spreading and retaining the herbicide on the plant surface, and by promoting absorption. Agri-Dex™ is a blend of petroleum-based oils (i.e., paraffin) and surfactants. The surfactants reduce surface tension on the leaf surface. All state and federal requirements to ensure public safety and environmental protection are observed, as well as the District's Standard Maintenance Practices related to herbicide treatment.

Aquamaster™ is used when there is open water in proximity of the plants to be treated. Aquamaster™ is registered for use on aquatic plants in open water conditions and in aquatic settings (EPA Registration No. 524-343; see also EPA's Material Safety Data Sheet (MSDS) for the product). It can be applied by aerial application. It is non-toxic to fish and aquatic organisms at recommended application rates.

2.3.3 Channel Shaping and Bank Stabilization

Channel shaping consists of earthwork on the channel bed to redirect flows that are undermining banks and causing bank erosion or failure (that can lead to channel obstructions). Sandbars that redirect flows are typically lowered and spread out across the channel bed, filling low areas that have been scoured. Channel shaping is usually conducted with a D-5 model dozer with a 10- to 12-foot wide blade. The dozer accesses the channel bottom from existing ramps along maintained creeks. If a ramp is not located in proximity to the site, the District will grade a temporary 12-foot-wide ramp at the channel shaping site. It should be noted that the District rarely has a need to construct new ramps since adequate access has been established to maintained creeks over the years.

Actively eroding banks that threaten public property and infrastructure are stabilized by the District using a variety of methods such as ungrouted or grouted rip-rap, pipe and wire revetment, concrete sackwalls, and native vegetation plantings (primarily willows). Rip-rap has been used for eroding banks where flows are directed at the bank. Concrete sackwalls are an option, but have not been used recently. On some banks, alluvium from the adjacent banks or in the channel will be placed in the eroded area. If feasible, willow cuttings (and other native plants) are planted in conjunction with the bank protection to provide a root system to stabilize the banks. The establishment of native plants for slope stabilization also provides habitat to compensate for maintenance impacts elsewhere because new riparian habitat is being created. Revegetation methods for stabilizing eroding banks are described below in Section 2.6.

2.3.4 Bank Protection Repair (Unlined Channels)

Bank protection that is damaged from flood flows may be repaired or replaced, including grouted and ungrouted rip-rap, pipe and wire revetment, and concrete sack walls. In general, the same type of bank protection is used for the repair or replacement, and the length of bank protection is similar to the original condition. Various types of heavy equipment are used, including loaders, excavators, concrete trucks, cranes, Gradalls™, and dump trucks. Work is typically conducted from both the top of the banks and the channel, depending upon the site conditions. The amount of earthwork depends on the length of the bank protection to repair and depth of the erosion. If feasible, willow cuttings and other native species are planted in conjunction with the repair of bank protection. For example, soil is often placed on top of ungrouted rip rap with willow cuttings. Revegetation methods associated with bank protection repair are described below in Section 2.6.

In addition to the repair of bank protection along earthen channels, the District also maintains and repairs (as necessary) concrete grade control structures that are located in the channel bottom. The District also may need to repair the man-made levee along the Santa Maria River by placing fill in eroded areas or constructing protective groins. The District also periodically removes old pipe and wire revetment that is no longer functional.

2.3.5 Maintenance and Repair of Lined Channels

The following maintenance activities occur in concrete lined channels on an as-needed basis: (1) clean weep holes and replace screens; (2) clean and repair access ladders; (3) trim vegetation hanging over the tops of the lined channel walls; (4) clean splitter walls of debris and plants; (5) repair fences and gates along access roads; (6) repair or replace damaged concrete sections; (7) remove accumulated sediment from the channel bottom and dispose off site using a loader and dump truck; and (8) repave, weed, or grade service roads above the lining. Most of these activities are exempt from CEQA because they represent maintenance of existing facilities, and do not involve any possibility of a significant impact to the environment. These activities are identified in the Annual Plan for administrative purposes, and are not addressed in annual Addenda to the original Program EIR. They are included in the new Program EIR for information purposes only.

2.3.6 Channel Desilting

Desilting is required in areas where sediments (including rocks and cobbles) have accumulated such that the channel capacity has been significantly reduced, or when sedimentation could cause imminent bank erosion and/or overbank flooding. At most sites, sediments are removed from the channel bottom using a Gradall™ working from the top of the banks. In some dry drainages, a D-5 or D-7 Caterpiller will push sediments into a pile where it will be removed by a loader or Gradall™. Sediments are placed in dump trucks on the banks and moved offsite. In agricultural areas, the sediments may be spread for the farmer to plow into the field.

If water is present, work is performed by a Gradall™ or excavator on top of the banks, and sediments will be left on the access road on top of the banks for several days for dewatering. Dozers and loaders may also conduct limited desilting in wet channels, depending upon site conditions. On occasion, dredging may be accomplished using a dragline or clamshell. After dredging in North County drainages, the channel bottom is typically graded to a smooth surface and a pilot channel is established to direct flows through the affected reach. In the South Coast drainages where the substrate has more rock and cobble, the channel bottom is roughened after desilting to hasten the channel bed armoring process.

The amount of sediment removed under the routine maintenance program varies from site to site, but typically ranges from 500 to 10,000 cubic yards. In contrast, the amount of sediment removed from the sediment basins in the Goleta Slough maintenance program varies from 40,000 to 200,000 cubic yards per dredging event.

The District may infrequently disc a channel bottom to knock down emerging plants and to loosen accumulated sediments for transport during the subsequent winter, such as along lower San Pedro Creek.

2.3.7 Summary of Watercourses Maintained

The major creeks, drainages, flood control channels, and other watercourses that have been maintained during the past nine years under the current Maintenance Program and that are not exempt from CEQA are listed in Table 2-1 and shown on Figures 1 through 5 (Appendix A). Other drainages may be maintained in the future under the Routine Maintenance Program on an as-needed basis which are not listed below or shown on the figures.

TABLE 2-1
EXAMPLES OF NON-EXEMPT CREEKS INCLUDED IN THE PROGRAM

Creeks (Not Exempt from CEQA)	Reach Where Maintenance has Occurred in the Past, and Where it May Likely Occur in the Future*
South Coast - Carpinteria/Summerland Area	
Carpinteria Creek	Ocean upstream to confluence with Gobernador Ck (Casitas Pass Rd)
Gobernador Creek	Confluence with Carp. Ck to debris basin
Upper Franklin Creek (West Branch)	Various locations
Arroyo Paredon	Ocean upstream to 2,000 ft upstream of Foothill Rd
Lower Toro Cyn Creek	Hwy 101 upstream to confluence of N and E tribs
Toro Cyn Creek - East Branch	E. Valley Rd upstream to debris basin
Toro Cyn Creek - West Branch	E. Valley Rd upstream to debris basin
Lagunitas Channel	500' upstream of Via Real to 1,000 feet downstream of Carpinteria Ave
South Coast - Montecito Area	
Romero Creek	250 ft downstream of Sheffield Dr and 3,000 ft upstream
Picay Creek	E. Valley Rd downstream to confluence with Romero Ck
Buena Vista Creek	Bella Vista Dr to confluence with Romero Ck
San Ysidro Creek	Near ocean to debris basin
Oak Creek	2,000 feet upstream of E. Valley Rd to near ocean
Montecito/Cold Springs Creek	Cold Springs Rd to near ocean
South Coast - Santa Barbara Area	
Sycamore Creek	W. Branch (along Stanwood Dr) to confluence w/ mainstem; Cabrillo Blvd to confluence
Old Mission Creek	San Andreas Street to UPRR
Mission Creek, including Rattlesnake Cyn	Highway 101 to debris basin
Arroyo Burro Creek	Cliff Dr to Foothill Rd; Las Positas Ck
San Roque Creek	YMCA to debris basin

TABLE 2-1 (Continued)

Creeks (Not Exempt from CEQA)	Reach Where Maintenance has Occurred in the Past, and Where it May Likely Occur in the Future*
South Coast - La Cumbre Area	
Upper Atascadero Creek	upstream of confluence with Hospital Ck to 500 ft upstream of Hwy 101; Route 154 upstream 2,500 ft
Cieneguitas Creek	upstream of confluence with Atascadero Ck to Hwy 101; Route 154 upstream 2,000 ft
Upper Hospital Creek	Highway 101 upstream to Cathedral Oaks Rd
South Coast - Goleta and Airport Areas	
Maria Ygnacio Creek	Upstream of confluence with Atascadero Ck to main debris basin
San Antonio Creek	Debris basin downstream to Maria Ygnacio Ck
San Jose Creek	South St upstream to Vineyard Rd
Old San Jose Creek	Hollister Rd to San Jose Ck confluence
Las Vegas Creek	Calle Real to Vineyard Rd
San Pedro Creek	Mathews St upstream to Cathedral Oaks Rd
Carneros Creek	Hollister Ave upstream to Carneros Rd
Tecolotito Creek	Hollister Ave upstream to 3,000 ft upstream of Cathedral Oaks Rd
South Coast - Ellwood/Winchester/Refugio Areas	
El Encanto Creek	Ocean Meadows G.C. upstream to Phelps Rd
East F. Devereux Creek	Coronado Dr to Newport Dr
Devereux Creek	Various locations
Ellwood Creek	Confluence with Winchester Canyon Creek upstream 1,000 ft
Winchester Cyn Creek	Calle Real to 1,000 feet upstream of Winchester Canyon Rd
Tecolote Creek	Highway 101 upstream 8,000 ft
Canada de la Pila	Highway 101 upstream 1,000 ft
Refugio Creek	Highway 101 upstream 1,000 ft
North County - Santa Maria/Orcutt Area	
Santa Maria River	County line 2 mi wast of Guadalupe upstream to Fugler Pt
Orcutt-Solomon Creek	Stillwell Rd downstream to Santa Maria River
Pine Cyn Creek	500 ft downstream of Hwy 135, and 1,000 ft upstream
Corralitos Creek	Confluence with Orcutt-Solomon Ck upstream 2,000 ft
Unit Two Ditch**	W. Main St to SMRV levee
Unit Two Tailwater Ditch**	1,200 ft downstream of Blosser Rd to 2.5 mi upstream
Blosser Extension**	SMRV levee east 0.5 mi, then south 0.5 mi
Green Canyon Ditch**	Main St to confluence with Orcutt-Solomon Ck
Upper Green Ditch**	1 mi upstream of Hwy 101, downstream to confluence with Orcutt-Solomon Ck
Upper Upper Green Canyon Ditch*	Main St School to confluence with Upper Green Cyn
East Ditch*	0.5 mi south of SMRV levee
Guadalupe Tailwater Ditch*	0.5 mi downstream of Blosser Rd for about 3 mi

TABLE 2-1 (Continued)

Creeks (Not Exempt from CEQA)	Reach Where Maintenance has Occurred in the Past, and Where it May Likely Occur in the Future*
North County - Lompoc Area	
Upper Miguelito Creek	Various locations
North County - Los Alamos Valley	
San Antonio Creek	8,000 ft upstream of Hwy 101, downstream to San Antonio Rd
Harris Creek	San Antonio Rd upstream 3 miles
North County - Buellton Area	
Santa Rosa Creek	Various locations
Lower Zaca Creek	Confluence with Santa Ynez River upstream to 1,000 ft upstream of Hwy 101
North County - Solvang/Santa Ynez	
Adobe Canyon Creek	1,000 ft along Fredensborg Canyon Rd
Alamo Pintado Creek	Route 154 downstream to 5,000 downstream of Hwy 246 (Alisal G.C.)
Note: Other creeks and drainages in the County may be subject to routine maintenance in the future on an as-needed basis, and are not listed above. In addition, maintenance may occur at locations not listed above, as needed.* * Portions of these man-made ditches are no longer considered exempt due to the presence of red-legged frog, or potential occurrence of this species.*	

Drainages included in the current Maintenance Program that are exempt from CEQA are listed in Table 2-2 (South Coast drainages) and Table 2-3 (North County drainages CEQA). Other exempt drainages not included in these tables may be subject to future maintenance on an as-needed basis.

TABLE 2-2
LINED CHANNELS MAINTAINED ON THE SOUTH COAST
(EXEMPT FROM CEQA)

Flood Control Channel	Maintained Reach
Arroyo Burro Creek	Confluence with San Roque Ck d/s to Modoc Rd
Atascadero Creek (upper)	Confluence with Hospital Ck to Arroyo Rd
Carpinteria HS Ditch	From Foothill Rd upstream 500 feet
Cieneguitas Creek	Southern Pacific RR tracks to Modoc Rd
Derbiano Drain	Confluence with Hospital Ck upstream 100 feet
El Encanto Drain	Hollister Ave to Phelps Rd
Encino Drain	Cathedral Oaks Rd to Berkeley Rd
Franklin Creek	Upstream of Casitas Pass Rd to Carpinteria Marsh
Hog Canyon Channel	Confluence with Carpinteria Ck upstream 2000 feet
Hospital Creek Channel	Hollister Rd to confluence with Atascadero Ck
Las Positas Creek	Veronica Springs Rd upstream 1000 feet
Los Carneros Creek	Los Carneros Rd downstream to Hollister Ave
Mission Creek	Canon Perdido to Valerio; downstream of Highway 101 to Yanonali St
Montecito Creek	Hot Springs Rd downstream 1000 feet
Oak Creek Ditch	San Ysidro Rd to East Valley Rd
Pace Park Drain?	Between Highway 101 and Pace Park development
Robin Hill Drain	Hollister Ave upstream 500 feet
Romero Creek	Fernald Point Rd to near ocean
San Jose Creek	Hollister Ave to Goleta Slough
San Pedro Creek	Calle Real upstream 600 feet
Sandpiper Drain	Via Real upstream 500 feet
Santa Monica Creek Ditch	Debris Basin to Carpinteria Marsh
Serenidad Drain	Confluence with Las Vegas Ck upstream 350 feet
St Vincent's Drain	Calle Real to confluence with Cieneguitas Ck
Via Regina Channel	300 ft along Via Regina

TABLE 2-3
LINED CHANNELS OR EARTHEN DITCHES MAINTAINED IN THE NORTH COUNTY (EXEMPT FROM CEQA)*

Watercourse	Earthen (E) or Concrete (C) or Asphalt (A)
Santa Maria/Guadalupe Area	
California St Ditch	C
Crescent Ave Ditch	C
Toppie Reese Ditch	C
Industrial Parkway Ditch	E
Santa Maria Airport Ditch	C and E
Bradley Ditch	C and E
Thornberg Ditch	E
Sonya St Ditch	E
Tanglewood Ditch	E
Battles Union Oil Ditch	E
Adams Ditch	E
Diaz Ditch	E
Dutra Ditch	E
Kaiser Ditch	E
Lake Marie Ditch	E
Texaco Ditch	E
Bradley Channel Ditch	E
Santa Maria River (levee maint.)	E
Guadalupe City Ditch	E
Santa Ynez/Lompoc Area	
Williamson Ranch Channel	E
Amby Channel	E
Airy-Skytt Channel	C and E
Thumbelina Ditch	C
Zanja de Cota tributary	E
Cebada Cyn Creek/Channel	C and E
East-West Ditch	E
Miguelito Channel	C
Rodeo-San Pasqual Channel	C
Bob Hunt Ditch	E
Hoag-Santa Rita Ditch	E
Lilley-Hayes Ditch	C
Mercury Ditch	E
Mission Hills Channel	E
Calvert Ditch	E
Clubhouse Drain	E
Davis Drain	E

TABLE 2-3 (Continued)

Watercourse	Earthen (E) or Concrete (C) or Asphalt (A)
Los Alamos Valley	
Hopkins Ditch	E
Howard Canyon Ditch	E
Lompoc Grade Ditch	E
Los Alamos East Side Ditch	E
Roy Smith Ditch	E

*A detailed description of the maintenance activities in each ditch is provided in Appendix B.

The number of watercourses maintained each year since the inception of the Maintenance Program in 1992/93 is summarized in Table 2-4. More maintenance work occurs on the South Coast compared to the North County because there are more drainages near developed areas on the South Coast where flooding and bank erosion problems could threaten public infrastructure and other public facilities. More drainages are subject to maintenance work in years following flood events because there has been damage (usually bank erosion) and deposition of debris (e.g., down trees, wood and sand debris piles).

TABLE 2-4
NUMBER OF NON-EXEMPT WATERCOURSES MAINTAINED EACH YEAR

	Number of Drainages with Maintenance Projects		
Year	South Coast	North County	Total
92-93	7	3	10
93-94	11	3	14
94-95	7	2	9
95-96	15	9	24
96-97	15	4	19
97-98	14	5	19
98-99	13	7	20
99-00	11	1	12
00-01	10	3	13
Total	103	37	140
Average=	11.4	4.1	15.6

The frequency of the different types of maintenance activities is summarized in Table 2-5. The most frequent maintenance action or project is brushing, followed by spraying and shaping. Desilting and repair of flood control facilities are substantially less common maintenance actions. There are slight differences in the relative frequency of specific maintenance actions between the North County and South Coast. For instance, there is a higher percentage of desilting on the North County creeks, probably due to the generally higher sediment deposition rates associated with long, low gradient alluvial creeks and rivers in an agricultural area. South Coast creeks have a higher relative frequency of repair work because of there are comparatively more flood control facilities in this urbanized environment. It should be noted that brushing and spraying typically occur together at the same maintenance site.

TABLE 2-5
FREQUENCY OF DIFFERENT TYPES OF MAINTENANCE PROJECTS

	Types of Maintenance Projects Performed 1992-2001				
	Brushing*	Spraying*	Shaping	Desilting	Repair
Total Number of Maintenance Projects/Sites					
South Coast	209	156	146	48	59
North County	98	62	70	42	8
All Drainages=	307	218	216	90	67
Average Annual Number of Maintenance Projects/Sites					
South Coast	23	17	16	5	7
North County	11	7	8	5	1
All Drainages =	34	24	24	10	8
Average Annual Number of Maintenance Projects Per Drainage					
South Coast	2.0	1.5	1.4	0.5	0.6
North County	2.7	1.7	1.9	1.1	0.2
All Drainages =	2.1	1.5	1.5	0.6	0.5

* Brushing and spraying generally coincide.

2.4 ROUTINE DEBRIS BASIN MAINTENANCE

2.4.1 Approach and Methods

There are a variety of basins that are maintained by the District. Most of the South Coast basins are located in the upper watersheds and are designed to capture sediments, boulders, and vegetative debris that could reduce channel capacity in downstream reaches. There are also several sediment basins in the lower reaches of the South Coast creeks (e.g., Kim's Basin along Carpinteria Creek and Hospital Basin on Hospital Creek). Both sediment and flood flow retention basins are located in the North County. Most basins were constructed after large wildfires to capture sediment, and are maintained for ongoing sediment management.

A generic description of basin maintenance methods was provided in the 1991 Final Program EIR. Detailed maintenance procedures are described for 16 South Coast basins in the 1996 Debris Basin Maintenance Plan prepared by the District. The latter plan represents an element of the overall Maintenance Program. Basin maintenance is conducted on an as-needed basis to ensure the proper functioning of the basin prior to each winter. Basins are inspected during the winter after significant rain events.

Routine maintenance includes keeping the outlet works clear of vegetation in order to prevent plugging which could cause premature filling of the basin and overtopping. Sediment basins are designed to partially fill with sediment and debris during high flow events, while slowly allowing water to pass through the outlet works. They pass low flows that do not carry heavy sediment loads. Retention basins are designed to fill with clearwater flood flows then slowly release water over a prolonged period.

Routine maintenance of debris basins usually includes the establishment and maintenance of a 15-foot wide pilot channel through the center of the basin to facilitate passage of low flows and sediments. The channel is typically created and maintained by a dozer, which cuts a shallow channel (2 to 3 feet deep) and sidecasts the spoils. The maximum disturbance zone is 30-feet wide. The pilot channel is also maintained by brushing or spraying when reshaping is not necessary. The inside face of the basin embankment and a 10-foot wide zone at the base of the embankment are cleared of vegetation using hand crews and tools to allow inspection of the structure and to gauge the current capacity. Native vegetation is allowed to re-colonize the maintained areas, until such time that maintenance clearing is required again.

Long term maintenance of the basins involves the removal of sediment once the design capacity has been reduced by 25 percent (or when there is a significant wildfire), using visual observations and surveys to determine the capacity. The depth and areal extent of sediment removal vary depending on the basin design and amount of sediment accumulated in the basin. Sediment is removed by a variety of means (i.e., dozer, Gradall™, front end loader, excavator, crane with clamshell or dragline), then moved off site with dump trucks. Vegetation that has colonized the newly accumulated sediment is removed.

Herbicides are applied to a basin when noxious, non-native species begin to colonize the basin (e.g., mustard, cocklebur, ironweed). Herbicide treatment is also used to maintain the pilot channel when reshaping the channel is not required; only woody, obstructive plants are sprayed. Emergent wetland plants are retained for biofiltering functions.

2.4.2 Summary of Maintained Basins

Basins (exempt and non-exempt) that have been maintained each year since the inception of the Maintenance Program in 1992/93 are summarized in Table 2-6. Additional basins may be added if new ones are constructed in the future.

TABLE 2-6
MAINTAINED BASINS

South Coast – Exempt Basins
Hog Canyon
Hospital Basin
Kim's Basin
South Coast – Non- Exempt Basins
Arroyo Paredon
Cold Springs
Franklin
Gobernador
Maria Ygnacio East
Maria Ygnacio Main
Mission
Rattlesnake
Romero
San Antonio
San Roque
San Ysidro
Santa Monica
Toro Canyon East
Toro Canyon Lower West
Toro Canyon Upper West

North County – Exempt Basins
"R" Street Basin
Blosser Basin
Bradley Basin
Buellton Basins 1 and 2
Cemetery Debris Basin
Deerfield Basin
Fault Canyon Basin
Foxen Woods Basin No. 2
Foxen Woods Basin No. 3
Getty Basin
K-Mart Basin
Kover Basin
Miguelito Basin
Mission Hills Basin
Mormon Canyon Basin
Mud Lake Basins 1, 2, and 3
Oak Knoll Basin
Orcutt Solomon Basin
Rodeo-San Pasqual Basin
Rudolph Basin
Tanglewood Basin

2.5 STANDARD MAINTENANCE PRACTICES

In 1992, the IPAC developed 77 Standard Maintenance Practices (SMPs) that were adopted as part of the Maintenance Program as mitigation measures for the impacts identified in the 1991 Final EIR. They include various environmental protection measures and are divided into the following categories:

- Avoidance of significant resources (1-10)
- General practices (11-20)
- Modified brushing (21-28)
- Modified spraying (29-49)
- Modified desilting (50-58)
- Modified shaping (59-61)
- Modified flood control devices (62-64)
- Modified use of access ways (65-68)
- Monitoring (69-73)
- Revegetation (74-76)
- Recovery plans for sensitive species (77)

SMPs are provided in Appendix C. They are applied to individual maintenance activities for specific drainages. Not all SMPs are applied to every maintenance site. SMPs are fully integrated with the maintenance activities. In most cases, the District Biologist or Maintenance Supervisor implement the SMPs or oversee their implementation. The District staff determines which SMPs will be used based on the anticipated impacts of each maintenance activity. One or more SMPs were assigned to each impact identified in the 1991 Final EIR. Implementation of the SMPs during maintenance activities is monitored and documented by the District staff in accordance with an adopted Mitigation Monitoring and Reporting Plan.

2.6 HABITAT RESTORATION

2.6.1 Requirements in the SMPs

The Maintenance Program includes three SMPs requiring habitat restoration for maintenance activities that remove native vegetation, as listed below.

74. *Where native or biologically beneficial vegetation is removed within riparian corridors or other wetlands, on-site vegetation shall be re-established, where feasible, to ensure no net loss of habitat value, other biological resource, or significant vegetated area.*

75. *Where on-site revegetation is infeasible, off-site revegetation shall mitigate vegetation loss at a site that is as close to the disturbed site as possible; there shall be no net loss of habitat value, other biological resource, or significant vegetated area. Approved and successful revegetation shall be considered mitigation for repetitive removal of vegetation from the disturbed site in perpetuity.*

76. *Only native plant material shall be used; and this shall be obtained at or as near as possible to, the site being revegetated.*

2.6.2 Requirements in State and Federal Permits

In addition, the Corps of Engineer's Regional General Permit for the overall maintenance program (see Section 2.8) also includes the above conditions. The current Programmatic Streambed Alteration Agreement with the California Department of Fish and Game (CDFG) for the overall maintenance program includes the following requirements related to habitat restoration. These requirements are subject to change with future Agreements.

27. *Restoration shall include the revegetation of stripped or exposed areas with vegetation native to the area.*

44. *If mature perennial native trees have been removed from the stream banks, bed or channel, they shall be replaced in-kind, in a nearby location and maintained until established, as specified in the [Annual Plan] approved by the Department and as specified in the following conditions.*

46. *In order to determine if the revegetation techniques used have been successful any plant species required that are listed below shall achieve the [following] minimum growth at the end of three and five years.* {continued}

47. All planting shall have a minimum of 70% survival the first year and 100% survival thereafter and/or shall attain 75% cover after 3 years and 90% cover after 5 years. If the survival and cover requirements have not been met, the Operator is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

48. All plantings shall be done after the first rains, between October and May 1, to take advantage of the winter rainy season, unless local water supplies are adequate to assure survival or irrigation is provided, during periods when moisture is inadequate, to assure survival.

51. All oaks, sycamores, cottonwoods, and willows with a diameter at breast height greater than five (5) inches, removed/damaged during flood control activities, shall be replaced, in kind, at a 5:1 ratio to compensate for planting mortality and to accelerate recovery of standing stock biomass. Replacements shall be planted on a nearby bank, or other location approved by the Department, where they will not be disturbed by future maintenance activities. The Operator shall irrigate replacement plants during intervals when natural moisture conditions are inadequate for survival, until plants become established.

52. Where feasible, saplings of trees such as sycamores, cottonwoods, and/or willows, which must be removed form the bed of the stream to prevent diversion of flood flows and bank erosion, shall be reserved and used, on-site, for revegetating slopes or shall be transplanted to revegetate a site(s) specified in the Annual Plan approved by the Department.

53. Replacement tree stock may also be grown from cuttings collected from randomly selected individuals of the same species occurring in nearby locations within the same stream. Plants may also be obtained from a native plant nursery. No plants shall be inoculated to prevent heart rot.

2.6.3 Applicability to Basin Maintenance

Habitat restoration is not required for maintenance activities in sediment, debris, and retention basins included in the Maintenance Program because the basins are man-made structures designed to operate with little or no vegetation. Hence, the 1996 Addendum to the Maintenance Program which described maintenance for 16 South Coast basins does not include a habitat restoration requirement. Similarly, the Corps of Engineers General Permit for basin maintenance along the South Coast and the CDFG Streambed Alteration Agreement does not contain any requirements for habitat restoration due to impacts of basin maintenance.

The District allows natural recolonization of basins by native riparian and wetland plants, except for obstructive vegetation in the pilot channel. Vegetation may be removed by flood flows and the filling of the basin, as well as by maintenance actions to preserve capacity in the basins. In general, the basins on the South Coast contain significantly more riparian habitat than was present in the creek prior to the basin because the basin has widened and flattened the creek, providing suitable conditions for well developed riparian and wetland habitats.

The Maria Ygnacio Debris Basin Project completed in 1990 included habitat restoration in selected portions of the two basins, as required in the EIR for the project. These are the only basins in the County where habitat restoration was designed as part of the basin.

2.6.4 Revegetation Approach and Methods

The three SMPs that require habitat restoration (see Section 2.6.1) provide discretion to the District on restoration goals, species to be planted, planting techniques, maintenance requirements, and monitoring methods. The District prepared a revegetation guidance document in 1992 (updated in 1994) that is considered an element of the overall Maintenance Program. The plan provides guidance on the selection of species to be used in revegetation, determining the number of plants to be used at a site, collection and preparation of plant material (i.e., cuttings), plant installation, and monitoring. The District has gained considerable experience in riparian restoration methods since the preparation of the plan. The current restoration practices are summarized below.

<u>Determining the Need for Restoration, and the Acreage and Site of Restoration</u>

Pursuant to the adopted SMPs and the District's state and federal permits, the District conducts habitat restoration under the following circumstances:

- Work areas temporarily disturbed during maintenance activities are restored if establishment of vegetation at the site will not impede flood flows, and if it appears that active revegetation is required to ensure successful establishment, rather than passive, natural colonization.

- Eroding banks that are stabilized with both earthen material and/or bank protection (e.g., rip-rap, pipe and wire) usually include selective plantings with riparian trees and shrubs in strategic locations on the bank to provide additional stabilization due to the root systems, and to replace the vegetation lost due to erosion. For example, banks are often replanted with willows, cottonwoods, and blackberry plants after pipe and wire revetments along the bank are repaired or newly installed. Willow trees are often placed amongst ungrouted rip rap, or in soil placed on top of rip rap.

- Areas affected by channel shaping, brushing, and desilting are not restored because the purpose of the maintenance action is to remove obstructions (e.g., sediments or vegetation) that could impede flood flows. However, to compensate for the reduction in vegetation density and height due to brushing or the removal of vegetation due to channel shaping or desilting, the District provides compensatory habitat restoration at nearby locations. The District staff finds suitable restoration sites along the affected watercourse, as near to the impact areas as possible. Such sites typically consist of banks or high in-stream terraces that are barren due to land clearing or erosion or dominated by non-native plants. They must have suitable substrate, exposure, and moisture conditions to support riparian scrub or woodland. The sites must also be located outside the active channel where the high frequency flows are contained (e.g., 2 to 5 year flows). The size of the sites varies considerably, ranging from 400 square feet (e.g., 10 by 40 feet) to 15,000 square feet. The approach to finding a restoration site is opportunistic and site specific. To date, the District has not experienced any difficulty in locating suitable sites. Most sites are located on private land within or directly adjacent to the watercourse. The District attempts to restore affected areas with comparable habitat, focusing on habitat functions rather than on strict replacement ratios. Only riparian scrub and woodland is restored. No wetland restoration (e.g., freshwater marsh, emergent wetlands) is included in the program.

Plant Material and Species

The District mostly utilizes plant material derived from local genetic stock. The District Biologist collects seeds and cuttings, and has also retained a landscaping contractor to collect seeds and cuttings to prepare container plants for use in restoration. Source material is often derived from the same watercourse as the area affected. At a minimum, plant material used in a watercourse is derived from the same region of the County (e.g., South Coast, Santa Maria, Los Alamos, Santa Ynez areas). Plants typically used in restoration include the following species:

- Arroyo willow (*Salix lasiolepis*)
- Red willow (*Salix laevigata)*
- Sandbar willow (*Salix hindsiana)*
- Western sycamore (*Platanus racemosa*)
- Elderberry (*Sambucus mexicanus*)
- Black cottonwood (*Populus trichocarpa*)
- California bay (*Umbellaria californica)*
- Coast live oak (*Quercus agrifolia)*
- Mulefat (*Baccharis salicifolia*)
- Blackberry (*Rubus ursinus*)
- California rose (*Rosa californica)*
- Mugwort (*Artemisia douglasiana*
- Fuschia flowered gooseberry (*Ribes speciosum)*

One-gallon plants are typically installed rather than cuttings or seeds. Planting densities allow for 30 percent mortality.

Maintenance and Monitoring

All restoration sites are weeded prior to planting. Plants are installed in late fall and winter (October through February) and provided with supplemental water for the first two years. The District has retained a commercial landscaping firm to provide routine maintenance, including watering, weeding, and plant replacement. Watering is typically provided by hand crews; drip irrigation is used at larger sites or at sites where a water source is readily available. Restoration sites are visited by the maintenance crew at least once a week during the first year and every other week during the second year. The District Biologist also examines the sites on a periodic basis. The performance goals for all restoration sites are 70 percent survival by the end of the first year, and 100 percent thereafter. The District will replant a restoration site on a one-time basis if the site has been destroyed by vandals, flood flows, or inadvertent actions by the landowner. Otherwise, a restoration site is maintained and plants replaced on an as-needed basis until the plants are established and the site has adequate plant density to stabilize soils and provide wildlife habitat. At that point, the District no longer maintains the site.

The District prepares an annual Maintenance and Revegetation Report after the maintenance projects for the year have been completed, documenting the work accomplished including restoration projects. The report also includes a review of the status of all habitat restoration projects still subject to maintenance.

2.6.5 Status of Revegetation to Date

A summary of the drainages throughout the County where restoration sites are located is provided in Table 2-7. The total number of restoration sites established along creeks in the County under the Maintenance Program through August 2000 is 102, with a total combined acreage of about 8.5 acres. The number of restoration projects being implemented under the 2000/2001 Annual Plan is fifteen. Since the Maintenance Program has been initiated, 78 restoration projects have been deemed successful and do not require any additional planting or maintenance. All other projects are in varying stages of development. Seven restoration projects have failed due to storm damage or lack of landowner cooperation.

2.7 ANNUAL PLANNING AND APPROVAL PROCESS

The Maintenance Program includes a specific annual planning and approval process. The sequence of events in this process is summarized below, and shown on Chart 1.

Step 1: Conduct Surveys and Develop Maintenance Projects

Each year, the District environmental and maintenance staff conducts joint surveys of all maintained drainages in the County during April. These are labor intensive and demanding field investigations to identify areas that require maintenance. Data are gathered on site conditions along the reaches that need maintenance. An assessment of the need for maintenance is prepared using principles of engineering and stream geomorphology. The nature and extent of the proposed maintenance activities are described. Biological field surveys are conducted by the District Biologist to determine the presence of any sensitive species. Impacts of the proposed actions are evaluated and mitigation measures are identified. Impacts are listed for each resource area using the impact summary table from the 1992 Final Program EIR. Mitigation measures are included for each impact using the list of SMPs. A map of the proposed maintenance work area is developed, as well as documentation of any biological field investigations. Photographs of the maintenance work area are usually acquired. Finally, the mitigation monitoring and reporting requirements from the 1992 Final Program EIR are identified for each mitigation measure (i.e., SMP) adopted.

TABLE 2-7
DRAINAGES WHICH CONTAIN ONE OR MORE RESTORATION PROJECTS UNDER THE MAINTENANCE PROGRAM

South Coast
Arroyo Burro Creek
Arroyo Paredon Creek
Upper Atascadero Creek
Barger Canyon Creek
Carneros Creek
Carpinteria Creek
Cieneguitas Creek
El Encanto Creek
Fremont Creek
Las Positas Creek
Las Vegas Creek
Maria Ygnacio Creek
Picay Creek
Romero Creek
San Antonio Creek
San Jose Creek
San Pedro Creek
Sycamore Creek
San Ysidro Creek
Tecolote Creek
Tecolotito Creek
Total Number = 87
Total Acreage = 4.36

North County
Alamo Pintado Creek
Canda de la Pila
Harris Canyon Creek
Orcutt/Solomon Creek
Pine Canyon Creek
Rodoe/San Pasqual Channel
San Antonio/Los Alamos Ck
Santa Maria River
Zaca Creek
Total Number = 15
Total Acreage= 4.13

GRAND TOTAL = 8.49

Step 2: Develop Annual Plan

An Annual Routine Maintenance Plan (Annual Plan) is prepared by the District staff in May or June of each year which includes the following chapters:

- No sec. – Introduction and summary of planned maintenance work
- Section 1 – Notice of Exemption and description of exempt drainages
- Section 2 – Individual EIR Addenda for each drainage to be maintained, including detailed information on the site conditions, biological resources, proposed maintenance actions, impact assessment, and mitigation measures (i.e., SMPs)
- Section 3 – Reference to other environmental documents, as needed
- Section 4 – 1992 CEQA Findings and a list of the EIR Addenda in the Plan
- No sec. – District revegetation methods

Step 3: Public Review

A draft Annual Plan is issued for public review and public workshops to receive comments on the plan are conducted in the North County and South County. Letters of comment are received during a 30-day time period. Copies of the Annual Plan are sent to local environmental groups and any individual or organization with an interest.

Step 4: CEQA Compliance

As noted above, the Annual Plan includes a description of each maintenance project to be conducted in the fall. In addition, it represents the environmental documentation under CEQA. The projects included in the Annual Plan are categorized as follows relative to CEQA:

- The project is exempt from CEQA and therefore no environmental review is necessary (CEQA Guidelines 15300 or 15061)
- No further environmental review is necessary because the project was adequately addressed in the Program EIR (CEQA Guidelines 15162).
- Considered under the 1991 Program EIR, but an Addendum is necessary to describe the project and ensure consistency with the Program EIR impact analysis and to apply the appropriate SMPs (CEQA Guidelines 15164)
- Not considered under the 1991 Program EIR and therefore a new environmental review is necessary (e.g., subsequent, supplemental, or new Negative Declaration or EIR)

As a CEQA lead agency, the District has the authority to determine which maintenance activities and projects are exempt from CEQA under the following two provisions of the CEQA Guidelines:

1. Under Section 15061(b)(3), a project or discretionary activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

2. The District may also determine that a project qualifies for CEQA Categorical Exemption Class 1 (CEQA Guidelines Section 15301, Existing Facilities):

   "Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use. Examples include but are not limited to: ... (b) Existing facilities of both investor and publicly-owned utilities used to provide electric power, natural gas, sewerage, or other public utility services...."

   There are exceptions to Categorical Exemptions, which are listed in Section 15300.2 of the CEQA Guidelines. For example, all exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant. In addition, a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

Maintenance projects that are exempt from CEQA generally include the following categories of activities, as described by the District in the Annual Plans:

1. **Rubbish Removal.** Removal of rubbish or other unnatural material from the riparian corridor or estuary.

2. Concrete Channels. Maintenance activities in fully concrete lined channels without habitat.

3. **Flood Control Devices.** Cleaning, repair, and replacement of such flood control devices as check structures, drop structures, chute structures, culverts, weirs, or stream flow measuring stations.

4. Access Ways. Maintenance activities on access ways or roads outside of riparian corridors or estuaries.

5. **Earthen Channels.** Maintenance activities in earthen channels, which have been developed to convey urban stormwater, agricultural stormwater or tail water, and that support little to no vegetation.

6. **Unvegetated Basins.** Maintenance activities in sediment, debris, and retention basins which have been constructed for such purposes and which support little to no vegetation.

Non-exempt projects that were considered in the 1991 Program EIR are subject to environmental review in the Annual Plan. Addenda are prepared by District staff for each maintenance project, which include the following elements:

Location - A description of the maintenance site is presented.

Setting - A description is presented of the environmental conditions at the site, including topography, vegetation, stream channel dimensions, and adjacent land use. District staff conducts a field investigation and records information on site conditions, including vegetation.

Revegetation - This section includes a description of any existing and proposed District revegetation sites in proximity to the maintenance site

Wildlife Surveys - The results of wildlife surveys that are conducted in April or May at the maintenance site are summarized. The primary objective of these surveys is to identify any sensitive species at the maintenance site. This section of the Addendum also includes a summary of all wildlife observed at or near the site.

Engineering Analysis - A description of the site conditions that have caused the need for maintenance, including: (1) the nature and extent of channel obstructions or damaged facilities; (2) the flooding and erosion hazards created by these conditions; and (3) the remedy for this situation. The analysis usually is based on visual observations of adverse conditions such as sediment deposits, significant in-stream vegetation, or damaged facilities. The District personnel that conducts the Annual Plan surveys is the same each year; as such, they have first-hand knowledge of site conditions along drainages in the County over many years and under various conditions. Hence, they can readily assess the maintenance needs. The District does not typically conduct quantitative field measurements or hydrologic calculations or modeling to determine the maintenance needs.

Project Description - This section includes a description of the maintenance work to be performed, including descriptions of access. Precise descriptions of the areas to be treated (e.g., sprayed with herbicide or brushed) are provided using features in the field. Topographic or parcel maps are provided to show the limits of work and access points.

Impact Analysis and Mitigation Measures - The Addenda refer to the list of impacts associated with specific maintenance activities developed in the 1991 Program EIR. The latter identified numerous significant, unmitigable impacts (Class I) and significant, but mitigable to less than significant impacts (Class II). For maintenance projects proposed and implemented since 1992, the District has been able to avoid significant impacts by designing the projects or activities to avoid such impacts, and/or by implementing appropriate SMPs from the Program EIR to mitigate such impacts.

This section contains a list of impacts expected to occur due to the proposed maintenance activity using the impact number, impact description, and issue area presented in the 1991 Program EIR. These issue areas include the following: Botany, Terrestrial Zoology, Aquatic Zoology, Geomorphology, Water Quality, Air Quality, and Noise. Specific impacts are listed under each issue area.

In addition, mitigation measures derived from the Program EIR and subsequent IPAC process are listed under each issue area. These measures consist of the SMPs listed in Appendix C. Specific SMPs are listed under each issue area to address the impacts anticipated.

Step 5: Plan Approval

The Annual Plan is revised to respond to any public comments, then is presented to the Board of Directors for approval in June of each year. There is a public hearing to adopt the Annual Plan and the associated CEQA Addenda and Categorical Exemptions.

2.8 OTHER PERMITS

2.8.1 Local Land Use and Coastal Development Permits

Most of the maintenance activities occur in unincorporated portions of Santa Barbara County. The District is exempt from the land use permitting requirements of the County in areas outside the Coastal Zone. Section 35-201 of Article III Zoning Ordinance (Non-Coastal Areas) states that the Zoning Ordinance does not apply to "*...development by the County of any district or agency of which the Board of Supervisors of the County is the governing body.*"

Some maintenance activities occur in the Coastal Zone in unincorporated portions of the County. Under Section 53-51(4) of the Article II Zoning Ordinance (Coastal Areas), the District does not require a Coastal Development Permit for maintenance projects in the Coastal Zone, except when the project occurs in an Environmentally Sensitive Habitat (ESH) area. The latter is defined in the Coastal Act and Coastal Plan and generally includes rivers, streams, wetlands, riparian corridors, and sensitive species habitats. For most work in the Coastal Zone, the County has permit authority and issues a "blanket" Coastal Development Permit (CDP). However, there are certain areas along the coast where the California Coastal Commission (CCC) retains primary permit authority. Maintenance projects in ESH areas must be designed and implemented in a manner consistent with the development standards in Section 35-97 of the Article II Zoning Ordinance. Work in the Coastal Zone within the cities of Santa Barbara and Carpinteria requires a CDP from these jurisdictions.

2.8.2 State and Federal Permits

Most maintenance activities occur in natural watercourses and involve modification to the channel bed, banks, and in-channel vegetation. These activities are regulated by the Department of Fish and Game (CDFG) under Section 1601 of the Fish and Game Code. Activities that result in the discharge of dredged or fill material in natural watercourses (such as bank stabilization and channel shaping) are regulated by the Corps of Engineers under Section 404 of the Clean Water Act.

The Corps issued a 5-year long Regional General Permit in 1994 and in 1999 for the District's maintenance program, excluding maintenance activities along the Santa Ynez River, Santa Maria River, lower Atascadero Creek, and San Antonio Creek (downstream of Highway 1). The permit only applies to projects that result in discharge of fill or dredged material. The permit requires that the District conduct pre-construction biological field surveys; notify the Corps each year of maintenance projects that involve disturbance of more than one acre to creeks without wetlands or disturbance of more than ½ acre to creeks with wetlands; restore native habitats on- or off-site to compensate for habitat impacts; conduct archeological field surveys prior to disturbing upland banks; provide annual reports on habitat restoration projects; and conduct a formal or informal Section 7 endangered species consultation with US Fish and Wildlife Service and/or National Marine Fisheries Service if federal endangered species could be affected by the proposed maintenance projects. The District submits the draft Annual Plan to the Corps each year to satisfy the notification requirement, and the Corps provides a written confirmation that the Annual Plan conforms to the Regional General Permit. The Corps has the discretion to disallow certain maintenance projects from the programmatic permit and require a separate permit, and to issue new special conditions for each Annual Plan.

The Central Coast Regional Water Quality Control Board has issued a Section 401 water quality certification for the Corps 404 permit, and the CCC is currently reviewing the Corps permit in order to issue a Coastal Zone Consistency Determination Concurrence for work performed under the Corps permit in the Coastal Zone.

The Corps also issued a Regional General Permit in 1997 for maintenance of the debris basins along the South Coast. The permit has similar requirements as the permit for the overall maintenance program.

In 1992, the CDFG and the District executed a Streambed Alteration Agreement pursuant to Fish and Game Code 1601 for the Maintenance Program. The agreement is programmatic in nature, and is annually renewed. The requirements of the Agreement are similar to the Corps permit listed above. However, the Agreement includes more specific environmental protection measures than the Corps permit, including 82 conditions. In 1997, the CDFG and District executed a 5-year programmatic Agreement for maintenance activities in the South Coast debris basins.

The Corps permits and CDFG Agreements contain environmental protection measures that are comparable to those contained in the SMPs and generally do not create conflicting requirements.

3.0 PROPOSED SANTA YNEZ RIVER MAINTENANCE PROGRAM

3.1 PROJECT REACH

The reach extends from the Lompoc Wastewater Treatment Plant to the 13th Street Bridge on Vandenberg Air Force Base (VAFB), as shown on Figure 6. The riverbed is located on both private and federal lands, the latter including VAFB and the Lompoc Federal Penitentiary.

3.2 PREVIOUS MAINTENANCE AND MITIGATION

3.2.1 Channel Clearing

In January 1992, the District cleared portions of the river along this reach with a tracked mower under emergency conditions due to the threat of imminent flooding. A 25 to 100-foot-wide swath of vegetation was cleared at that time.

In late 1992, the District completed a Final EIR for a one-time mowing of vegetation in a 100-foot wide swath in the middle of the riverbed along the entire reach. The Board approved the project and it was completed in December 1992 and January 1993.

In December 1997, District completed an Environmental Assessment (EA) to maintain the 100-foot wide corridor in the riverbed that was created in 1992/1993. The EA was prepared on behalf of VAFB pursuant to the National Environmental Policy Act (NEPA). The clearing was completed in December 1997/January 1998 after VAFB issued a FONSI and the CDFG executed a 1601 Streambed Alteration Agreement for the project. The District also issued a Notice of Exemption under CEQA due to emergency conditions from the El Nino rainfall.

3.2.2 Habitat Mitigation

No compensatory habitat mitigation was performed for the mowing projects in January 1992 and in December 1992/January 1993 because suitable sites for creating or enhancing riparian habitat could not be located and/or acquired on private property, federal property (i.e., on VAFB or the Federal Penitentiary), or City of Lompoc property. The District had conducted several investigations to locate a mitigation site, and coordinated extensively with landowners along the project reach concerning cooperative efforts for mitigating the projects. However, these efforts were unsuccessful, and the District had to proceed with the clearing projects without mitigation due to the urgent need to alleviate a flood hazard. The Final EIR for the 1993 mowing included a commitment by the District to develop a long-term habitat mitigation for 1993 and future mowing.

The EA prepared for the December 1997/January 1998 clearing included a habitat mitigation measure to create 18 acres at one or more of four sites located along the Santa Ynez River owned by the City of Lompoc. The measure was based on a condition in the CDFG 1601 Streambed Alteration Agreement for the 1998 clearing. It included creation of 18 acres of new riparian habitat to compensate for the 16 acres affected by the 100-foot-wide mowing (during both 1992/93 and in 1998) and two acres to compensate for temporal habitat loss impacts after the mowing, but prior to mitigation. Habitat restoration was commenced in November 1998. A description of the mitigation sites and restoration plan is provided in Section 3.3.3.

3.3 PROPOSED MAINTENANCE AND MITIGATION

3.3.1 Objectives

The objectives of the project are to maintain a 100-foot wide swath (or its equivalent in two swaths with minimum widths of 30 feet) along the project reach with non-obstructive vegetation in order to allow sufficient channel capacity for certain flood flows. A 100-foot wide swath encompasses 54 acres along the project reach. The District would only clear up to 16 acres at any one time, connecting natural open areas in the channel to achieve a continuous swath with a target width of 100 feet, whenever possible. The District is not proposing to mow a 100-foot wide swath along the entire reach. Mowing 16 acres is the equivalent of a 30-foot wide swath along the entire project reach.

The District estimates that the capacity of the project reach without channel clearing will be reduced to 5,000 cubic feet per second (cfs) due to the accumulation of dense, obstructive vegetation in the channel invert over time. This situation occurred in the late 1980's due to a lack of scouring flood flows during the 1986-91 drought and the lack of channel maintenance (due to the District's inability to acquire necessary permits).

After the 100-foot wide channel clearing in December 1992/January 1993, the District estimated that 18,300 cfs was conveyed during the March 1993 flood flows with only minor flooding of adjacent agricultural lands. In January and March 1995, flows in excess of 20,000 cfs passed through the project reach with only minor flooding. Finally, flows of about 20,000 cfs were observed in the project reach without flooding during the flood flows of February 1998, after the December 1997/January 1998 mowing. These observations indicate that the 100-foot wide open area creates about 20,000 cfs channel capacity in the project reach, which in turn, provides a reasonable level of protection for the adjacent agricultural lands.

The District proposes to continue the mowing to create, whenever possible, a 100-foot wide swath on an as-needed basis as part of the Routine Maintenance Program. As part of the program, the District will annually assess the need to mow all or part of the lower river, as described below. The proposed clearing will be described in the Annual Maintenance Plan, along with all other drainages included in the program.

Based on the District's previous experience along the lower river, it is estimated that full mowing of the channel will be required about every 3 to 5 years, depending upon runoff and weather conditions. Low runoff years allow in-channel vegetation to accumulate because of the absence of scouring flows. The project reach has perennial flow of treated wastewater from the Lompoc Wastewater Treatment Plant, which supports the lush and productive riparian growth along the lower river.

3.3.2 Channel Mowing

The District proposes to periodically mow portions of the river from the Lompoc Wastewater Treatment Plant to the 13th Street Bridge (see Figure 7) on an as-needed basis, using the same methods from the December 1992/January 1993 and January 1997/December 1998 mowing projects. Two types of mowed zones will be created along the reach, as the conditions dictate:

- Option 1. Two swaths of varying widths (but with a minimum of 30 feet) with a combined total width of 100 feet will be mowed on either side of the existing low flow channel. A 25-foot wide buffer zone will be retained on either side of the low flow channel.

- Option 2. A single 100-foot wide swath will be mowed on one side of the low flow channel, with a minimum 25-foot wide buffer zone.

The above two clearing configurations will be established as needed along the entire reach. The mowed zones will connect to existing open areas in the river channel created by natural scouring. The buffer zone will remain adjacent to the then-current low flow channel except where it is necessary to connect the mowed zones. A continuous clear zone is required to prevent the development of debris dams.

The total length of the area to be treated is about five miles over the 4.5-mile long reach due to meanders. The total acreage of a 100-foot wide swath over this length is about 54 acres. However, the District is estimating that it will only need to mow about 16 acres, and that the remainder (38 acres) would be clear due to natural scouring, or would contain low-growing freshwater marsh vegetation that does not impede flows. The District only mowed 16 acres in December 1997/January 1998, and proposes only to mow up to this amount under the Maintenance Program.

Since the issuance of the Draft EIR, the District has modified the proposed mowing in the following manner: (1) no more than 20 percent of the project reach would have a 100-foot wide mowed swath in any given maintenance year; and (2) after conducting maintenance along the river, no additional maintenance would occur along the same reaches for three years.

The location of the mowing may vary slightly from time to time. However, it is anticipated that the boundary of the mowed zone will be very similar during each clearing event. The previously cleared swaths currently consist of a mosaic of barren channel and young willow scrub.

Clearing will be accomplished by a combination of hand crews using chain saws and a Posi-Trac™ MD70 mower or similar equipment. The latter is a low ground pressure diesel mower. The mower cuts vegetation at about 12 inches above the ground surface. Vegetation is broken into small pieces (less than 6 feet in length) that is scattered throughout the cleared zone where much of it will be transported by winter flows to the ocean. The mower will not treat portions of the clear zone where the vegetation is sparse and/or short (less than three feet in height), nor in wetland areas.

The crews and mower will access the riverbed at the existing access points listed below where there are earthen ramps or other cleared or sparsely vegetated areas on the riverbed that make vehicular access easy. Some or all of these access points may be used during any given year, depending upon the location of the low flow channel.

- V Street
- Floradale Bridge
- Federal Penitentiary (agricultural field)
- Douglas Ave
- VAFB (agricultural fields)
- DeWolf Ave
- Union Sugar facility

Mowing would occur during the months of September 1st to December 1st to prevent conflicts with endangered riparian breeding birds and the southern steelhead trout. Work would occur from 7 AM to 5 PM throughout the week. Mowing would be completed within 2 to 6 weeks. When the mower is in operation, only three people are needed (operator, mechanic, and monitor). If hand crews are used for clearing, then up to 20 workers may be used. No equipment would access the river except for the mower.

The District will determine the need for mowing in the following manner. Under the existing Routine Maintenance Program, the District conducts field assessments in April and May of each year to determine the need for channel maintenance along drainages throughout the County. District personnel will conduct a similar assessment of the lower Santa Ynez River by examining the density and height of vegetation in the cleared zone. The need for maintenance clearing will be based on the visual observations of in-channel vegetation conditions. In general, maintenance mowing is warranted if, during the spring surveys, the District estimates that willow and mulefat saplings will be over six feet in height by the fall. Stands of cattails and sedge are avoided because this vegetation lays down during flood flows and has only a minor effect on channel resistance at flood stage. It is anticipated that partial or full mowing would be required about every 3 to 5 years, as periodic high flows will maintain scoured areas.

3.3.3 Permits and Approvals Required

In order to implement the channel maintenance on an ongoing basis and to incorporate it into the Routine Maintenance Program, the District must acquire the following approvals:

- Amendment of the current 1601 Streambed Alteration Agreement for Routine Maintenance issued by the CDFG in 1992 to include the Santa Ynez River channel maintenance, or execution of a new agreement.

- Approval of the project by VAFB, which will include completion of an environmental review pursuant to NEPA, and completion of endangered species consultation with the USFWS and NMFS.

No 404 permit is required from the Corps for the project because the Corps has notified the District that removal of vegetation using the methods described above is not considered a regulated activities because the riverbed is not directly manipulated.

The project reach is located outside the Coastal Zone. As such, a Coastal Development Permit is not required by the County Planning and Development Department. However, the District may need a Coastal Zone Consistency Determination from the Coastal Commission for work authorized by Vandenberg Air Force Base.

3.3.4 Operations-Related Mitigation Measures

The following programmatic mitigation measures will be implemented during each clearing event. These measures are derived primarily from the 1997 EA and 1601 Streambed Alteration Agreement for the clearing in December 1997/January 1998. The measures were proven to be very effective in the field during that clearing event.

1. Access to the riverbed will occur from existing access points and ramps, used in previous clearing events. All access ramps to the riverbed will be blocked after use with a barrier to prevent unauthorized entry, particularly by off road vehicles and motorcycles.

2. No clearing will occur within 25 feet of the primary low-flow channel except when it is necessary to connect cleared swaths from one side of the low flow channel to the other side, or when it is necessary to clear a path across the low-flow channel for temporary equipment and crew access.

3. Prior to clearing, District personnel will place flagging, stakes, or other readily visible markers along the margins of the swaths to be cleared, and to mark environmentally sensitive areas (see Measure No. 4).

4. Emergent wetlands will be avoided during clearing activities. These areas are dominated by perennial wetland herbs such as watercress, spikerush, cattails, and bulrushes, and do not have a substantial number or density of willow trees or large mulefat plants. Ponds will be similarly avoided. Prior to clearing, the District biologist will flag these areas to prevent encroachment during clearing. A minimum 25-foot wide buffer would be established around these areas.

5. Clearing will occur during the months of September 1st to December 1st, to prevent conflicts with the endangered southern steelhead and riparian breeding birds, including the endangered southwestern willow flycatcher and the least Bell's vireo. The southern steelhead migrates upstream from December 1st through March 1st. Smolts migrate downstream to the lagoon or ocean during the period February through May. The flycatcher is a seasonal breeder and summer resident along the lower river (from Buellton to the 13th Street Bridge) from May through August. The vireo is a seasonal breeder and summer resident in the headwaters of the Santa Ynez River and is not expected to occur along the project reach, except as a very rare transient or migrant.

6. Prior to clearing, the District biologist will conduct a training session with construction personnel to instruct them on areas to avoid and other environmental protection measures.

7. Equipment parking and storage, maintenance, refueling, and staging areas will be located in upland areas at least 100 feet from the riverbed, and will be located such that any accidental fuel spills will not enter the riverbed. All refueling areas will have temporary earthen berms or other barriers to prevent migration of spills. No fuel tanks will be stored at the project site.

8. The District biologist will conduct a biological survey no later than five (5) days prior to the clearing to confirm the limits of the work area, the flagging of environmentally sensitive areas, and to search for western pond turtles and the endangered California red-legged frog, both of which could occur in ponds or portions of the low flow channel. These species would be physically captured and removed if they occur in areas where clearing or equipment access could occur. They would not be removed from ponds that are protected from clearing (see Measure No. 4) or from the low flow channel that is protected by a 25-foot wide buffer zone. The District biologist has the requisite permits and authorizations to handle and relocate these species from CDFG and US Fish and Wildlife Service (USFWS).

9. Disturbance of the riverbed will be avoided to the extent feasible. The riverbed will not be scraped, pushed, excavated, filled, or otherwise directly manipulated by equipment.

10. Vegetative material cut from the riverbed will be less than six feet in length. Cut vegetative material will be allowed to fall in place, and will not be collected, stockpiled, and/or disposed in a directed and purposeful manner.

11. The District biologist will be present at all times during clearing activities to: ensure that limits of work are observed; examine ponds and channels near the work areas for the presence of pond turtles and/or red-legged frogs; and move these species if it appears that they may be indirectly affected by the clearing activities. Monitoring activities will be recorded daily.

12. The District will also comply with other environmental protection measures imposed by the CDFG under a 1601 Streambed Alteration Agreement for the project, and any Biological

Opinion issued by USFWS and National Marine Fisheries Service (NMFS) relative to protection of federally endangered species along and downstream of the project reach, including, but not limited to, the southern steelhead trout, tidewater goby, snowy plover, and willow flycatcher.

3.3.5 Habitat Mitigation

1997 CDFG Habitat Mitigation Requirements

The 1601 Streambed Alteration Agreement issued by the CDFG for the December 1997/January 1998 clearing of the project reach include the following habitat mitigation conditions for the 100-foot wide clearing of the project reach:

> *16. The Operator shall provide to the Department a plan for mitigating loss of approximately 16 acres of riparian habitat resulting from the selective mowing activities conducted for flood control.*
>
> *17a. The plan shall include: (1) locating a mitigation site(s) within and possibly outside the riverbed, upstream of the project area, in which a program of phased mitigation can be undertaken; (2) revegetating the mitigation site; (3) monitoring and maintaining the site (irrigation of revegetated area and proposed flood control needs within and adjacent to the site).*
>
> *19. The area for mitigation/restoration shall be calculated at a ratio of 1.125 to 1 for the original 16 acres that were mowed during December 1992/January 1993. Mitigation/restoration for any areas mowed/cleared beyond the original 16 acres cleared in 1992/93 shall be calculated at a ratio of 1 to 1. If mitigation/restoration is not implemented by May 1998, the mitigation/restoration ratios shall increase by an additional 0.125 per acre every three years to compensate for temporal losses to riparian habitat. Thus if the mitigation is not in place by May 1998, the ratio is 1.125 to 1, if it is not in place by May 2001, the ratio is 1.250 to 1, and by May 2004, the ratio shall be 1.375 to 1. The mitigation/restoration ratios may be modified depending upon the WRDA or any State or Federal assistance program associated with the long-term maintenance of the Santa Ynez River.*

The Agreement included standard CDFG performance criteria for riparian restoration. For example, all plantings must exhibit a minimum of 70 percent survival the first year, and 100 percent survival thereafter. The vegetation must attain 75 percent cover within three years, and 90 percent cover within five years. The Agreement also includes specific target heights for individual tree species. Once the performance standards have been met, no further maintenance of the mitigation site is required.

Implementation of Restoration Plan

The District submitted a habitat restoration plan to CDFG in September 1998 for review and approval. It included restoration of 18 acres of riparian habitat: (a) 16 acres to compensate for the original 16 acres affected in 1992/93 and the same acreage in December 1997/January 1998; and (b) 2 acres for temporal losses between the 1998 clearing and the implementation of the restoration in November 1998.

Three mitigation sites were selected by the District along the Santa Ynez River on land owned by the City of Lompoc, upstream of the project reach. All three sites will be placed into a conservation easement in the future. Restoration activities at the individual sites are described below.

- **H Street Site.** This 7-acre site is located on the south side of the river immediately upstream of the H Street Bridge. This site is located on the floodplain about 5 feet above the riverbed. Prior to habitat restoration, it was a fallow field dominated by fennel, mustard, and annual grasses. The northern edge of the site is adjacent to the river and contains a willow-cottonwood woodland. The southern edge of the site is adjacent to a shopping center. Willow trees were planted at the site in November 1998 by placing willow cuttings in shallow trenches created with a bulldozer blade. A drip irrigation system was installed. About 7 acres of willow scrub were planted at the site. In the summer of 2000, the site was weeded. Dead plants will be replaced in early 2001 during the rainy season. Supplemental watering will continue for another year.

- **Riverbend Site**. This 4.4-acre site is located along the south side of the river between the river bank and the site of the City's future Riverbend Sports Park. The site is dominated by annual grasses, common weeds, and scattered willow and cottonwood trees. The District installed willow and cottonwood cuttings in November 1998 in a trench along the base of the river banks, and throughout the flat portions of the site above the riverbed. A drip irrigation system was also installed, then discontinued in December 2000 as it was no longer needed.

- **Robinson Bridge Site.** This site is located along the south bank, extending from the McLaughlin Road crossing to a point about one mile upstream. The District planted willows and cottonwoods in a 50-foot wide swath at the base of the existing banks, which are dominated by willow cottonwood woodland. The areas planted consisted of barren areas and a disturbed, low-terrace river channel with sparse willow and mulefat scrub. A total of 6.5 acres was planted in November 1998.

Annual status reports are prepared by the District for the above mitigation sites. The most recent available report (dated September 1999) indicated the following: (1) the method of installing willow cuttings into shallow trenches appears very successful compared to planting individual cuttings; (2) in general, growth of cuttings is acceptable; (3) weeding has been required at the H Street and Robinson Bridge sites, using both "weed-eaters" and herbicides; (4) vandalism is a problem at the H Street and Riverbend sites that requires constant repairs to the irrigation lines and replanting failed cuttings; and (5) the establishment of cuttings on the river channel terrace at the Robinson Bridge site has been poor due to the effects of scouring flood flows in 1998-99, and the lack of supplemental water in the first year. The latter area was replanted in late 1999. The District is actively assessing methods to correct the partial failure at this site.

Proposed Habitat Mitigation for Future Ongoing Clearing

The District mitigated for the long-term loss of riparian habitat in a 100-foot wide swath along the project reach by restoring willow and cottonwood woodland at the three mitigation sites described above. A total of 18 acres was planted in 1998, and is now being maintained by the District to compensate for the clearing of the project reach in 1992/93 and again in December 1997/January1998. The District must create self-sustaining riparian habitat within five years in accordance with the requirements of a 1601 Agreement with CDFG and the adopted mitigation in the 1997 EA prepared by VAFB. The mitigation sites will remain in a protected status for perpetuity.

The current riparian restoration efforts will increase the amount of riparian habitat along the lower river, compared to the pre-clearing conditions (i.e., in 1992). As such, the District has already mitigated for maintenance clearing along the project reach, and no further habitat mitigation is deemed necessary. It is the District's position that it would be unreasonable and unjustifiable under CEQA to require compensatory habitat mitigation for every clearing event in the future.

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4.0 PROPOSED UPDATED MAINTENANCE PROGRAM

4.1 OVERVIEW

The proposed updated maintenance program consists of the current program described in Section 2.0, with the following modifications or additional elements:

- Lower Santa Ynez River Maintenance. The District will include maintenance of the lower Santa Ynez River as described in Section 3.0. Maintenance of the lower river would occur on an as-needed basis. The requirement for maintenance would be evaluated annually in a separate, but concurrent process with the preparation of the Annual Plan for routine maintenance.

- New Mitigation Measures. The District will develop new mitigation measures to replace the current Standard Maintenance Practices, or SMPs. The objectives of developing new measures are to: (1) address new impact issues (such as impacts to new endangered species like the steelhead, or impacts to water quality); (2) consolidate the numerous SMPs into fewer measures for administrative efficiency; (3) eliminate mitigation measures from the 1991 Final EIR that are no longer applicable; (4) modify current mitigation measures to increase their effectiveness; and (5) include new mitigation measures to address new elements of the Maintenance Program.

- New Grade Stabilizers. The District will construct new grade stabilizers on maintained creeks if it is necessary to prevent severe bank erosion or channel headcutting that could threaten property or public infrastructure. See description of grade stabilizer options below in Section 4.2.

- Alternative Bank Protection Methods. The District will expand the types of bank stabilization used to include bio-technical methods. See description below in Section 4.3. The District will also limit the size of bank protection repair projects under the routine maintenance program, as described in Section 4.3.

- Modified Engineering Analysis. The District will consider various hydraulic factors when determining the need and extent of maintenance, using current principles of channel stability and geomorphology. See description below in Section 4.4.

- Account for Impacts and Functions. The District will estimate the area and function of habitat affected by maintenance activities in order to assist in the development of habitat restoration mitigation. See description below in Section 4.5.

- Updated Restoration Plan. The District will use an updated approach to habitat restoration that better reflects current planting methods and materials, as well as priorities for restoration. See description below in Section 4.5.

- **Include the Los Carneros Mitigation Bank**. The District will use the proposed Los Carneros Mitigation Bank for certain habitat restoration to mitigate for certain routine maintenance impacts, as described below in Section 4.8.

The program does not include emergency maintenance which consists of unplanned actions taken during flood events. This work may include removal of debris and sediment from channels, below bridges, and in basins. The material may be removed during high flows or immediately after storms have ended. Heavy equipment is used and material is hauled off site. Efforts are made to work when flows have receded to minimize sedimentation. Bank stabilization may be installed under emergency conditions, consisting of ungrouted rip-rap. To the extent feasible, the District conducts such work when flows have receded to minimize erosion and sedimentation impacts.

4.2 NEW GRADE STABILIZERS

The District routinely repairs existing grade stabilizers that are in disrepair, suffer storm damage, or become unstable due to undercutting. Under the proposed updated Maintenance Program, the District would have the option of installing a new grade stabilizer on an unlined channel if the District determines that it is necessary to prevent channel headcutting that could threaten public infrastructure by causing bank failure or excessive downstream sedimentation. Grade stabilizers would be used only if there was no other feasible action with equal benefits and fewer impacts.

Grade stabilizers would typically be constructed of grouted or ungrouted rip-rap or native rock. Stabilizers extend across the channel from bank to bank. They will be placed at the invert of the channel. A trench will be excavated across the channel to key the stabilizer to the channel and prevent uplifting. The depth of excavation will vary depending upon site conditions and expected flows, but typically would range from three to six feet. The stabilizer would be constructed to allow passage of fish and other aquatic organisms, avoiding vertical drops of more than 2 feet, to the extent feasible. Stabilizers will typically be three to 10 feet long (i.e., longitudinal to the creek). All grade stabilizer designs will be approved by the National Marine Fisheries Service and California Department of Fish and Game.

4.3 ALTERNATIVE BANK PROTECTION METHODS

The District stabilizes eroding banks by a variety of methods. A common method is to re-grade the banks to a more stable configuration, placing fill at the base or laying the slope back. In these instances, the District will also revegetate the slope with native plants (e.g., willow, mulefat, and others) to provide more stability from rooted plants. On more severely eroding slopes, "hard" bank protection is used such as ungrouted rip rap. Pipe and wire revetment is often used to protect eroding banks by deflecting flows and reducing energy, rather than placing protection on the banks themselves. In rare instances, the District may consider the use of grouted rip rap, concrete sackwalls, or gabion walls.

Under the current and updated Maintenance Program, riparian vegetation will be incorporated into ungrouted rip-rap by placing willow and/or mulefat cuttings amongst the rock. When installing pipe and wire revetment, the District will also plant the adjacent slopes with native plants. Incorporating plants into structural bank protection is called "bio-technical slope protection." Under the updated Maintenance Program, the District will consider the use of the following types of bio-technical methods when placing new slope protection for eroding banks.

1 Live Stakes. This is the simplest form of bio-technical slope protection in which live cuttings of willows, mulefat, or cottonwood trees are tamped into the banks to root, grow, and form a thicket of new trees. This method has been used by the District.

2 Joint Planting. Willows are planted amongst ungrouted rip-rap to create a bank with both rock protection and woody trees. In some instances, soil with willow cuttings is placed on top of ungrouted rip-rap. This method has been used by the District.

3 Anchored Cuttings. This technique employs large numbers of cuttings arranged in layers or bundles, which are secured to creek banks and partially buried. They provide direct protection from erosive flows, prevent overbank erosion, promote sediment capture, and quickly develop roots. The District has used this method previously.

4 Brush Layers. Cuttings of willow are placed into trenches cut into the bank so that the branches stick outward from the bank. Alternating layers of cuttings and soils are placed up the bank. This method has been used by the District.

5 Live Fascines. Fascines are dormant branch cuttings of willows bound together into long cylindrical bundles that are placed in shallow trenches parallel to the bank and buried. The branches will sprout and create a mass of new woody plants.

6 Brush Mattress. A combination of live willow stakes, fascines, and individual branch cuttings are interwoven and pinned to the bank with jute cord or wire held in place with metal stakes. The "mattress" is then covered with soil to facilitate sprouting of the willows.

7 Tree Revetment. A row of downed trees are laid parallel to the base of the bank and anchored together, and to the bank with steel cable. The trees reduce flow velocities along the base of the slope, trap sediment, and provide substrate for plant establishment.

8 Coconut Fiber Roll. Cylindrical structures composed of coconut husk fibers bound together with twine woven from coconut material are placed parallel to the slope to reduce erosion and trap sediments.

9 Reed Rolls. Soil and rootballs of herbaceous plants are placed into burlap rolls and partially buried and staked along the bank.

10 Geotextiles consist of plastic or biodegradable materials that hold soils in place to allow plants to become established through the mesh. There are many types of geotextiles available, designed for various flow conditions. Some are composed of plastics that will degrade from sunlight in 5 to 10 years, while others are made of jute or coconut fiber. For banks in very low flow conditions, geotextiles are placed across the face of a slope and cuttings or container plants are installed through the mesh. In more erosive

conditions, geotextiles are placed between brush layers that are buried in trenches on the bank. This method has been used by the District.

11 Live Cribwall. Hollow, box-like interlocking arrangements of timber are placed at the base of a slope that are filled with alternating layers of soil and live branch cuttings.

Repair and installation of existing bank protection under the updated routine maintenance program is limited to individual projects of less than 150 linear feet (including both sides of the banks). Projects with a greater length would be considered more than routine maintenance, and as such, would be implemented as stand-alone flood control improvement projects subject to separate environmental review.

4.4 MODIFIED ENGINEERING ANALYSIS

During the spring field assessments, District personnel examine creeks throughout the County to determine the need and extent of channel maintenance. The assessment primarily involves visual assessment of channel conditions to determine if there are problems such as bank erosion, excessive sedimentation, build up of obstructive or silt-trapping vegetation, presence of debris plugs, and blocked culverts. Maintenance actions are identified to address the problems; these actions may include brushing, spraying, channel shaping, desilting, and bank stabilization.

In the past 10 years, there has been a growing interest in the field of fluvial geomorphology - the science of the interaction between watershed characteristics, flows, and channel geometry. Geomorphological concepts are being applied to river and creek restoration projects with greater frequency, particularly the concept of the "bankful capacity" and sediment transport equilibrium. The District is interested in determining if such concepts and associated analytic tools will increase the efficiency and effectiveness of the maintenance planning and implementation program. Hence, the updated Maintenance Program will include a greater consideration of geomorphic factors in both the assessment phase, and in the selection of maintenance actions. The modified engineering analysis is presented in Section 5.1.3 as a mitigation measure for hydraulic impacts.

Under the modified engineering analysis, the District would evaluate the following key geomorphologic characteristics when determining the need, type, and extent of channel maintenance in creeks where natural geomorphic processes are still present: channel slope and sinuosity, channel bed substrate and roughness, vegetation roughness, bankful channel dimensions (when present), and bank substrate and hardness. Understanding these factors and noting their occurrence at maintenance sites will allow the District to make more informed decisions about the need and extent for maintenance activities that could affect channel geometry and hydraulic processes.

4.5 UPDATED HABITAT RESTORATION PLAN

The following plan provides guidelines on restoring riparian and wetland habitats associated with certain activities in the Routine Maintenance Program for non-exempt watercourses. Since 1992, the District has conducted habitat restoration to mitigate for routine maintenance activities along various creeks of Santa Barbara County. As a result, the District has accumulated significant experience in the development of restoration objectives, site selection, planting methods, plant maintenance, and monitoring. The District's habitat restoration efforts to date have been very successful, due in large part to the hands-on experience and observations by the District biologist and revegetation maintenance crews.

The following plan represents a modification of the current restoration practices of the District. It provides clarification on the maintenance activities that require mitigation; a new approach to determining restoration acreage; an update of the District's revegetation methods based on past experience; and use of the Los Carneros Mitigation Bank.

4.5.1 Maintenance Activities That Require Mitigation

There are three categories of maintenance activities that require habitat restoration to mitigate for the disturbance:

1. Temporary impacts to habitat in channels due to brushing, spraying, channel shaping, and desilting – all of which mimic natural disturbance processes in which floods scour vegetation
2. Temporary impacts to habitat in channels incidental to the construction of bank protection and grade stabilizers; and the repair of existing bank protection and grade stabilizers
3. Permanent impacts to habitat due to installation of bank protection, when the bank protection method precludes use of native vegetation.

A list of all maintenance activities that require habitat mitigation is provided in Table 4-1. Note that debris basin maintenance does not require mitigation because of the following reasons: maintenance at debris basins is an infrequent event; the affected habitats recover naturally over time at the basins; and there is a greater amount of riparian and wetland habitats in basins compared to natural conditions that offsets the periodic impacts.

4.5.2 Mitigation Objectives

The overall restoration goal is to replace the acreage of riparian and wetland habitats that are adversely affected by routine maintenance actions at or near the affected site through the creation of native habitat in disturbed areas (unrelated to the maintenance program). Only vegetated habitats that are affected would be mitigated. Replacement habitats would be willow scrub or woodland, mulefat scrub, and willow/cottonwood woodland.

In most cases, the District will restore habitat at or near the site of the maintenance activity. This approach ensures that adequate mitigation is achieved because the restoration is near the affected area. However, in the event that restoration is not feasible at the work site, then restoration will occur at a suitable location elsewhere along the affected drainage or its tributaries. Finally, if suitable sites for restoration are not available elsewhere along the affected drainage, the District will use habitat restoration credits at the Los Carneros Mitigation Bank, described in Section 4.8.

Although the District will observe the above sequencing of mitigation site selection, it retains the discretion at any time to implement offsite habitat mitigation at the Los Carneros Mitigation Bank rather than onsite restoration if the available mitigation sites at the maintenance area or along the affected drainage are very small, scattered, or otherwise poorly suited (e.g., near human disturbances) for restoration. The District has restored habitat along most of the maintained creeks; hence, many of the readily available and most suitable restoration sites have been treated. Much of what remains are small isolated restoration sites, sometimes as small as 10 by 30 feet. Restoring such small and scattered barren areas or eroded banks would have less benefit to wildlife than restoration of a site associated with a larger habitat area under a protected state (i.e., Los Carneros Mitigation Bank).

Mitigation for maintenance activities at a specific area will only occur once during the next ten years. That is, once habitat mitigation has been completed for maintenance activities along a specific reach of a drainage, no further mitigation is required for the next ten years for future maintenance of that same reach regardless of the type of future maintenance activity, provided the previous habitat mitigation has been successfully implemented, and the District continues to minimize habitat impacts to the extent feasible. This ten-year period begins with the formal adoption of the updated maintenance program. At the end of this ten year period, habitat mitigation would be required for maintenance work at all locations, even those areas where mitigation was previously completed. Mitigation will need to be repeated during the ten year period only if the planned maintenance activity will remove previously restored habitat, or if the previous restoration effort failed due to poor maintenance, flood flows, or vandalism.

All habitat mitigation completed over the past ten years under the current maintenance program and prior to the adoption of the updated routine maintenance program will not be considered for maintenance work under the updated program. Hence, no mitigation credits will be carried forward from the current program.

Habitat mitigation (i.e., compensatory restoration) will only be implemented when the maintenance activity affects areas with 10 percent or more vegetation cover, including both native and non-native species, with one exception. Compensatory habitat restoration would not occur for areas that are dominated by aggressive, noxious perennial weeds such as tamarix or giant reed. If this type of vegetation is removed as part of the maintenance program, the District will stabilize the maintenance site with native vegetation, rather than implement the above compensatory restoration.

4.5.3 Restoration of Areas Affected by Construction-Type Activities

Areas that are temporarily disturbed during construction-type activities would be revegetated. Construction activities include installation of bank protection, the repair of existing bank protection and grade stabilizers, or the use of upland areas for temporary stockpiling and dewatering of desilting spoils. Temporarily disturbed areas will be restored by seeding and/or planting, consistent with the pre-disturbance habitat conditions.

Areas that are temporarily disturbed during the construction of access ramps will be revegetated. The revegetation methods will vary depending on the design and location of the access ramps. Steep cut or fill slopes along all access ramps will be revegetated with native plants to provide slope protection. The District will also attempt to revegetate the road bed of access ramps to reduce erosion and sedimentation. The ramps will be seeded with low-growing riparian-related grasses and herbs such as saltgrass, melic grass, and mugwort. These plants will provide functional habitat between maintenance events. In general, it will not be necessary to remove these plants to allow access due to their low growth and absence of woody stems. The District will drive over these plants during infrequent maintenance activities; it is expected that the plants will recover quickly from such infrequent and minor disturbances.

4.5.4 On-Site Mitigation for Temporary Impacts to Channel Vegetation

This approach will be used when the affected area cannot be restored after maintenance. For example, revegetating a channel that was cleared of sandbars and excessive silt that reduced channel capacity could create silt-trapping vegetation, which will cause the original problem to reoccur as the vegetation develops. In this instance, it is more appropriate to restore habitat at another location where the new vegetation will not cause hydraulic problems that could lead to flooding and bank erosion. Restoration would occur elsewhere on the affected drainage.

This approach will be used as mitigation for all channel maintenance activities (e.g., spraying, brushing, channel shaping, desilting, etc.) that result in the removal of vegetative habitats that is temporary and reversible. These impacts are analogous to vegetation removal from natural flooding and scouring processes. This mitigation approach does not include permanent habitat impacts due to installation of bank protection (see Section 4.5.6 below).

Under this approach, the District Biologist will conduct a survey of the affected drainage to find areas of degraded aquatic, wetland, and riparian habitats due to factors unrelated to the current and past maintenance practices on the drainage. Based on field observations, opportunities to improve habitat conditions will be identified such as stabilization and revegetation of eroding banks; addition of understory plants or canopy trees to existing habitat; revegetation of barren areas or gaps in the riparian corridor; removal of stands of giant reed and replacement with native riparian trees; removal of non-functioning bank protection or channel bed lining and revegetation; eradication of invasive ornamental species such as ivy; and removal of significant in-stream pollution and debris that adversely affects aquatic or wetland habitat. The selection of a restoration treatment and site will be based on available opportunities along the project drainage or on a tributary. This approach is opportunistic in nature, tailored to each drainage. It is the same approach used by the District under the current maintenance program.

Under the updated Maintenance Program, the District will document the area (square footage) of vegetated native habitats affected by each maintenance action in the Annual Plan. The restoration site will encompass same area as the affected area to achieve a 1:1 replacement ratio. The replacement habitats would include common riparian vegetation types: willow or mulefat scrub, willow and cottonwood woodland, and riparian understory vegetation. The selection of habitats to be restored will be based on the characteristics of the available restoration sites. The District may "bank" mitigation acreage credit by restoring in excess of what is required in some years, then using these credits for mitigation in subsequent years.

4.5.5 Off-Site Mitigation for Temporary Impacts to Channel Vegetation

If a suitable restoration site cannot be located for habitat impacts described in Section 4.5.4, then the District will establish compensatory habitat at the Los Carneros Mitigation Bank (LCMB), or utilize "habitat credits" accumulated at the bank, as described in Section 4.8. The habitat replacement ratio using the LCMB will be 1:1 regardless of the vegetation type affected by maintenance activities, or the habitat created at the LCMB.

4.5.6 On-Site Mitigation for Permanent Impacts

This approach will be used as mitigation only for all channel maintenance activities that permanently remove vegetated habitat such as the installation of a grade stabilizer or bank protection. In these cases, habitat will be permanently removed from the drainage, and a more formal mitigation approach is required to ensure adequate habitat compensation. Under this approach, a site will be located on the affected drainage to create in-kind habitat at a 2:1 area replacement ratio, as described below. Suitable locations will be areas that are disturbed and devoid of vegetation, or areas with abundant non-native weeds, particularly giant reed. Conventional revegetation methods will be used, as described in Section 4.7. Specific replacement ratios to be used are listed below:

- A 2:1 replacement ratio will apply to habitat impacts from new grade stabilizers.
- The 2:1 mitigation ratio will apply to the following types of new bank protection: grouted rip rap, concrete sackwalls, gabion walls, soil cement, and gunite. The same ratio will apply to pipe and wire revetment if it does not include revegetating adjacent banks.
- A mitigation ratio of 1:1 or 2:1 shall apply to ungrouted rip-rap. A 1:1 ratio would apply if vegetation is fully incorporated in the rock face, while a range of ratios up to 2:1 would be used depending on the amount of vegetation used in the rock. A 2:1 ratio would be used for ungrouted rip rap with no vegetation.
- No habitat mitigation is required for bank protection that uses vegetation stabilization only, or 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.

TABLE 4-1
SUMMARY OF HABITAT MITIGATION

Maintenance Activity	Type of Impact to Habitat	Type of Habitat Mitigation to be Applied			
		Restoration of Affected Area	On-site Oppor-tunistic Restoration* (1:1 ratio)	Off-site Restoration at LCMB** (1:1 ratio)	On-site In-kind Restoration (2:1 ratio)
Selective Brushing of Obstructive or Silt-Trapping Vegetation					
Thin or remove channel bottom vegetation	Temporary, mimicking natural disturbance processes		X	(X)	
Herbicide Spraying of Obstructive or Silt-Trapping Vegetation					
Apply herbicide to channel bottom vegetation	Temporary, mimicking natural disturbance processes		X	(X)	
Channel Shaping and Bank Stabilization					
Remove or lower obstructive sandbars	Temporary, mimicking natural disturbance processes.		X	(X)	
Place fill at base of eroding banks or in scour holes	Temporary, mimicking natural disturbance processes.	X	(X)	(X)	
Excavate pilot or training channel	Temporary, mimicking natural disturbance processes		X		
Lower or flatten eroding banks	Temporary, mimicking natural disturbance processes.	X	(X)	(X)	
Grade new access ramp	Permanent.	X	(X)	(X)	
Install bank protection such as ungrouted or grouted rip-rap, pipe and wire revetment, concrete sackwalls, and willow plantings	Permanent (unless bio-technical method is used, in which case, no habitat mitigation is required).	X (work area)			X
Bank Protection and Grade Stabilizer Repair (Unlined Channels)					
Repair or replace grouted and ungrouted rip-rap, pipe and wire revetment,	Temporary construction related disturbance. No impact if habitat absent.	X			

Maintenance Activity	Type of Impact to Habitat	Type of Habitat Mitigation to be Applied			
		Restoration of Affected Area	On-site Oppor-tunistic Restoration* (1:1 ratio)	Off-site Restoration at LCMB** (1:1 ratio)	On-site In-kind Restoration (2:1 ratio)
and concrete sack walls					
Repair or replace grade control structures	Temporary construction related disturbance. No impact if habitat absent.	X			
Channel Desilting					
Collect and remove silt from channel bottom	Temporary, mimicking natural disturbance processes. No impact if habitat is absent.		X	(X)	
Basin Maintenance					
Clear outlet works of vegetation	Temporary, mimicking natural disturbance processes.	No habitat mitigation is required. The ecological benefits of the new riparian and wetland habitats created in the basins offset the adverse impacts of periodic pilot channel maintenance and desilting.			
Clear 15 to 30-foot wide pilot channel through the center of the basin	As above				
Clear inside face of the basin dams and a 10-foot wide zone at the base of the dam	As above				
Remove sediment once the design capacity has been reduced by 25 percent	As above				
Apply herbicides to vegetation near outlet works or to maintain the pilot channel	As above				

* Restoration at the LCMB would occur if suitable sites are not available along the affected drainage.
**LCMB = Los Carneros Mitigation Bank.
X= primary restoration approach. (X)= secondary restoration approach.

4.6 GUIDELINES FOR ASSESSING HABITAT FUNCTIONS (now deleted)

In response to comments on the Draft EIR, the District has decided to no longer base the habitat restoration approach on functions and values, and instead use specified habitat replacement ratios. Regardless of habitat functions of the affected area and the replacement habitat, the District will utilize habitat replacement ratios of 1:1 for temporary maintenance impacts (see Sections 4.5.4 and 4.5.5), and 2:1 for new hard bank protection or 1:1 for bio-technical bank protection (see Section 4.5.6).

4.7 REVEGETATION METHODS

A description of the various elements of revegetation to be used in the above restoration approaches is provided below. The precise revegetation methods and plant species to be used for each restoration project will depend on many site-specific factors. The following description provides overall guidelines in selecting the appropriate plant species and methods. Revegetation methods for the Los Carneros Mitigation Bank are described in 4.8.

Site Preparation

Site preparation will include removal of noxious or aggressive weeds and non-native vegetation, grading if necessary to create suitable contours and stable slopes, and/or soil ripping to reduce compaction. Weeding will usually be accomplished by a one-time removal by hand crews, but may require an application of herbicide.

Timing

Restoration projects will most often be implemented in early winter (November through February), concurrent with, or immediately after, maintenance activities. Planting in the winter will allow the installed plants to acclimate to the new conditions during a high moisture and low growth period. However, there are instances when the District would plant later in the spring and early summer.

Plant Installation

The District will use both cuttings and container plants. The former will be used in areas where a high density of plants will be installed, and moisture conditions are favorable. In contrast, container plants (mostly one-gallon size) will be used in lower density plantings where there may be greater moisture stress.

To install unrooted cuttings of willow and mulefat, young branches from these plants (30 – 48 inches long) will be cut from plants elsewhere on the drainage, stripped of leaves, and immediately placed into an augered hole. In some instances, cut stems will be bundled and placed in trenches, then covered with soil.

For container plants, holes will be dug 1.5 times the depth of the container, and twice the width of the root ball. Holes will be hand-dug or augered, then filled with water prior to planting if they are dry. Plants will be placed in the holes and backfilled by hand. The level of the soil around the root ball will match the surrounding grade. Plants will be watered immediately after planting. There are various container sizes, ranging from "D" pots or liners (about one pint in size) to 5 gallon containers. The choice of pot size will depend on the plant species and site conditions.

Some riparian restoration may require the use of seeds of grasses and certain herbs. Seeds will be hand broadcasted over small areas, or hydroseeded over large areas. If the former method is used, seeds will be raked into the soil and a tackifier will be applied afterwards to prevent erosion from rainfall. Hydroseed mixtures will also contain a tackifier and soil binder.

The density of plants installed will vary depending upon the habitat being created, size of plants, and site conditions. In general, willow and mulefat plants will be planted at 10 to 15 foot centers.

Plant Material

The District will utilize plant material derived from local genetic stock whenever feasible. The District has retained a landscaping contractor to collect seeds and cuttings from plants in the county to prepare container plants for use in restoration. Source material will often be derived from the same watercourse as the area affected. At a minimum, plant material used in a watercourse will be derived from the same region of the County (e.g., South Coast, Santa Maria, Los Alamos, Santa Ynez areas). Typical plants to be used in restoration are listed below. The number of species to be used at an individual restoration site will vary, but is typically 5 or 6 species.

Trees or Large Shrubs

Baccharis salicifolia	Mulefat
Platanus racemosa	Western sycamore
Populus trichocarpa	Black cottonwood
Salix lasiolepis	Arroyo willow
Sambucus mexicana	Elderberry
Quercus agrifolita	Coast live oak
Umbellaria californica	California bay

Wetland Plants

Cyperus eragrostis	Nutsedge
Carex barbarae or senta	Sedge
Eleocharis macrostachya or palustris	Common spikerush
Epilobium ciliatum	Willow herb
Juncus bufonius	Toad rush
Scirpus spp.	Bulrush
Typha latifolia	Cattail

Grasses

Distichlis spicata	Saltgrass
Melica imperfecta	Small flowered melic
Elymus condensatus	Giant ryegrass
Muhlenbergia rigens	Deer grass

Understory Shrubs

Ambrosia psilostachya	Western ragweed
Artemisia douglasiana	Mugwort
Lonicera subspicata	Honeysuckle
Mimulus aurantiacus	Sticky monkey flower
Mimulus cardinalis	Scarlet monkey flower
Rhamnus californica	California coffeeberry
Ribes speciosum	Fuschia flowered gooseberry
Rosa californica	California rose
Rubus ursinus	Blackberry

Other

Clematis ligusticifolia	Creek clematis
Symphoricarpus mollis	Snowberry
Sisyrinchium bellum	Blue-eyed grass

Monitoring and Maintenance

The District will monitor the installed plants for up to five years. The objectives of the monitoring are to monitor the success of the plants, and to identify problems that could impede performance. The District has retained a commercial landscaping firm to provide routine maintenance, including watering, weeding, and plant replacement. Watering will be typically provided by hand crews; drip irrigation will be used at larger sites or at sites where a water source is readily available. Restoration sites will be visited by the maintenance crew at least once every two weeks throughout the year. The District biologist will also examine the sites on a periodic basis. Weeds will be removed from the restoration site on an ongoing basis. Weeds are usually removed by hand or by selective hand spraying with herbicide.

The performance goals for all restoration sites are 70 percent survival by the end of the first year, and 90 percent survival by the end of the fifth year. Thereafter, the District no longer maintains the sites. The District will replant a restoration site on a one time basis if the site has been destroyed by vandals, flood flows, or inadvertent actions by the landowner.

The District will prepare an annual Maintenance and Revegetation Report after the maintenance projects for the year have been completed, documenting the work accomplished including restoration projects. The report will also include a review of the status of all previous habitat restoration projects that are being maintained.

Other Restoration Requirements

The District's Programmatic Streambed Alteration Agreement with the California Department of Fish and Game (CDFG) for the routine maintenance program includes specific requirements related to habitat restoration which are listed below. The proposed restoration plan incorporates these requirements by reference.

27. *Restoration shall include the revegetation of stripped or exposed areas with vegetation native to the area.*

44. *If mature perennial native trees have been removed from the stream banks, bed or channel, they shall be replaced in-kind, in a nearby location and maintained until established, as specified in the [Annual Plan] approved by the Department and as specified in the following conditions.*

46. *In order to determine if the revegetation techniques used have been successful any plant species required that are listed below shall achieve the [following] minimum growth at the end of three and five years.* {continued, with minimum height requirements for 3 and 5 years for willow, sycamore, cottonwood, alder and oak trees}

47. *All planting shall have a minimum of 70% survival the first year and 100% survival thereafter and/or shall attain 75% cover after 3 years and 90% cover after 5 years. If the survival and cover requirements have not been met, the Operator is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.*

48. *All plantings shall be done after the first rains, between October and May 1, to take advantage of the winter rainy season, unless local water supplies are adequate to assure survival or irrigation is provided, during periods when moisture is inadequate, to assure survival.*

51. *All oaks, sycamores, cottonwoods, and willows with a diameter at breast height greater than five (5) inches, removed/damaged during flood control activities, shall be replaced, in kind, at a 5:1 ratio to compensate for planting mortality and to accelerate recovery of standing stock biomass. Replacements shall be planted on a nearby bank, or other location approved by the Department, where they will not be disturbed by future maintenance activities. The Operator shall irrigate replacement plants during intervals when natural moisture conditions are inadequate for survival, until plants become established.*

52. *Where feasible, saplings of trees such as sycamores, cottonwoods, and/or willows, which must be removed from the bed of the stream to prevent diversion of flood flows and bank erosion, shall be reserved and used, on-site, for revegetating slopes or shall be transplanted to revegetate a site(s) specified in the [Annual Plan] approved by the Department.*

53. *Replacement tree stock may also be grown from cuttings collected from randomly selected individuals of the same species occurring in nearby locations within the same stream. Plants may also be obtained from a native plant nursery. No plants shall be inoculated to prevent heart rot.*

4.8 LOS CARNEROS MITIGATION BANK

The District proposes to create a riparian habitat mitigation bank at the 153-acre Lake Los Carneros County Park, located in Goleta. The District prepared a draft plan for the Los Carneros Mitigation Bank (LCMB) in June 2000. A copy of the plan is provided in Appendix D.

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5.0 ENVIRONMENTAL SETTING, IMPACTS, & MITIGATION – ROUTINE MAINTENANCE PROGRAM

This document represents an update of the previous Program EIR. It was designed to: (1) address potential new impacts due to changed circumstances; (2) refine the previous impact assessment based on nine years of field observations; and (3) improve and expand (as necessary) the previously-defined mitigation measures.

The following impact analysis is programmatic in nature, addressing categories of impacts on broadly defined environmental resources of the County's maintained watercourses. The environmental baseline is the current condition of these watercourses – that is, drainages which exhibit a wide range of conditions ranging from undisturbed to highly disturbed (due to disturbances from natural flood events, periodic maintenance, or other human actions). The nature and extent of potential impacts are described, including the range of severity and frequency. Whenever possible, the most severe potential impacts are identified, even if their occurrence is rare or highly localized.

The impact assessment supercedes the analysis in the 1991 Program EIR. Many of the previously identified impacts no longer apply because the current maintenance program does not include the activities described in the impact. For other impacts, the described effect has not been observed over the past nine years of maintenance by the District, permitting agencies, or EIR preparers. In these cases, the original impact predictions proved to be inaccurate, or overstated. Hence, these impacts are no longer carried forward into this EIR. New impacts not identified in 1991 are included in the following analyses.

The environmental impacts are classified in the manner shown below. An impact was determined to be significant using guidance from: (1) the definitions of "significance" in the *CEQA Guidelines* (Sections 15064, 15065) and *CEQA Statute* (Public Resource Code 21088; (2) the thresholds used in the updated *CEQA Guidelines Environmental Checklist*; and (3) the thresholds of significance in the County's *Environmental Thresholds and Guidelines Manual, 1995 version*).

Class I Impacts. Unavoidable significant impacts. For these impacts, the District must issue a "Statement of Overriding Considerations" under Section 15092 (b) of the *CEQA Guidelines* if the project is approved.

Class II Impacts. Significant environmental impacts that can be mitigated. The District must make "findings" under Section 15091(a) of the *CEQA Guidelines* if the project is approved.

Class III Impacts. Other environmental impacts that are potentially adverse but not significant. Mitigation measures are recommended to minimize adverse impacts.

Class IV Impacts. Beneficial impacts.

The recommended mitigation measures are designed to avoid or reduce significant impacts. In addition, many mitigation measures have been developed for adverse, but less than significant impacts (Class III) in order to reduce the magnitude of these impacts to the extent feasible. The original mitigation measures from the 1991 Program EIR (called Standard Maintenance Practices, or SMPs) were analyzed for their applicability in light of the new impact assessment. In some cases, the original SMP was retained, while in other cases they were either dropped because they no longer applied, or were revised into more efficient mitigation measures based on the District's experience since 1991.

For the sake of convenience to the reader, the impacts of the maintenance along the Lower Santa Ynez River are evaluated separately in Section 6.0. These maintenance activities are proposed to be included in the overall routine maintenance program.

5.1 WATER RESOURCES - HYDROLOGY AND HYDRAULICS

5.1.1 Existing Conditions

5.1.1.1 South Coast Drainages

Overview

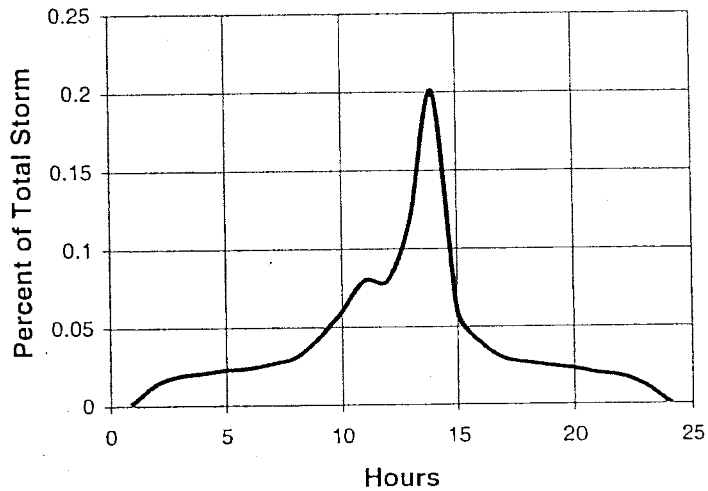
South Coast watersheds typically are pear-shaped with the bulk of the drainage area located within the rocky, steep slopes of the Santa Ynez Mountains. Hillside slopes in this area are typically 10 percent and steeper. The smaller portion of the drainage area lies within the coastal shelf with slopes of 2 percent and flatter. The watersheds are relatively small, typically ranging from 4 to 8 miles from the top of the mountains to point of discharge at the Pacific Ocean. This results in high intensity, short-duration runoff events which encourage significant erosion from the mountainsides. Mountain slopes are uplifted sedimentary formations comprised of various sandstones and shales. The foothills typically are covered with a conglomerated mix of rock and sediment washed from the mountains. The coastal plains are generally composed of alluvial sediments.

Precipitation amounts and patterns are significantly affected by the topographic features of the area. Average annual rainfall on the coastal plain (elevation 5-60 ft) is about 17 inches while at the ridgeline of the Santa Ynez Mountains it is close to 31 inches. About 85 percent of the annual rainfall occurs within the months of October through May (Table 5-1).

TABLE 5-1. AVERAGE ANNUAL RAINFALL DISTRIBUTION - SOUTH COAST

	San Marcos Pass (Sta 390)	Juncal Dam (Sta 331)	El Estero Trmt Plant (Sta 339)	Montecito Water District (Sta 325)
Elevation	2,200	2,060	5	
Years of Record	45	74	128	75
September	0.00	0.00	0.00	0.00
October	0.49	0.44	0.39	0.32
November	2.69	2.16	1.13	1.50
December	4.11	3.98	2.55	2.85
January	5.71	4.98	3.10	3.28
February	6.51	5.81	3.21	3.68
March	4.62	4.28	2.53	2.83
April	1.65	1.59	0.83	0.99
May	0.19	0.15	0.13	0.13
June	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00
Total=	30.73	27.49	16.57	18.49

As mentioned previously, the rainstorms tend to be very flashy, with high intensity rainfall over a very short duration. The District has found that the storms in the South Coast area are typically about 24 hours in total duration with a very narrow and high peak. The typical storm is shown below:



Runoff from this type of rainfall event creates hazards which include inundation of overbank areas, debris in the water that plug culverts and bridges, erosion and sloughing of banks, loss of channel capacity due to sedimentation. Runoff gaging in several watersheds has been summarized in Table 5-2.

TABLE 5-2
SOUTH COAST PEAK RUNOFF SUMMARY

	Mission Creek	San Jose Creek	Tecolotito Creek
Drainage Area, acres	5,363	3,844	3,270
Years of Record	29	58	9
2-year	518	390	295
5-year	1,310	930	828
10-year	2,160	1,420	1,400
50-year	5,430	2,860	3,480
100-year	7,590	3,610	4,780

Given the debris load potential, the apparent runoff (water plus debris) can sometimes be as much as 1.5 times the water-only runoff. This is particularly severe at the interface between the foothills and the coastal plain. In order to minimize debris blockages, a number of debris basins have been constructed on the South Coast. They collect cobbles, rocks, and debris and allow wash load sediments to pass through. Most of these basins were constructed after major wildfires to prevent post-fire damages. Basins included in the maintenance plan are listed below:

- Gobernador Ck
- Franklin Ck
- Santa Monica Ck
- Arroyo Paredon
- Toro Canyon (3)
- Romero Canyon
- Lillingston Creek
- San Ysidro Ck
- Cold Springs Ck
- Rattlesnake Canyon
- Mission Canyon
- San Roque Ck
- San Antonio Ck
- Maria Ygnacio Ck (2)

The location of natural creek channels on a coastal shelf will shift from time to time. However, with urbanization of the coastal shelf and construction of roads, culverts, homes and businesses, most creek channels have been stabilized in such a way that they will continue to flow in the same alignment. Methods of stabilization include rock rip-rap, pipe and wire revetment, and concrete. South Coast creeks that have significant portions lined with concrete are noted in Table 5-3.

TABLE 5-3
MAJOR LINED CREEK CHANNELS ON THE SOUTH COAST

Creek	Description
Carpinteria	Side lined upstream of railroad and downstream of 6th St
Franklin	Fully lined upstream of railroad to Casitas Pass Rd
Santa Monica	Fully lined upstream of railroad to debris basin
Romero	Fully lined downstream of railroad to the ocean
Montecito	Fully lined downstream of railroad to the ocean
Mission	Fully lined Canon Perdido to above Arrellaga St
Las Positas	Fully lined upstream of Veronica Springs Rd to Modoc Rd
Arroyo Burro	Fully lined between US101 and Hope Ave
Hospital	Fully lined between Atascadero Ck and Hollister Ave
Atascadero	Various locations between Turnpike Rd and Patterson Ave
San Jose	Fully lined between Hollister Ave and South St.
San Pedro	Fully lined between US101 and Covington Ave
Carneros	Fully lined between Hollister Ave and US101

Description of Individual Drainages

Carpinteria Area

Carpinteria Area creeks include Carpinteria Creek, Franklin Creek, Santa Monica Creek, and Arroyo Paredon. The watersheds go from the ridgeline of the Santa Ynez Mountains (elevation 4,000) and end at the Pacific Ocean. Watershed areas range up to 9,700 acres in Carpinteria Creek. The majority of the watershed area tends to be in the rugged mountain and foothill areas.

Stream slopes in these areas exceed 10 percent. The lower watershed is composed of a broad, relatively flat shelf which is mostly urbanized.

The mountains serve as source material for most of the sediments carried down the creeks. Formations include a variety of shales and sandstones. The softer and finer-grained shales tend to reduce to silts and clays. The sandstones are generally more resistant to weathering and form the bulk of the coarser materials. Sediments are generally carried down from the upper watershed and deposited in the lower watershed or discharged to the ocean during runoff events.

Channel forming flows or frequent flows which do most of the sediment moving (typically about a 2-year event or 50 percent exceedance interval) are estimated to be 0.04 cfs per tributary acre for these watersheds. Less frequent and more destructive flows may range from 1.2 to 1.7 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event).

Franklin Creek and Santa Monica Creek had been subject to frequent and serious flooding during the 1950s and 60s. Flood control projects for these creeks resulted in the construction of concrete-lined channels through a significant portion of the lower watersheds.

Montecito Area

Montecito Area creeks include (among others) Toro Canyon, Romero/Picay Creeks, Buena Vista Creek, San Ysidro Creek, Oak Creek, and Montecito/Cold Springs/Hot Springs Creeks. The populated areas generally extend to higher elevations on the watershed than the Carpinteria area and the lower watershed shelf is reduced and much steeper, formed as a fairly stable alluvial fan. Creeks tend to be identified by several interconnected creeks (ie Montecito/Cold Springs/Hot Springs). The watersheds go from the ridgeline of the Santa Ynez Mountains (elevation 3,500) and end at the Pacific Ocean. Watershed areas range from about 1,000 acres (Oak Creek) to 4,300 acres (Montecito/Hot Springs/Cold Springs Creeks). The majority of the watershed area tends to be in the rugged mountain and foothill areas. Stream slopes in these areas exceed 10 percent. The lower watershed is composed of broad, rolling hills sloping at about 2 to 3 percent. Lower density residential urbanization has occurred in the lower watershed and to a lesser extent, at the lower elevations of the upper watershed.

The mountains serve as source material for most of the sediments carried down the creeks, as described above for the Carpinteria area, except that the lower watershed sediments are formed of rock and cobble-filled former alluvial sediments.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) range from 0.16 to 0.30 cfs per tributary acre for these watersheds. Less frequent and more destructive flows may range from 1.0 to 1.9 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event). Creeks are crossed at numerous locations with bridges and culverts that are susceptible to debris blockage during heavier rainfall events. These creeks transport significant amounts of sediment which tends to settle out in debris basins or in channels, reducing capacity and causing flooding.

Santa Barbara Area

Santa Barbara Area creeks include Sycamore Creek, Mission Creek/Rattlesnake Creek, and Arroyo Burro/San Roque Creek/Barger Canyon Creek. The populated areas extend half way up the watershed. The lower watershed shelf is broad, consisting partially of uplifted mesas and highlands adjacent to the ocean (due to faulting activity). The localized elevated lands have tended to divert the location of discharge, increasing the flow length and reducing the creek slope. The watersheds go from the ridgeline of the Santa Ynez Mountains (elevation 4,000) and end at the Pacific Ocean. Watershed areas range from about 2,500 acres (Sycamore) to 14,000 acres (Mission). The upper watershed area tends to be rugged and steep (mountain and foothill areas). Stream slopes in these areas exceed 10 percent. The lower watershed is composed of a broad coastal shelf. High-density commercial and residential urbanization has occurred in the lower watershed with large lot residential development occurring in the upper watershed.

The mountains serve as source material for most of the sediments carried down the creeks. Formations include a variety of shales and sandstones. The softer and finer-grained shales tend to reduce to silts and clays. The sandstones are generally more resistant to weathering and form the bulk of the coarser materials. Sediments have historically been carried down the upper watershed and deposited in the lower watershed within coastal lagoons or discharged to the ocean during larger runoff events. In the last several hundred years, the coastal lagoons have been filled as part of the human activities and natural processes, and are now occupied by residential and commercial development.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) range from 0.04 to 0.16 cfs per tributary acre for these watersheds. Less frequent and more destructive flows may range from 0.52 to 1.9 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event). Due to the increased stream length and reduced slope, channels in the lower watershed tend to have lower flood carrying capacities. This combined with the highly urbanized nature of the lower watershed provides opportunities for flooding on a relatively frequent basis.

Goleta Area

Goleta Area creeks include Atascadero/Cieneguitas/Hospital Creek, Hospital Creek, Maria Ygnacio Creek, San Antonio Creek, San Jose Creek, Las Vegas Creek, San Pedro Creek, Carneros Creek, and Tecolotito Creek. All of these creeks drain into the Goleta Slough along with Atascadero Creek and discharge to the Pacific Ocean. As with other areas along the South Coast, populated areas are confined to the lower watershed, which is a broad, relatively flat shelf.

Uplifting along the coast has blocked flows, thus diverting and funneling all flows out to the ocean in one place. The localized elevated lands have tended to divert the location of discharge, increased the flow length and reduced the creek slope. The watersheds go from the ridgeline of the Santa Ynez Mountains (elevation 3,000) and end at the Pacific Ocean. Watershed areas range from about 5,500 acres (Las Vegas/San Pedro) to 7,800 acres (Maria Ygnacio) for an aggregate tributary area of 30,880 acres (48.2 square miles) at the point of discharge of Atascadero Creek into the Pacific Ocean. The upper watershed area tends to be in the rugged mountain and foothill areas. Stream slopes in these areas exceed 10 percent. The lower watershed is composed of a broad coastal shelf. High-density commercial and residential urbanization has occurred in the lower watershed with large lot residential development and agriculture occurring in the lower portion of upper watershed.

The mountains serve as source material for most of the sediments carried down the creeks. Formations include a variety of shales and sandstones. The softer and finer-grained shales tend to reduce to silts and clays. The sandstones are generally more resistant to weathering and form the bulk of the coarser materials. Sediments have historically been carried down the upper watershed and deposited in the lower watershed within the Goleta Slough or discharged to the ocean during larger runoff events. In the last hundred years, much of the Goleta Slough has been filled as part of the human activities and natural processes. It now requires significant effort to maintain clear channels to prevent flooding of the low-lying areas and further degradation of the estuarine habitat.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) range from 0.05 to 0.40 cfs per tributary acre for these watersheds. Less frequent and more destructive flows vary significantly, depending on the type of tributary land development. Watersheds with a large non-urban component may range from 0.5 to 1.2 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event) with an average of 0.94 cfs per acre. More heavily urbanized watersheds may range from 1.5 to 3.0 cfs per acre with an average of 2.23 cfs per acre. Due to the increased stream length and reduced slope, channels in the lower watershed tend to have lower flood carrying capacities. This combined with the highly urbanized nature of the lower watershed provides opportunities for flooding on a relatively frequent basis.

Ellwood/Winchester Area

The Goleta/Winchester Area creeks include Devereaux/El Encanto Drain, Winchester Creek and Tecolote Creek. Within this area, the coastal shelf narrows considerably. Valley slopes tend to be steeper and more incised. The watersheds go from the ridgeline of the Santa Ynez Mountains (elevation 3,000) and end at the Pacific Ocean. Watershed areas range from about 3,500 acres to 4,000 acres. The upper watershed area tends to be in the rugged mountain and foothill areas. Stream slopes in these areas exceed 10 percent. The lower watershed is composed of a narrow coastal shelf. Low-density residential urbanization has occurred in the valley floor. Agricultural development also occurs throughout the valley floor.

The mountains serve as source material for most of the sediments carried down the creeks.

Formations include a variety of shales and sandstones. The softer and finer-grained shales tend to reduce to silts and clays. The sandstones are generally more resistant to weathering and form the bulk of the coarser materials. Shales and claystone are predominant in the lower watershed. Weathered hillside sediments from these formations tend to be unstable, producing minor slippages and slides.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) are estimated to be 0.18 cfs per tributary acre for these watersheds. Less frequent and more destructive flows are estimated at 1.15 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event). Due to human activities in the watershed, the creeks in this area have experienced significant channel degradation over a number of years in the valley floor. This has left channels deeply incised and with banks occasionally undercut.

It should be noted that there are creeks on the South Coast that do not require maintenance.

5.1.1.2 North County Drainages

Overview

North County watersheds tend to be much larger, longer and narrower than the South Coast watersheds. The bulk of the watershed is contained in the upper mountainous areas, generally within the Los Padres National Forest. Hillside slopes in this area are typically 10 percent and steeper. The lower portions of the watersheds tend to broaden out into level valley floors which have historically been floodplains. The watersheds of the rivers in the North County are long, typically ranging from 30 to 70 miles from the top of the mountains to point of discharge at the Pacific Ocean. Watersheds with these characteristics generally respond to extended rainfall, which is usually less intense than the coastal events. The creeks which drain to the major streams and rivers are significantly shorter and have a quicker response time. There are two river systems (Santa Maria and Santa Ynez) with numerous tributaries, as described below.

Mountain slopes are uplifted sedimentary formations comprised of various sandstones and shales. The foothills are typically rounded uplifted marine sediments with some volcanic extrusions. The coastal plains are generally composed of alluvial sediments and ancient sand dunes. The coastlines have significant dune formations.

Precipitation amounts and patterns are significantly affected by the topographic features of the area. Average annual rainfall in the lower valleys (elevation 100-200 ft) is 13 - 15 inches while at the ridgeline of the mountains it is close to 31 inches. Between 70 and 85 percent of the annual rainfall occurs within the months of October through May (Table 5-4).

TABLE 5-4
AVERAGE ANNUAL RAINFALL DISTRIBUTION - NORTH COUNTY

	Santa Maria (Sta 380)	Lompoc Flood Control (Sta 439)	Figueroa Mountain (Sta 421)
Elevation	224	100	3,200
Years of Record	77	29	39
September	0.00	0.00	0.00
October	0.38	0.26	0.49
November	0.86	1.10	2.07
December	1.82	2.13	2.63
January	2.23	2.53	3.39
February	2.36	2.70	3.95
March	2.12	2.72	3.72
April	0.75	0.63	1.17
May	0.09	0.08	0.16
June	0.00	0.00	0.00
July	0.00	0.00	0.00
August	0.00	0.00	0.00
Total=	12.70	14.36	21.09

Runoff from the North County drainages creates wide meandering streams and broad floodplains in the lower reaches of the rivers. Debris, rocks and cobbles tend to drop out in the upper watershed, leaving significant flows of coarse and fine sediments to be carried out to the ocean. Some of these sediments are commercially mined at various locations in the riverbeds. As the creeks and rivers enter the lower watersheds, significant degradation and aggradation of channels (particularly in urban areas) becomes common. Runoff gaging in several watersheds has been summarized in Table 5-5

TABLE 5-5
NORTH COUNTY PEAK RUNOFF SUMMARY

	Santa Ynez River	San Antonio Creek	Orcutt Creek	Santa Maria River
Drainage Area, acres	537,600	27,520	12,480	1,129,000
Years of Record	20	39	12	43
2-year	1,300	234	170	465
5-year	12,000	858	618	7,410
10-year	34,000	1,720	1,200	25,100
50-year	93,000	5,950	3,720	150,000
100-year	118,000	9,290	5,520	256,000

Data from Penfield & Smith (in house files)

The location of natural creek and river channels within the lower valley areas will shift from time to time. However, with urbanization of the coastal shelf and construction of extensive roads, culverts, homes and businesses, most creek channels have been 'stabilized' in such a way that they will continue to flow in the same alignment. In particular, the Santa Maria River has been subject to a stabilization project extending several miles from Fugler Point to the City of Guadalupe. The project consists of a rock-lined levee, reinforced with rock groins. Without this levee system, the floodplain of the Santa Maria River would extend through downtown Santa Maria and remove many square miles of valuable farmland from cultivation. Natural stream channels have generally given way within these valley bottom agricultural areas to graded ditches. The use of channel hard bank stabilization within agricultural fields is minimal, with sheet flow, and roadways being used to carry storm flows when roadside ditches and channels are filled. North County creeks that have significant portions lined with concrete or rock are noted in Table 5-6.

TABLE 5-6
EXAMPLES OF LINED CHANNELS IN THE NORTH COUNTY

Creek	Description
Santa Maria River	Rock-lined levee system
Bradley Channel	Fully lined from Blosser Basin to Betteravia Road
West Main Street Channel	Fully lined from Main Street to Santa Maria River
Rodeo-San Pasqual	Fully lined
Miguelito Channel	Fully lined from foothills to Santa Ynez River
Santa Ynez River	Rock-lined levees and pile retards at various locations
Blosser Channel	Fully lined from Blosser Basin to Fesler Rd
Waller Skyway Channel	Fully lined

Description of Individual Drainages

Santa Maria/Orcutt Area

Santa Maria/Orcutt Area drainages include the Santa Maria River, Orcutt-Solomon Creek, Pine Canyon Creek, Green Canyon, Corralitos Creek, and numerous agricultural ditches. Most of these drainages join the Santa Maria River at the Guadalupe Sand Dunes and discharge to the Pacific Ocean. The major population centers in the valley are the City of Santa Maria, the community of Orcutt, and the City of Guadalupe. Outside of these populated areas, land uses are generally agriculture, grazing or open space.

The Santa Maria Valley is very broad and relatively flat. Within the more populated areas, the Santa Maria River is confined by levees and runs along the northerly side of the valley while the southerly side of the valley is flanked by Orcutt/Solomon Creek. A number of smaller tributaries feed from the southerly foothills into Orcutt/Solomon Creek. Pine Canyon Creek and Corralitos Creek are typical of these types of tributaries. The mouth of the Santa Maria River is constricted by the formation of wind-blown dune features known as the Guadalupe Dunes. It is evident that over long periods of time, the mouth of the Santa Maria River has shifted. However, within historic periods, it has remained fairly constant.

The Sisquoc River and the Cuyama River combine to form the Santa Maria River. The Santa Maria River watershed begins at the ridgeline of the Sierra Madre Mountain Range (headwaters of the Sisquoc River) and the San Rafael Mountain Range (headwaters of the Cuyama River at elevation 6,000) and goes to the Pacific Ocean. Twitchell Reservoir, a flood control and water conservation facility is located on the Cuyama River. The entire Santa Maria River watershed is comprised of about 1,750 square miles. Most of the upper watershed is within the National Forest. A portion of the watershed is controlled by Twitchell Dam. The Orcutt/Solomon Creek watershed is 24,000 acres and the Corralitos watershed is about 3,000 acres.

The upper watershed area of the Santa Maria River (above Fugler Point) tends to be rugged and mountainous. The average stream slope above Fugler Point is 2.6 percent.

Below Fugler Point the average stream slope is 0.3 percent. Foothill watersheds tend to be small extending several miles upstream. Stream slopes in these areas exceed 10 percent. The Santa Maria River below Fugler Point widens significantly and becomes braided within levees. Populated valley areas have been protected from flood waters by the construction of rock-lined levees.

The lower Santa Maria Valley floor is comprised largely of an extensive layer of alluvial sands, occasionally interspersed with gravels. The southerly foothills soils tend to be comprised of clays and silts which are formed from the slightly metamorphosed marine formations of the Casmalia Hills.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) are about 0.09 cfs per tributary acre for the smaller urban watersheds and less for the less urbanized watersheds. Less frequent and more destructive flows may range from 0.5 to 1.0 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event). However, gaging data is limited. Due to the sinuous stream characteristics, frequent culverts and the very mild slopes, channels in the lower watershed tend to carry only the more frequent storm flows with the larger events overflowing into the agricultural fields and roads.

Los Alamos Valley

Los Alamos Area creeks include San Antonio Creek and a tributary, Harris Creek, and East Ditch. San Antonio Creek receives drainage from the Solomon Hills on the east, the Orcutt Hills on the north, and the Purisima Hills on the south. Harris Creek receives flows from the Orcutt Hills and then joins San Antonio Creek near the Barka Slough. From this point San Antonio Creek flows approximately 11 miles west and discharges to the Pacific Ocean.

The Los Alamos Valley is broad and flat at the floor with mild, sloping hillsides. The valley floor and slopes are generally occupied by agricultural development. Recently, large areas of valley slopes have been intensively cultivated in grapes. Slopes are unstable due to the constant cultivation and characteristics of the alluvial sands and gravels. The parent material for the soils on the valley slopes is Careaga Sandstone and the Paso Robles Formation. Both of these formations are only weakly consolidated and subject to natural erosion.

The Harris Creek watershed begins at ridgeline of the Orcutt Hills/Casmalia Hills at Mount Solomon (elevation 1,350) and go to the confluence with San Antonio Creek just upstream of the Barka Slough (elevation 300). The Harris Creek watershed is comprised of less than 5 square miles (3,200 acres). The average stream slope is 0.8 percent.

The San Antonio Creek watershed begins at elevation 300 and reach elevations as high as 1,400 in the Solomon Hills. The watershed is comprised of over 43 square miles (27,520 acres) of drainage area.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) in San Antonio Creek are about 0.004 cfs per tributary acre according to gaging data. Less frequent and more destructive flows may range from 0.2 cfs to 0.6 cfs per tributary acre for a runoff event with a one percent chance of occurring in any particular year (100-year storm event).

Lompoc Area

Lompoc Area creeks include the Upper Miguelito Creek, Cebada Canyon, Pursisima Channel, Lilley-Hayes Ditch, East-West Ditch, Santa Rosa Creek, and Rodeo San-Pasqual Channel. Upper Miguelito Creek is located in the Lompoc Hills, south of the City of Lompoc. It discharges to the lower Santa Ynez River and then to the Pacific Ocean. Upper San Miguelito Creek watershed is rural in nature, outletting to the Santa Ynez River through the City of Lompoc. Cebada Canyon is located northeast of the City of Lompoc and drains from the ridgeline of the Purisima Hills into the Santa Ynez River.

The Miguelito Creek Valley is relatively narrow and winding with steep chaparral-covered slopes. Slopes are unstable due to the nature of the clay soils. The parent rock material for the soils consists of Monterey and Sisquoc Shales. Cebada Canyon soils are generally weakly consolidated sands, silts and gravels. These materials are extremely susceptible to erosion.

Miguelito Creek watershed begins at the ridgeline of the Santa Ynez Mountains (elevation 2,000) and runs to the Santa Ynez River at Lompoc (elevation 150). The entire San Miguelito Creek watershed is comprised of about 7.3 square miles (4,700 acres). The average stream slope above the City of Lompoc is 3.2 percent.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) are about 0.12 cfs per tributary acre. Less frequent and more destructive flows may exceed 1.57 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event). However, gaging data is limited. Due to the sinuous nature of the creek, unstable soils, and the narrow valley bottom, inundation of roads and culverts, slides and bank erosion during severe runoff events has been frequent.

Buellton Area

Zaca Creek, Ballard Creek, and Thumbelina Creek are the only creeks in the Buellton Area. Zaca Creek watershed reaches into the peaks of the San Rafael Mountains on the east and receives drainage from numerous smaller watersheds in the Purisima Hills. Zaca Creek discharges into the Santa Ynez River near the City of Buellton, approximately 24 miles from the Pacific Ocean.

The Zaca Creek Valley is fairly narrow with steep sloping sides. The valley floor and slopes are generally used for cattle grazing. Recently, the valley has seen an increase in grape cultivation as seen along portions of US101 and Foxen Canyon Road. The parent materials for the soils are the Paso Robles Formation and the Monterey Shale. Ballard and Thumbelina creeks have much smaller watersheds.

The Zaca Creek Watershed begins at elevation 318 within the City of Buellton and reaches elevations as high as 4340 (Zaca Peak) in the San Rafael Mountains above Zaca Lake. The watershed is comprised of over 35 square miles (22,400 acres) of drainage area.

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) in Zaca Creek are about 0.013 cfs per tributary acre according to gaging data. Less frequent and more destructive flows may range from 0.20 cfs to 0.56 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event).

Ballard and Thumbelina creeks have their headwaters in the Purisima Hills behind Buellton. Thumbelina Creek has a watershed of 3.5 square miles and a length of about 4 miles at its point of discharge to the Santa Ynez River. Ballard Creek is similar in size with a length of about 6.5 miles.

Solvang/Santa Ynez

Solvang Area creeks include Alamo Pintado Creek and the much smaller Adobe Creek and Zanja de Cota. Alamo Pintado Creek watershed reaches into the peaks of the San Rafael Mountains on the east and receives drainage from numerous smaller watersheds. The creeks discharge into the Santa Ynez River near the City of Solvang, approximately 27 miles from the Pacific Ocean.

The Alamo Pintado Creek Valley is long and shallow with mildly sloping sides. The valley floor and slopes are generally used for cattle grazing, agriculture, and residential ranchettes. The parent materials for the soils are the Paso Robles Formation and the Monterey Shale.

The Adobe Creek Valley is much shorter and is situated near the City of Solvang. The valley bottom area is quite limited and the side slopes are fairly steep but developable. Historically the valley had been used for cattle grazing. Recently, urbanization has been significantly encroaching into the lower and middle reaches of the valley floor and slopes. The parent materials for the soils are older alluvial sediments comprised of gravel, sand and clay. Soils are typically unstable in the canyon and susceptible to shrinkage and expansion as well as minor slippages.

The Alamo Pintado Creek watershed begins at elevation 400 near the City of Solvang and reaches elevations as high as 4,558 (Figueroa Mtn) in the San Rafael Mountains. The watershed is comprised of over 40.5 square miles (26,000 acres) of drainage area. Adobe Creek begins at elevation 360 just downstream of the City of Solvang and extends about 4 miles upstream to an elevation of 850. The Adobe Creek watershed contains about 1.8 square miles (1,150 acres).

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) in Alamo Pintado Creek are about 0.008 cfs per tributary acre according to regional formulas. Less frequent and more destructive flows may range from 0.2 cfs to 0.4 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event).

Channel forming flows (typically about a 2-year event or 50 percent exceedance interval) in Adobe Creek are about 0.026 cfs per tributary acre according to regional formulas. Less frequent and more destructive flows may range from 0.56 cfs to 0.83 cfs per tributary acre for a runoff event with a 1 percent chance of occurring in any particular year (100-year storm event).

5.1.2 Potential Impacts

5.1.2.1 Significant Impact Thresholds

The maintenance program is designed to reduce overbank flooding, prevent or reduce bank erosion (at critical locations where public infrastructure is threatened), and reduce upstream debris and sediment supply. As such, it results in beneficial impacts related to the protection of life and property. However, there may be *incidental* adverse hydraulic impacts associated with the routine maintenance program - that is, unintended adverse impacts. These impacts would be considered significant if they would exceed the following thresholds:

- Increase in overbank flood hazard conditions that could result in damage to life and property
- Increased bank erosion that could result in damage to life and property due to direct loss or reduced channel conveyance

Impacts of the current maintenance program are based on the effects relative to the existing hydrologic and hydraulic conditions (i.e., 2000) along the affected watercourses and debris basins. The assessment takes into account the environmental protection benefits provided by the current SMPs related to hydrology and geomorphology.

5.1.2.2 Previously Identified Impacts

The following hydrology related impacts were identified in the 1991 Final EIR. Only one impact was determined to be Class I (significant and unmitigable); all others were determined to be Class II impacts (significant, but mitigable) or Class III impacts (adverse, but not significant).

Previously Identified Class I Impacts

1. When brushing or spraying is conducted on a large scale over long reaches of riverbed 200-300 feet wide, considerable geomorphic impacts may occur locally, upstream, or downstream. *This impact is no longer applicable as it refers to past practices of aerial herbicide spraying on the Santa Maria River which are not part of the current and future maintenance program.*

Previously Identified Class II Impacts

2. When brushing results in the removal of vegetation from the banks or channel bed near the banks, bank stability impacts may result. *This impact is no longer applicable because the*

District does not remove vegetation from the banks under the current and future maintenance program. However, in the event that the District removes giant reed from banks to enhance habitat, the affected bank will be stabilized with vegetation or biotechnical methods under a new mitigation measure (H-6).

3. Removal of channel bed vegetation increases flow velocities while decreasing the resistance of the channel to erosion. This can increase channel bed scour and lead to undermining and eroding channel banks. *This impact is addressed below in Section 5.1.2.6.*

4. Removing any vegetation above the toe of the channel banks similarly increases flow velocities and reduces the resistance of the bank to erosion. *This impact is no longer applicable because the District does not remove vegetation from the toe of banks under the current and future maintenance program. However, in the event that the District removes giant reed from the toe of banks to enhance habitat, the affected bank will be stabilized with vegetation or biotechnical methods under a new mitigation measure (H-6).*

5. Removing bank vegetation reduces shading and enhances conditions for dense vegetation growth on the channel bed by providing more sunlight. This can create denser stands of channel vegetation that require more frequent removal. *This impact is no longer applicable because the District does not remove vegetation from the banks under the current and future maintenance program. However, in the event that the District removes giant reed from banks to enhance habitat, the affected bank will be stabilized with vegetation or biotechnical methods under a new mitigation measure (H-6).*

6. Removing protective vegetation can affect channel stability upstream and downstream. Increased local erosion can increase sediment deposition downstream causing channel adjustments, bank erosion, and channel widening. *This impact is no longer applicable because the District does not remove vegetation that stabilizes banks under the current and future maintenance program. However, in the event that the District removes giant reed from the toe of banks to enhance habitat, the affected bank will be stabilized with vegetation or biotechnical methods under a new mitigation measure (H-6).*

7. If the channel is lowered locally, the bed may erode upstream and degrade channel stability. *This impact is addressed below in Section 5.1.2.6.*

8. Spraying of ditches from truck mounted booms from the top of the bank affects protective bank vegetation, thus increasing local bank erosion, decreasing upstream and downstream channel stability, and increasing suspended sediments. *This impact is no longer applicable because the District does not spray bank vegetation under the current and future maintenance program, and Mitigation Measure W-2 in Section 5.2.2 includes provisions to avoid spraying unintended vegetation.*

9. Desilting by Gradall™ can create an unstable channel geometry with steep unprotected erodible banks, thus precluding the presence of any stabilizing bank vegetation. *This impact is not considered applicable because the District has not observed any instances in the past nine years in which desilting has created steep unprotected banks or removed stabilizing bank vegetation. However, the impact of localized excessive desilting on bank erosion is addressed below in Section 5.1.2.6.*

10. Desilting by front-end loader and bulldozer removes bed sediment, thus causing undermining of channel banks. *This impact is not considered applicable because the District has not observed any instances in the past nine years in which desilting has created steep unprotected banks or removed stabilizing bank vegetation. However, the impact of localized excessive desilting on bank erosion is addressed below in Section 5.1.2.6.*

11. Desilting by dragline along extensive reaches of estuaries, such as lower Atascadero Creek, and wide earthen channels creates unstable bed and bank geometries and precludes the establishment of bank vegetation. *This impact is no longer applicable because the District has not observed any instances in the past nine years in which desilting has created steep unprotected banks or removed stabilizing bank vegetation. In addition, routine maintenance activities in estuaries are not included in this program.*

12. Shaping in South Coast streams, North County basins, and river tributaries and ditches disrupts the natural channel bed configuration, causes the channel to adjust to a stable configuration, and either erode or add sediments to its boundaries. *This impact is addressed below in Section 5.1.2.6.*

13. Shaping can change the sediment characteristics of the channel bed causing greater erosion locally and greater sediment transport downstream. *This impact is addressed below in Section 5.1.2.6.*

14. Repair of rip rap and structures which armor the channel banks can affect local and downstream hydraulics. Flow velocities may increase downstream, causing bank erosion which may require more bank protection. *Repair of an existing structure to its original condition would not result in any hydraulic impact because there would be no increase in hard surfaces, nor any new encroachment into the channel. Hence, this impact would not occur. The impact of new bank protection, particularly hard protection, is addressed below in Section 5.1.2.6.*

15. Repair or alteration of grade control devices for bank protection may change downstream hydraulics and promote bank or bed erosion. *This impact is addressed below in Section 5.1.2.6.*

16. Grading an access ramp through a channel bank changes the local channel into a potentially unstable configuration. Such grading removes protective vegetation and exposes fine sediment. *This impact is addressed below in Section 5.1.2.6.*

17. Driving maintenance equipment on the channel bed may disrupt channel bed sediments and change the stable channel bed configuration. These impacts can cause channel adjustments during subsequent floods. *This impact is addressed below in Section 5.1.2.6.*

Previously Identified Class III Impacts

18. When brushing in river channels is limited to the low flow or pilot channel, the impact to local, upstream, and downstream channel stability is limited. *The impact assessment in Section 5.1.1.6 is consistent with this conclusion.*

19. Removal of bed sediments by a front-end loader and bulldozer may affect bank vegetation. *The impact of desilting on bank vegetation is addressed below in Section 5.1.2.6.*

5.1.2.3 Key Hydrologic and Hydraulic Processes

The morphology of a channel depends on the discharge, the quantity and character of sediment moving through the stream system, and the composition of the materials making up the bed and banks of the channel. The slope of the channel bed also plays a major role in shaping the creek due to its influence on flow velocity and consequently the erosive and sediment transporting power of a creek.

The channel form is a result of thousands of years of adjustment to hydrology and sediment conditions. However, the channel morphology at any given time is tied strongly to the channel forming flow, or "bankful discharge." In southern California, this flow typically has a recurrence interval of 1.5 to 2.5 years. The bankful discharge is the increment of discharge that transports the largest fraction of the sediment load over a long period of time. It is a function of the magnitude of the event and its frequency of occurrence. This discharge is considered to have morphological significance because it represents the breakpoint between the processes of channel formation and floodplain formation. In addition, the bankful discharge is the key parameter for channel classification because bankful discharge is related to channel dimensions such as width, and channel patterns such as meander length, radius of curvature (i.e., sinuosity), and meander/width ratio.

Bankful applies primarily to stream types that have an observable floodplain feature. Streams that are deeply entrenched do not exhibit significant changes in channel width as flood flows increase. In deeply incised channels, common in developed areas such as the South Coast, the top of the bank is not the active floodplain, but rather an abandoned floodplain or terrace. The floodplain is rarely flooded in these situations. Hence, the channel filling flow is significantly larger than the channel forming or dominant discharge, which occurs lower in an incised channel.

If the hydrology and sediment inflow remain more or less constant over time, the channel morphology will remain stable even though the channel is not static. In this condition, the channel is in dynamic equilibrium in which there is a balance between the work by the stream and the sediment load imposed on the stream. The morphology of the channel adjusts to maintain this balance. After a disturbance, a stable channel will tend to return approximately to its previous state. A disturbance can be a natural phenomenon (e.g., landslide or flood) or human induced. The stream's response may include changes in bed slope, channel width, and retained sediment size.

There are several empirical relationships that can predict the response to disturbances. For example, discharge and slope are directly proportional to the rate of sediment supply and mean grain size. Increased runoff and lower sediment supply in urbanized areas typically results in degradation of the channel bed, which in turn may cause lateral migration and oversteepened banks which are susceptible to failure.

A channel can have a stable width even though the stream is migrating laterally. Stream width can remain constant where erosion on one bank is compensated with corresponding sediment deposition on the opposite bank. Floodplains are built through lateral accretion and associated point bar deposition. Bankful widths in alluvial channels remain relatively constant during this process.

Undisturbed streams attempt to maintain a dynamic and continuing balance between sediment load and the energy available from stream flow to perform the work. The stream pattern exhibits natural adjustments in sinuosity that result in maintaining a slope such that the stream system neither degrades nor aggrades. The meander geometry and associated riffles and pools within a stream system adjust in such a way that the work expended on sediment transport is minimized. However, the process of expending energy through lateral migration is constrained when banks are armored or otherwise protected in place. In these instances, the excess energy is translated into channel bed degradation.

5.1.2.4 Conditions of Maintained Drainages

The reaches, and in many cases, the entire watercourses maintained by the District, have been substantially altered by human activities that have significantly affected hydrologic and hydraulic conditions. For example, runoff from urbanized areas, particularly in the developed portions of the South Coast and within the Santa Maria and Orcutt areas, is generally higher compared to pre-development conditions due to a greater percentage of impervious surfaces. In addition, these areas exhibit a higher peak runoff and a hydrograph in which peak flows occur at an earlier stage. Finally, sediment production is typically lower from urbanized areas.

Stream geomorphological processes are highly constrained in areas of urbanization and intensive agriculture. Banks are "fixed" to protect adjacent land uses. That is, actions are taken to maintain banks in their current locations and to protect them from erosion such as bank armoring or channelization. Overall channel slopes are also permanently established by grade stabilizers, culverts, and bridges. As a result, the alignment, width, and slope of streams in developed areas are generally static.

Channel evolution models describe the sequence of predictable changes a stream undergoes after certain types of disturbances. Under pre-disturbance conditions, channels are well vegetated and have frequent interaction with the floodplain. Following a perturbation (e.g., channelization, clearing the watershed for agriculture), channel degradation occurs usually due to excessive stream power. Channel degradation leads to oversteepened banks, which then lead to bank failure and mass wasting. The channel becomes wider. As channel widening and mass wasting proceed upstream, the downstream channel aggrades with sediments. A new low flow channel is then created in the sediment deposits. The final stage is the development of a channel in the deposited alluvium that has the dimensions and capacity of the pre-disturbance channel, only lower. The original floodplain is now an abandoned terrace. This sequence of changes in channel morphology has occurred in many County streams in both urbanized and rural areas.

In streams in developed areas, the increased runoff causes wider and deeper channels, an increase in meander wavelength, and a decrease in channel slope. Bankful channels become entrenched in the streambed. Entrenched channels become confined by their banks and continue to erode vertically. Entrenched channels can achieve equilibrium. However, it is common for their banks to become vulnerable to collapse.

5.1.2.5 Maintenance Objectives

The objective of the routine maintenance program is to maintain existing capacity of key watercourses to prevent conditions that could increase existing overbank flood hazards or erode banks that could result in damage to life and property. These conditions include: (1) excessive accumulation of sediments, debris plugs, and obstructing or silt-trapping vegetation; and, (2) severely eroding banks that redirect flows in the channel. To accomplish this objective, the District conducts various maintenance activities, as summarized in Table 5-7. These activities are implemented on an as-needed basis, following a detailed field assessment each spring. Each activity is designed to achieve one or more specific hydraulic effects, listed below, which contribute to the overall program objective:

- Prevent a build up of in-channel resistance and thereby maintain suitable velocities to transport sediments
- Remove obstructions that could cause flooding by reduced capacity or debris dams
- Prevent or reduce bank erosion that could threaten critical public infrastructure
- Reduce sedimentation that could cause downstream flooding by reduced capacity

5.1.2.6 Incidental, Unintended Impacts

As described above, the drainages maintained by the District are highly altered. The channels are often greatly incised and separated from their floodplains, and channel widths and slopes are generally fixed. These drainages may or may not have reached a state of dynamic equilibrium. Channel maintenance activities are only one of several human factors that affect the hydraulics and channel morphology of urban streams. These activities could cause adverse hydraulic impacts that are unintended, and incidental to the desired effect. These incidental adverse impacts are described below, including a discussion of their expected and observed frequency, extent of impact (i.e., areal extent and magnitude), and persistence.

<u>Impact of Preventing a Build-up in Channel Resistance</u>

The following maintenance activities prevent the build-up of in-channel resistance: (1) brushing, mowing, spraying, and discing to remove obstructive and/or silt-trapping vegetation; and (2) removing storm debris and obstructive sandbars. These actions prevent the reduction in flow velocities over time that could cause increased sedimentation and decreased channel capacity. As a result, the flow velocities after maintenance are higher, increasing the sediment transport capabilities. Channel capacity is maintained by the above maintenance activities, as intended.

However, in a worst case situation, the resultant increased velocities in a maintained channel could erode non-cohesive channel bed material and lower the channel bed. If the channel bed is substantially lowered, especially in a narrow channel, it could result in oversteepened banks that cause bank failure. The occurrence and magnitude of this potential impact are dependent on the following factors:

- The reduction in resistance must be substantial to cause a meaningful increase in flow velocities. For example, if dense vegetation is removed from the channel bed, there would be a substantial change in resistance and a concomitant increase in flow velocities. If the initial resistance by the vegetation is low, then the change in velocity due to maintenance would be low.

- The increased velocities would first remove non-cohesive sediments that are typically moved during flood flows. An armored layer or bedrock is often found under the mobile layer. Further channel bed degradation would only occur if the increased velocities were sufficient to move larger particles.

- Channel bed degradation that could lead to bank oversteepening and failure must extend from toe of bank to toe of bank, and must extend longitudinally for at least several hundred feet. Localized channel bed degradation is unlikely to persist if it is small in area and longitudinal extent.

Brushing typically involves cutting young willow, mulefat, and cottonwood saplings that have colonized the active channel bed or recently developed sandbars over the previous 1 or 2 years. These plants usually have stem diameters of less than one inch, and heights less than six feet. In most maintained channels, the stands of young willows and saplings are generally sparse - such that one can easily walk through the stands unimpeded. In many South Coast streams, well-developed canopy trees inhibit the development of dense continuous stands of woody or herbaceous plants in the channel bed. In addition, periodic flood events such as those in 1995 and 1998, maintain the channel bottom vegetation in a sparse low growing condition, with very little woody biomass. These conditions also occur in some North County creeks; however, there is a greater frequency of highly disturbed channels with little or no canopy cover. In these channels, young stands of cattails and other emergent wetlands can develop from year to year, unless there is a flood event or previous maintenance. In-channel vegetation along channels that have not been maintained on a regular basis often create dense impenetrable stands that greatly reduce channel capacity.

Discing is used infrequently, and only in channels where channel bottom vegetation is small and herbaceous (e.g., San Pedro Creek below Highway 101). The purpose of discing is to prevent the development of obstructive or silt-trapping vegetation, not to remove existing well-developed vegetation. Discing results in efficient sediment transport conditions in reaches that are prone to excessive sedimentation. In contrast, brushing is used to both remove obstructive vegetation, as well as to prevent its development in channels with new growth. Mowing is used in North County to lower the height of cattails or young willows. Spraying is used primarily to treat newly emerging plants in channels that have been desilted or where more woody plants have been brushed. Along densely vegetated streams, brushing includes trimming overhanging tree limbs that could fall into the channel or snag floating debris.

Preventing a build-up of channel resistance is also achieved by removing storm debris and obstructive sandbars. The former usually consists of a tangle of whole trees, branches, trash, and sediment deposited in the channel bed during flood flows. Debris occurs in scattered isolated piles. Obstructive sandbars occur when significant sediment is deposited due to a sudden reduction in flow velocity, typically associated with backwater caused by debris plugs (particularly upstream of bridges and culverts that are easily plugged), or along the inside of large bends in the stream. The height and length of a typical sandbar that is removed or lowered is one to three feet, and 50 to 150 feet, respectively. In most instances, the sandbar material is pushed into the toe of a nearby eroding bank, rather than removed from the channel. Typical quantities that are handled are about 100 to 500 cubic yards.

Maintaining higher flow velocities due to maintenance activities that reduce in-channel resistance would not cause a significant adverse hydraulic impact because:

a) Most maintenance activities are too limited in length and area to cause a measurable effect. Under these circumstances, the higher velocities along the affected reach are unlikely to cause a persistent channel bed degradation, much less extend the degradation to banks and cause undermining.

b) The District is taking pre-emptive action to prevent the development of obstructive or silt-accumulating vegetation during the following years. Hence, there is a negligible *immediate* reduction in the existing channel resistance due to the maintenance action.

c) The District has not observed any instance in which bank erosion has occurred or unstable banks have been developed due to one-time or even repeated maintenance activities to reduce channel resistance over the past nine years.

In summary, actions to reduce existing channel resistance or prevent the build up of channel resistance could cause an increase in flow velocities, which in turn could theoretically cause minor and localized channel degradation that contributes to bank erosion. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. Nevertheless, it is considered a potentially significant, but mitigable impact (Class II). To ensure that this impact is avoided under the current program, the District currently conducts an "engineering analysis" (SMP No. 12) to determine the need, nature, and extent of maintenance activities each year along maintained drainages. This SMP would be replaced by Mitigation Measure H-1 (see below), which provides a more explicit reference to the hydraulic factors that should be considered when determining the need and extent of maintenance activities. One of these factors includes a consideration of excessive brushing, spraying, and channel shaping that could result in incidental adverse hydraulic impacts.

Impact of Removing Channel Obstructions, Including Desilting

The District typically removes significant accumulations of storm debris piles, substantial obstructive sandbars, and excessive depositions of silt that have filled the channel. The removal of these in-channel obstructions is primarily designed to prevent a reduction in channel capacity and/or a "damming" effect in which debris or sediment could plug a channel, culvert, or bridge. These maintenance actions prevent overbank flooding and the deposition of additional obstructing sediments.

The removal of obstructive storm debris and sandbars reduces channel resistance and increases flow velocities, as described above, including incidental adverse hydraulic impacts. No other adverse hydraulic impacts would be associated with these actions.

Desilting occurs in reaches where there has been a recent significant deposition of both coarse and fine sediment that has reduced channel capacity by raising the channel bed. Typically, the channel bottom has been disturbed by the sediment deposition, which smothers existing vegetation. Removal of the silt by heavy equipment restores channel capacity. It may also alter the topography and reduce the roughness of the channel bed; however, this impact is expected to be rare and inconsequential because channels with excessive sediment deposition typically have low roughness due to accumulation of coarse and fine sediments.

Excessive desilting could result in lowering the channel bed below its previous invert elevation, which could contribute to oversteepened banks that are prone to failure. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. As such, it is considered a potentially adverse, but less than significant impact (Class III). The District typically removes both coarse and fine sediments that have accumulated on the channel bottom during recent flood events, returning the channel invert to its pre-flood conditions. The District does not create *ad hoc* sediment basins along channels by excessive excavation.

To ensure that excessive desilting does not occur, the District will implement Mitigation Measure H-1 (see below), which includes a consideration of the incidental hydraulic impacts associated with desilting to ensure that excessive removal of sediments does not occur. In addition, the District would implement Mitigation Measure H-2, which requires the District to minimize incidental hydraulic impacts of desilting. Mitigation Measure H-3 is also recommended to minimize hydraulic impacts of desilting. This measure requires the District to attempt to restore original channel dimensions (i.e., prior to siltation) after desilting.

Impact of Preventing or Reducing Bank Erosion (New Pilot Channel and Bank Protection)

The following maintenance activities are implemented to prevent or reduce bank erosion: (1) create pilot channel to redirect flows away from vulnerable banks; (2) lower or flatten eroding banks to a more stable slope; (3) place obstructive sandbars or storm debris at base of eroding banks or in scour holes; (4) remove landslides from the channel, then reshape channel or bank; and (5) install bank protection on severely eroding banks (i.e., ungrouted or grouted rip-rap, pipe and wire revetment, concrete sackwalls, and willow plantings). Reducing bank erosion may directly protect public infrastructure, as well as prevent a reduction in channel capacity due to wasting into the channel. Once the channel capacity is reduced, overbank flooding could occur as well as erosion of opposing banks.

Creation of a new pilot channel that is shorter and straighter than the existing low flow channel would reduce channel sinuosity and thereby increase channel slope. This modification can cause an increase in velocities, which in turn can cause channel bed scour and oversteepened banks. The magnitude of this incidental adverse hydraulic impact is primarily dependent on the length of the channel affected, the type of bed material (i.e., resistant or non-cohesive), and the original sinuosity. This impact is not expected to be significant because:

a) The length of pilot channels created to divert flows from eroding banks is usually 100 to 200 feet. This length is too small to have a measurable effect on the creek slope, and therefore, is not expected to cause localized channel bed degradation and associated bank scouring. Longer pilot channels have only been created on the Santa Maria River which is a very low gradient drainage. The new pilot channels were created parallel to existing low flow channels, and as such, followed the existing slope.

b) During the past nine years, the District has not observed instances where creation of a pilot channel has caused channel bed degradation. In most cases, new pilot channels are created in reaches where there is an accumulation of sediments, and channel bed degradation is precluded.

In summary, creation of a straight pilot channel could theoretically reduce sinuosity, increase channel slope, and cause channel bed degradation. This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. This is considered a potentially adverse, but less than significant impact (Class III). To ensure that this impact is avoided in all instances, the District would implement Mitigation Measure H-4 (see below), which requires the District to maintain the natural morphology, sinuosity, and slope when constructing a new pilot channel, as feasible.

The District stabilizes banks that are eroding or that have failed if there is a threat to critical public infrastructure, <u>or is in the public interest</u>. The method of bank stabilization varies depending upon the site conditions. The most common method is to push channel sediments to the toe of the eroding bank. The bank may also be reshaped to a more stable configuration. Willows are typically planted on the reshaped bank. In some instances, the District will install ungrouted rip rap due to excessive erosion and/or to match existing rip rap bank protection on the bank. The District occasionally installs new grouted rip-rap, pipe and wire revetment, or concrete sackwalls to protect an eroding slope.

The stabilization of eroding banks using earthen material and willows would not have an adverse, incidental hydraulic impact. However, the installation of hard bank protection such as rip rap or concrete sackwalls could, in certain circumstances, redirect erosive flows to opposite banks, causing bank erosion or generally creating higher local velocities which can cause local channel bed degradation. This impact would be infrequent and is considered less than significant because:

a) Hard bank protection is used infrequently and typically only includes ungrouted rip rap, which has a roughness coefficient similar to naturally vegetated banks.

b) The length of most new bank protection projects is typically less than 100 feet; as such, hydraulic impacts, if any, would be very localized.

c) The District has not observed an instance where new bank protection has caused local channel bed degradation or erosion on the opposite banks.

In summary, installation of hard bank protection could cause unintended local bank erosion and channel bed degradation. However, this impact is expected to occur rarely, if at all, and would only have localized hydraulic impacts. This is considered a potentially significant, but mitigable impact (Class II). To reduce this impact to a less than significant level, the District would implement Mitigation Measure H-5 (see below), which requires the District to give full consideration to biotechnical methods when installing new bank protection.

In certain situations, the District must repair existing bank protection in order to prevent bank erosion that could affect critical public infrastructure. The repair or replacement of bank protection using the same materials and limits would not have an adverse hydraulic impact because there would be no increase in bank protection surfaces, nor any new hydraulic constraints or obstructions. Any increase in the length or surface area of bank protection during repair would have the same impact as installing new bank protection, which is described above.

It should be noted that the repair of bank protection on private property that is not part of a regional effort to protect public infrastructure is the responsibility of the landowner. Impacts associated with the maintenance of existing bank protection, and potential new bank protection, in these instances are not due to any actions by the District. However, to encourage environmentally sound erosion control practices by private landowners, the District will implement Mitigation Measure H-9.

Impacts of Reduced Sediments from Debris Basins

The District maintains numerous debris basins on the South Coast as part of the routine maintenance program. Maintenance consists of periodic clearing of a pilot channel to the outlet to facilitate flows through the basin, and periodic desilting of the basins as they near capacity (when 25% full). As noted earlier, urban streams typically have a reduced sediment supply due to paving of surfaces in the watershed and flood control facilities such as debris basins. The periodic removal of sediments from the basin contributes to the ongoing reduction in sediment supply to the maintained drainages in the County. Reduced sediment supply can result in channel degradation over time.

The magnitude of this impact would not be significant for any single drainage because: (1) the South Coast debris basins are primarily designed for large debris such as cobbles and downed trees, and do not capture wash loads and are not effective in capturing bed loads; (2) debris basins have been in place for almost 30 years on most of the affected drainages, allowing time for downstream reaches to adjust to reduced sediment supply during non-flood years; and (3) they are maintained to pass low to medium flows with sediments. Hence, this impact is considered adverse, but not significant (Class III).

Incidental Impacts of Removing Giant Reed From Banks for Restoration Purposes

The District may periodically remove the non-native giant reed plants (*Arundo donax*) from stream banks for habitat restoration purposes, particularly if the stands are large (e.g., over 50 feet in length) and appear to represent a significant threat to the local riparian vegetation. Giant reed is a large plant that can be effective in stabilizing slopes and protecting them from scouring during flood flows. Removal of large stands could destabilize banks and result in increased local bank erosion and downstream sedimentation. This impact is potentially significant, but mitigable (Class II) because many stands of giant reed on banks are very large, and their removal could have more than localized hydraulic impacts. To avoid significant impacts, the District will implement Mitigation Measure H-6, which requires that the District will restore the affected banks with equally effective native riparian vegetation after removing the giant reed. This impact may occur to a lesser degree when the District removes stands of other non-native plants from banks such as castor bean.

Impact of New or Repaired Grade Stabilizers

On occasion, the District may need to stabilize the bed of a channel that is being lowered due to headcutting (the lowering of the channel bed by progressive, upstream erosion). The size and type of grade stabilizer would vary depending upon the channel conditions. The most common stabilizer would be grouted rip-rap using native rock. Establishing a new grade stabilizer would prevent channel bed degradation, which in turn, leads to oversteepened banks. As such, it would contribute to the stability of the channel geometry, and not result in any significant adverse hydraulic impacts. However, in some instances, the structure could create a scour pool beneath the grade stabilizer, causing a localized hydraulic "jump." This impact would not cause a drainage-wide hydraulic impact due to the presence of the grade stabilizer. This impact is considered adverse, but not significant (Class III) because the effect of a scour pool would be localized, and because the need for new grade stabilizers is very low.

However, to minimize local hydraulic impacts, the District will implement Mitigation Measure H-7, which requires a design that will minimize vertical drops. In addition, the need for a grade stabilizer must also be justified using the hydraulic considerations under Mitigation Measure H-1.

Repair of existing stabilizers would not cause any hydraulic impacts provided that length and vertical height of the repaired structure was similar to the original one. The hydraulic impacts of enlarging the damaged grade stabilizer would the same as described above for a new stabilizer.

Impact of Steep or Exposed Access Ramps

The District has established most of the access ramps needed for the maintenance program throughout the County. However, there may be occasions when a new ramp is required. If the ramp is constructed on a very steep bank that is exposed to high-frequency flows, there is a potential for the access ramp to be eroded and cause bank instability. This impact is considered adverse, but not significant (Class III) because the hydraulic impacts would be localized, and because few new access ramps are needed. Bank erosion can be avoided by placing the ramp in a protected area, designing the ramp to reduce exposure to erosive flows, and stabilizing it with vegetation (Mitigation Measure H-8).

Impact of Equipment Activity on Channel Beds

Heavy equipment, such as front-end loaders and dozers, may operate in the channel bed during channel shaping, desilting, and bank protection repair. In most instances, the equipment moves over the channel bed with only minor topographic disturbance. However, for larger maintenance projects, the movement of equipment in the channel bed can disrupt any "armored" layer on the channel bed and loosen sediments. It may also reduce the channel topographic diversity, which imparts a certain resistance to flow, thereby increasing flow velocities and sediment transport capacity. For most maintenance activities, this impact would cause a negligible to minor increase in sediment mobilization during the subsequent winter. Increased sediment transport from the affected reach may or may not cause channel degradation, depending on many hydraulic factors.

This impact is expected to occur very infrequently, if at all, and would only have localized hydraulic impacts. Nevertheless, it is considered a potentially significant, but mitigable impact (Class II). To ensure that this impact is avoided, the District will implement Mitigation Measure H-1 (see below), which requires minimizing maintenance activities and considering the unintended effects of maintenance activities, such as channel bed disruption, on hydraulic conditions.

TABLE 5-7
SUMMARY OF MAINTENANCE ACTIONS AND INTENDED HYDRAULIC EFFECTS

Maintenance Actions	Intended Hydraulic Effects			
	Prevent Build up of Channel Resistance and Thereby Increase Sediment Transport	Remove Obstructions that Could Cause Flooding by Reduced Capacity or Debris Dams	Prevent or Reduce Bank Erosion that Could Threaten Property or Reduce Capacity	Reduce Sediment Loading that Could Cause Downstream Flooding by Reduced Capacity
Selective Brushing of Obstructive or Silt Trapping Vegetation				
Trim overhanging vegetation	X			
Thin, mow, or remove channel bottom vegetation	X			
Disc low growing vegetation/channel bed	X			
Remove downed trees in the channel		X		
Herbicide Spraying of Obstructive or Silt Trapping Vegetation				
Selectively apply herbicide to channel bottom vegetation	X			
Apply herbicide to recently brushed or desilted area to inhibit regeneration of plants	X			
Channel Shaping and Bank Stabilization				
Remove or lower obstructive sandbars on channel bottom	(x)	X		
Remove obstructive storm debris (i.e., mixture of vegetation and sediment)	(x)	X		
Excavate new pilot channel		(x)	X	
Lower or flatten eroding banks to a more stable slope			X	
Place obstructive sandbars or storm debris at base of eroding banks or in scour holes			X	
Remove landslides from the channel, then reshape channel or bank		(x)	X	
Install bank protection on severely eroding banks (i.e., ungrouted or grouted rip-rap, pipe and wire revetment, concrete sackwalls, and willow plantings)			X	

Maintenance Actions	Intended Hydraulic Effects			
	Prevent Build up of Channel Resistance and Thereby Increase Sediment Transport	Remove Obstructions that Could Cause Flooding by Reduced Capacity or Debris Dams	Prevent or Reduce Bank Erosion that Could Threaten Property or Reduce Capacity	Reduce Sediment Loading that Could Cause Downstream Flooding by Reduced Capacity
Channel Desilting				
Collect and remove silt from channel bottom (bulldozer or Gradall™)		X	(x)	
Stockpile, then remove spoils				X
Repair Existing Bank Protection and Grade Stabilizer (Unlined Channels)				
Repair or replace grouted and ungrouted rip-rap, pipe and wire revetment, and concrete sack walls			X	
Repair or replace grade control structures			X	
Basin Maintenance				
Clear outlet works of vegetation	X			X
Clear 15-foot wide pilot channel through the center of the basin	X			X
Clear inside face of the basin dams and a 10-foot wide zone at the base of the dam				X
Remove sediment once the design capacity has been reduced by 25 percent				X
Apply herbicides to vegetation near outlet works or to maintain the pilot channel	X			X
Apply herbicides to remove non-natives				X
Clear basin of all sediment following major fire in the watershed				X

5.1.3 Mitigation Measures

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. ***Monitoring and Timing**: The District staff will complete the analysis specified in the measure as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the results of the analysis are implemented. **Reporting**: The need analysis will be documented in the Annual Maintenance Plan. A summary of the maintenance work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing**: The District staff will complete the analysis specified in the measure as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the results of the analysis are implemented. **Reporting**: The planned extent of desilting will be documented in the Annual Maintenance Plan. A summary of the desilting work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing**: The District staff will conduct and/or oversee the maintenance work, and ensure that the measure is implemented. **Reporting**: A summary of the desilting restoration will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing**: The District staff will conduct and/or oversee the maintenance work, and ensure that the pilot channel construction is consistent with the measure. **Reporting**: A summary of the maintenance work will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing****: The District staff will complete the analysis of alternative bank protection methods as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the appropriate method is implemented.* ***Reporting****: The analysis of alternative bank protection methods will be documented in the Annual Maintenance Plan. A summary of the maintenance work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing****: The District staff will conduct and/or oversee the maintenance work, and ensure that the appropriate weed removal and bank stabilization method is used. The latter will be identified in the Annual Maintenance Plan.* ***Reporting****: A summary of the maintenance work will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will complete the analysis of alternative grade stabilizers as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the appropriate method is implemented, and that a vertical drop is avoided.* ***Reporting:*** *The analysis of alternative stabilizer designs will be documented in the Annual Maintenance Plan. A summary of the actual work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will conduct and/or oversee the maintenance work, and ensure that the ramp design is consistent with the mitigation measure. A description of the proposed ramp will be included in the annual maintenance plan.* ***Reporting:*** *A summary of the maintenance work will be documented in the annual post maintenance report.*

H-9 - Landowner Information Regarding Bank Protection. The District shall provide information to landowners along creeks that wish to stabilize eroding banks on their property. The District shall prepare a guide for landowners that describes methods of bank protection, with an emphasis on bio-technical solutions. The booklet shall be written for an educated layperson and include clear diagrams about materials and installation methods. It shall also include discussions of hydraulic and biological impacts when considering bank protection, and permits required from local, state, and federal agencies. The District shall also make staff available to conduct site visits with property owners to provide guidance on an as-needed basis. ***Monitoring and Timing.*** *The District staff will complete the guide manual within one year of the approval of the updated maintenance program.* ***Reporting.*** *The District shall summarize the number of guidebooks distributed, and the number of landowner meetings, in the post-maintenance annual report.*

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5.2 WATER QUALITY

5.2.1 Existing Conditions

5.2.1.1 Factors Affecting Water Quality

Water quality in the maintained drainages is dependent upon many factors. The primary factors are the nature of the watershed, and the amount and types of man-made pollutants. Runoff from undeveloped watersheds with sedimentary parent material exhibit a naturally high mineral content, but low pollutant levels such as metals and nutrients. In contrast, runoff from a watershed dominated by agriculture exhibits higher nutrient and sediment levels.

Water quality also varies over time within watersheds. Water quality is generally very poor during the first major runoff event when sediments, trash, and accumulated organic matter in a drainage are mobilized. As the winter progresses, water quality improves due to flushing and dilution.

A wide variety of pollutants are generated by urban land uses, depending upon the mix of commercial, industrial, and residential land use typs. Pollutants are generated through the exposure of industrial activities to rainfall and runoff, septic fields, littering, landscape maintenance, animal waste, fuel dispensing, vehicle servicing, outdoor waste receptacles, and painting. Stormwater pollutants from agricultural operations consist primarily of sediments, nutrients from fertilizers, and pesticides (which include herbicides). Runoff from construction sites may be a major source of sediments in stormwater runoff. An overview of major stormwater pollutants that affect the drainages in the County is provided below:

- <u>Sediment</u> is the largest contributor by volume to stormwater pollution. Suspended matter is primarily generated through erosion processes during rain events. It is a natural element of runoff, and is only considered a pollutant to the extent that sediment loads are elevated over natural ones. Sediments cause a decrease in light transmission through water, which in turn, causes a decrease in primary productivity of aquatic plants and phytoplankton upon which other species feed. Sediments also obscure spawning and feeding areas for fish and aquatic organisms and may directly interfere with respiration of aquatic species. Sediments also decrease the value of receiving waters for recreational uses and drinking water supplies. It should also be noted that other stormwater pollutants are often absorbed to suspended solids, particularly phosphorus, heavy metals, and organic compounds.

- <u>Nutrients</u> such as nitrogen and phosphorus are common constituents of stormwater. Nutrients enter runoff from sources such as fertilizers, plant matter, animal waste, seepage from septic systems, and detergents. An excess of nutrients will accelerate the process of eutrophication in receiving waters. Algal blooms will occur and the resulting decay of organic material will create turbid conditions that eliminate aquatic vegetation and destroy food for fish and aquatic species. Some algal blooms can produce toxic substances. They may also inhibit recreational uses of the receiving waters, and reduce the suitability of water for drinking water supplies.

- Heavy metals in stormwater originate from the operation of motor vehicles, direct atmospheric fallout, and the degradation of highway pavement materials. The most abundant heavy metals in stormwater are lead, zinc, and copper. Heavy metals accumulate in bottom sediments and adversely affect benthic organisms. In addition, heavy metals can bioaccumulate in animal tissues and result in chronic toxic effects. Dissolved metals can be toxic to fish and aquatic species.

- Oxygen demanding substances include numerous organic compounds which are decomposed by microorganisms, thereby creating a need for oxygen. The presence of oxygen demanding substances can cause oxygen depletion in the receiving water and kill fish and increase the number of anaerobic microorganisms that produce unpleasant odors.

- Other types of organic compounds are problematic in stormwater because they cannot be easily decomposed by microorganisms and will persist for a long time. Examples include hydrocarbon fractions of oils and greases from transportation sources, benzene from gasoline, synthetic detergents, pesticides, herbicides, wood preservatives, and synthetic industrial products. Many of these compounds are toxic to fish and aquatic organisms, exhibiting both acute and chronic toxic effects. They may also inhibit reproduction, respiration, and development of fish and aquatic species, and in many cases, are mutagenic and carcinogenic. The presence of these compounds in contaminated fish and water can pose a human health risk. Many chlorinated hydrocarbons are very persistent and bioaccumulate in the food chain. They also create adverse aesthetic impacts due to oily sheens on the water.

- Pathogens include bacteria, fungi, viruses, and protozoas capable of transmitting disease and affecting human health. The primary sources in stormwater include animal wastes, illegal wastewater connections to storm drains, and leaking septic systems or sewer lines. The principal indicator of pathogen contamination is coliform bacteria, particularly when the source of contamination is sanitary sewers. Pathogens pose a human health risk for recreational users.

It is difficult to generalize about water quality conditions along the maintained drainages in the County because of unique circumstances in each watershed. However, the primary pollutants of concern in the creeks and rivers of Santa Barbara County include pathogens, sediment, nutrients, pesticides, and oxygen demanding substances.

5.2.1.2 Elevated Bacteria Levels in County Creeks

Since 1996, Santa Barbara County Environmental Health Services (County EHS) has conducted weekly water quality sampling at local beaches. The purpose of the sampling is to identify elevated levels of bacteria in the ocean water, which indicate risk of adverse health effects such as skin rashes, sinus infections, and gastrointestinal illness. When high levels of these bacteria are detected in the surf zone, the County EHS issues an advisory. In 1999, the State Department of Health Services adopted regulations requiring all counties and municipalities to conduct this testing at popular public beaches during the spring, summer and fall months.

The primary source of coliform bacteria in the ocean water at local beaches is water in the creeks derived from stormwater runoff, groundwater discharge to the creek, and runoff generated from urban and agricultural water uses.

The County of Santa Barbara, in cooperation with the cities of Santa Barbara and Carpinteria, initiated several programs to investigate sources of bacteria pollution and implement short and long term actions to reduce bacteria levels in the creek. The primary approach is to remove obvious pollutant sources from the watersheds and to develop best management practices for managing stormwater quality through source reduction and treatment. The latter may include mechanisms to treat stormwater in creeks through the use of "bio-filters," infiltration basins, extended detention basins, or constructed wetlands.

There is a concern that brushing and spraying in-stream vegetation may reduce the "bio-filtering" effect of typical instream vegetation such as cattails and tules. As such, the project could increase the bacteria loading at local beaches by removing a natural instream "treatment" process. An assessment of this issue is provided in Section 5.2.2.

5.2.1.3 Water Quality Management

Water quality is managed through the regulatory actions of the Central Coast Regional Water Quality Control Board. The Basin Plan for the Central Coast Region lists the beneficial uses of waterways in the region and describes how water quality must be protected to maintain these uses. The Basin Plan also contains policies, programs, and actions necessary to achieve the standards established in the plan. The RWQCB implements the plan by issuing and enforcing waste discharge requirements.

Typical beneficial uses in the rivers and creeks of the County include: municipal and domestic supply, wildlife habitat, agricultural supply, cold freshwater habitat, groundwater recharge, warm freshwater habitat, and water contact recreation. The Basin Plan also includes water quality objectives, which are numeric or narrative standards considered necessary to protect beneficial uses.

The federal National Pollution Discharge Elimination System (NPDES) program requires that municipalities and counties with certain population sizes must acquire permits for discharges of stormwater, and to develop a program to reduce stormwater pollution to the maximum extent feasible. The County of Santa Barbara, in cooperation with the cities of Santa Barbara, Carpinteria, Lompoc, and Santa Maria, are working together to apply for a NPDES municipal stormwater permit by the mandated deadline of 2003. Acquisition of the permit will involve development of measures to reduce pollutants in the watersheds, provide some level of stormwater treatment, monitor stormwater quality, and provide public education.

The State Water Quality Control Board, in cooperation with the federal EPA and Regional Board, have designated "impaired waters" of the state, which are those water bodies that exhibit evidence of impaired beneficial uses due to pollution. In Santa Barbara County, the following waterbodies have been designated "impaired." Portions of all of these drainages, except Rincon Creek, are subject to maintenance by the District.

Waterbody	Impairment of Beneficial Use
Arroyo Burro	Pathogens
Rincon Creek	Pathogens, sedimentation
Santa Ynez River	Nutrients, salinity, sediments
San Antonio Creek	Sediments
Goleta Slough	Metals, pathogens, sedimentation
Carpinteria Salt Marsh	Nutrients, sedimentation
Mission Creek	Pathogens

5.2.1.4 1999-2000 Water Quality Data

The County conducted extensive sampling of stormwater runoff in 1998-99 on four South Coast creeks to characterize water quality. The program was expanded in 1999-2000 to include 57 sampling sites on 25 drainages on the South Coast, including all maintained drainages. In addition, four creeks were sampled in the North County, including Orcutt-Solomon Creek. Grab samples were obtained at the mouths of the creek during the early portions of storm events. Sampling primarily occurred after the first major storm of the season, and for storm events that were preceded by prolonged dry periods. The objective of the sampling was to detect maximum levels of pollutants from the watershed in order to identify significant stormwater problems. As such, the water quality data reflect peak values, not weighted average concentrations. A wide variety of constituents were analyzed including bacteria, suspended sediment, pesticides, organic compounds, metals, nutrients, and general water quality parameters. Results of the sampling indicated that bacteria levels in most creeks are above applicable standards during early storm events. Stormwater also contained copper, chromium, zinc, and lead concentrations approaching or exceeding EPA standards in many creeks. The insecticide diazanon was detected in all drainages, and other pesticides were found in most watersheds, but not during all storm events. Nutrient levels were highly variable among the creeks and storm events. Volatile organic compounds were rarely detected. High levels of turbidity and/or total suspended solids were detected on all creeks, but were particularly elevated on Arroyo Burro and Orcutt-Solomon Creek.

Glyphosate, the active ingredient in Aquamaster™, was detected in most creeks sampled. Measurable levels were detected in 41 of the 75 samples (54 percent). The average concentration was 0.067 mg/l, with a minimum detection level of 0.0098 mg/l and a maximum concentration of 0.57 mg/l. The Basin Plan water quality objective for glyphosate is 0.7 mg/l for waters with a Municipal and Domestic Supply (MUN) beneficial use designation in the Basin Plan. Most of the maintained drainages in the County have a MUN designation. The Santa Ynez River has surface impoundments for municipal water supply. Groundwater wells adjacent to many other drainages provide municipal or domestic water supplies.

As noted above, the measured levels of glyphosate in the County's drainages are below applicable standards. The 1999-2000 data indicate that the highest levels, although still below applicable standards, are along Tecolote, Carneros, San Pedro, San Jose, Arroyo Burro, Santa Monica, Franklin, and Carpinteria creeks. The highest levels in 1999-2000 were detected along the last three creeks where a significant portion of the watershed devoted to agricultural, nursery, and greenhouse operations where herbicide use would be prevalent. The other watersheds contain a mixture of orchards, residences, open space, and light commercial land uses.

5.2.2 Potential Impacts

5.2.2.1 Significant Impact Thresholds

Impacts to existing water quality in the maintained drainages would be considered significant if the maintenance actions would result in a violation of an adopted water quality objective established by the Central Coast Regional Water Quality Control Board in the Basin Plan, or otherwise result in a substantial and prolonged (i.e., 24 hours or more) degradation of water quality conditions that could affect beneficial uses.

5.2.2.2 Previously Identified Impacts

The following impacts related to water quality and herbicide effects were identified in the 1991 Final EIR, where they were categorized as "Environmental Toxicology Impacts" and "Water Quality." Several of the previously identified impacts no longer apply because the current maintenance program does not include the herbicide identified in 1991.

Previously Identified Class I Impacts

"Water Quality Impacts"

1. Brushing and spraying activities remove protective vegetation from the channel bed and some lower banks. This increases flow velocities and reduces the resistance of the bed and banks to erosion. Sediment supply is increased and the flow has a greater force to erode and transport it. This can cause unavoidable degradation of water quality downstream which can cause further instability and more erosion as the stream adjusts to changes in the sediment load. *Potential increase in channel bed and bank erosion due to brushing and spraying is addressed in Section 5.1.2 (Hydrology and Hydraulics). The potential increase in downstream turbidity associated with increased erosion due to brushing and spraying is addressed below in Section 5.2.2. The impacts of increased turbidity on fish and aquatic organisms are addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife).*

Previously Identified Class II Impacts

"Water Quality Impacts"

2. Brushing and spraying activities remove protective vegetation from the channel bed and some lower banks. This increases flow velocities and reduces the resistance of the bed and banks to erosion. Sediment supply is increased and the flow has a greater force to erode and transport it. This can degrade water quality at the site. *Potential increase in channel bed and bank erosion due to brushing and spraying is addressed in Section 5.1.2 (Hydrology and Hydraulics). The*

potential increase in downstream turbidity associated with increased erosion due to brushing and spraying is addressed below in Section 5.2.2.3. The impacts of increased turbidity on fish and aquatic organisms are addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife).

3. Water quality can be degraded locally and downstream by heating of surface water caused by vegetation removal from bed and banks by gradall desilting, brushing, and shaping operations. *The effect of maintenance activities on water temperatures is addressed below in Section 5.2.2.3. The impact of increased water temperatures on fish and aquatic organisms is addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife).*

4. Where vegetation is removed from wide riverbeds of the Santa Maria and Santa Ynez rivers, water quality can also be degraded. *The effect of brushing and spraying vegetation on downstream turbidity and water temperatures is addressed below in Section 5.2.2.3. The biological consequences of these impacts are addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife).*

5. Channel desilting and shaping disrupt sediments in the channel bed and banks which release fine sediments directly into the watercourse when water is present. *Potential increase in channel bed and bank erosion due to desilting and shaping is addressed in Section 5.1.2 (Hydrology and Hydraulics). The potential increase in downstream turbidity associated with increased erosion due to brushing and spraying is addressed below in Section 5.2.2.3. The impacts of increased turbidity on fish and aquatic organisms are addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife).*

6. Channel desilting and shaping release fine sediments directly into the watercourse during later flood events because the protective armor layer of coarse sediment, which often overlies finer sediments on streambeds, is destroyed. *Potential increase in channel bed and bank erosion due to desilting and shaping is addressed in Section 5.1.2 (Hydrology and Hydraulics). The potential increase in downstream turbidity associated with increased erosion due to brushing and spraying is addressed below in Section 5.2.2.3. The impacts of increased turbidity on fish and aquatic organisms are addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife).*

7. In large scale desilting operations such as in San Antonio Creek in North County, Goleta Slough, and lower Atascadero Creek in South County, suspended sediment is widely dispersed directly into water. *The routine maintenance program does not include desilting of Goleta Slough and lower Atascadero Creek. Potential increases in suspended sediments and turbidity due to desilting and channel shaping operations, in general, are addressed below in Section 5.2.2.3.*

8. Desilting and shaping disrupts the natural geometry of streams and estuaries. Flooding after the operation shapes the channel and bank sediments by erosion and/or deposition of sediment. This releases fine sediments locally and downstream. Release of sediment locally from the project site can disrupt reaches downstream and accelerate bank erosion. *Potential increase in channel bed and bank erosion due to desilting and shaping is addressed in Section 5.1.2 (Hydrology and Hydraulics).*

9. Desilting and shaping impacts are particularly severe where gradall or dragline is used and no protective vegetation has been allowed on the channel banks or bed. *Potential increase in*

channel bed and bank erosion due to desilting and shaping is addressed in Section 5.1.2 (Hydrology and Hydraulics).

"Environmental Toxicology Impacts"

1. Since glyphosate is a non-selective herbicide capable of controlling a variety of species of plant life, it can impact plants that are considered to be rare or of regional significance. Non-target plants located in and around flowing channels subject to Aquamaster™ treatment would be especially vulnerable. *The potential for the unintended application of herbicide to non-target vegetation, including rare plants, is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The potential for increasing herbicide concentrations in surface waters after spraying is addressed below in Section 5.2.2.3.*

2. Glyphosate application can result in ecological upset for avian species that have considerable interaction with creek channel environments. *The potential for herbicide application to affect fish and wildlife species is addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife). The potential for increasing herbicide concentrations in surface waters after spraying is addressed below in Section 5.2.2.3.*

3. A low potential exists for bioconcentration of glyphostate in aquatic organisms. *The potential for herbicide application to affect fish and wildlife species is addressed in Section 5.4.2 (Fish, Aquatic Species, and Wildlife). The potential for increasing herbicide concentrations in surface waters after spraying is addressed below in Section 5.2.2.3.*

4. Crude estimates suggest that applicators may receive a daily dose of up to 0.20 mg/kg body weight of absorded glyphosate. *The District observes all required worker safety procedures when handling and applying herbicides. As such, worker exposure to herbicides is avoided, in accordance with state and federal laws and regulations. No environmental impact would result directly or indirectly from an individual worker being accidentally exposure to herbicides. The impact of accidental releases to the environment are addressed below in Section 5.2.2.3.*

5. Short term contact with glyphosate on the skin or in the eyes may result in significant irritation. Since such occurrences are rare if proper handling precautions are followed, the impacts are considered adverse but not significant. *The District observes all required worker safety procedures when handling and applying herbicides. As such, worker exposure to herbicides is avoided, in accordance with state and federal laws and regulations. No environmental impact would result directly or indirectly from an individual worker being accidentally exposure to herbicides. The impact of accidental releases to the environment are addressed below in Section 5.2.2.3.*

6. As a non-selective herbicide capable of controlling a variety of species of plant life, diuron can impact plants that are considered rare or of regional significance. *This impact is no longer applicable, as the District does not use this herbicide.*

7. Diuron is extremely toxic to algae and moderately toxic to several species of bacteria and fungi. Typical applications of diuron to clear channel access roads could cause toxicity in microorganisms, and thus, to have a potentially significant impact on such microorganisms. *There is no need to address this impact further, based on the 1991 Final EIR conclusions that the application of this herbicide would be less than significant.*

8. Applicators may assume slight risks of skin and/or eye irritation from mixing and applying diuron. Accordingly, there is a potentially significant impact to human health of persons operating with diuron. *This impact is no longer applicable, as the District does not use this herbicide.*

9. The herbicide formulation Krovar VI^{TM} contains the herbicide bromacil in addition to diuron. bromacil readily leaches through the soil and has been detected in groundwater following agricultural use. Hence, use of Krovar VI^{TM} has the potential for significant impact on water quality through contamination of groundwater. *This impact is no longer applicable, as the District does not use this herbicide.*

10. Oust^{TM} herbicide is non-selective and capable of killing a variety of plants. Oust^{TM} can also migrate to non-target areas and impact plants that are considered rare, or regional significance, or of economic importance. *This impact is no longer applicable, as the District does not use this herbicide.*

11. Weedar Emulsamine^{TM} E-3 herbicide contains a mixture of two salt forms of 2,4-D. Both active ingredients are toxic to a variety of broad leaf plants. Aerial application to control river bed willows can eliminate non-target plants in the river bed including those considered rare or of regional significance. This is considered a potentially significant impact. *This impact is no longer applicable, as the District does not use these herbicides.*

12. Non-target plants outside the intended spray area may also be affected due to herbicide drift from aerial application. This impact on non-target plants is also considered a potentially significant impact. *The potential for the unintended application of herbicide to non-target vegetation is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The potential for increasing herbicide concentrations in surface waters after spraying is addressed below in Section 5.2.2.3.*

13. Results of human exposure studies using 2,4-D indicated that mixer/loaders and observers may approach the established acceptable daily intake of 0.3 mg/kg body weight per day. Direct contact with the herbicide may cause mild skin or eye irritation. The mixer loaders and observers in close contact with 2,4-D may be exposed to a significant hazard to human health. *The District does not use this herbicide.*

<u>*Previously Identified Class III Impacts*</u>

"Water Quality Impacts"

1. In some instances, stream temperatures can be degraded but less severely, where only bed vegetation is removed and enough bank vegetation remains to provide adequate shading. *This impact is addressed below in Section 5.2.2.3.*

"Environmental Toxicology Impacts"

14. Groundwater is at minimal risk of contamination by accident or error in the application of glyphosate. Water quality impacts from glyphosate are considered insignificant. *There is no need to address this impact further, based on the 1991 Final EIR conclusions that the application of herbicides would not affect groundwater quality.*

15. The herbicide formulation Karmex™ contains only diuron and is considered to pose adverse, but not significant impacts on water quality since it has a low leaching potential. *There is no need to address this impact further, based on the 1991 Final EIR conclusions that the application of this herbicide would be less than significant.*

16. The vapor pressure of diuron at 50 C is very low. The effects of diuron on air quality are therefore, considered to be insignificant. *There is no need to address this impact further, based on the 1991 Final EIR conclusions that the application of this herbicide would be less than significant.*

17. Except for aquatic microorganisms, the faunal impact of diuron is considered insignificant. *There is no need to address this impact further, based on the 1991 Final EIR conclusions that the application of this herbicide would be less than significant..*

18. The vapor pressure of the two herbicidal ingredients in the formation (diuron) are negligible. The potential for volatization of the chemicals from soil and/or water is not great. The potential impact on air quality is accordingly not considered to be significant. *There is no need to address this impact further, based on the 1991 Final EIR conclusions that the application of this herbicide would be less than significant.*

19. Based on monitoring studies the following applications of 2,4-D to forests, which showed the herbicide levels in runoff water to be very low and below the California state standards, Weedar Emulsamine™ E-3 impacts on water quality are considered insignificant. *This impact is no longer applicable, as the District does not use these herbicides.*

20. At the levels of herbicide expected in water following aerial application of Weedar Emulsamine™ E-3, a large margin of safety for aquatic fauna is expected, and potential impacts are considered in significant. *This impact is no longer applicable, as the District does not use this herbicide.*

5.2.2.3 Potential Impacts

<u>Increased Sedimentation and Turbidity</u>

Several maintenance activities disturb the channel bed that in turn could increase channel erosion and downstream sedimentation, as listed below:

- Brushing, mowing, and spraying channel bed vegetation – The first two actions remove the aboveground portions of plants on the channel bed, and may increase flows that erode more channel sediments than would occur without maintenance. Spraying kills the plants on the channel bed whose roots provide stability and protection from erosion, increasing the potential for increased channel bed erosion. It should be noted that the District does not remove vegetation from the banks to increase channel capacity; as such, there would be no bank erosion contributing to sedimentation impacts.

- Channel shaping, desilting, bank stabilization by placing fill or grading banks, pilot channel construction, equipment movement on the channel bed, and pilot channel clearing in basins –

these actions physically disturb bed materials, which may increase the potential for channel bed erosion.

- Construction or repair of bank protection, construction and repair of grade stabilizers, and access ramp construction - these actions physically disturb the bank, which may or may not be exposed to erosive flows depending upon its elevation and location relative to the channel invert.

Erosion of channel bed or bank material may cause an increase in the wash and bed loads of the drainage at and below the affected reach. The amount of material eroded is dependent upon the velocity of the flows and its inherent capability to convey more sediment. For example, sediment-laden flows from the upper watershed have little capability to suspend more wash load, and therefore, would not cause erosion of fine material from the bed. It should also be noted that channel erosion is a natural process in all maintained drainages in the County. Sediments are generated in the upper watershed as mountains erode. The sediments are conveyed along the watercourse, and in a natural system, are deposited on the floodplain during infrequent events to create the valley landforms. More sediment is conveyed with higher flows due to the greater kinetic energy of the stream. During most runoff events in the County, the initial flows carry sediment and exhibit very high turbidity. As the flows recede, sediment content and turbidity decrease.

Given that erosion, sedimentation, and turbidity are natural events in unmaintained and maintained drainages, the primary issue is whether maintenance activities cause an increase in sedimentation and turbidity that may violate water quality objectives, adversely affect beneficial uses (including recreational uses), or substantially affect fish and aquatic organisms. The maintenance actions listed above may contribute to the sediment loading and turbidity levels during the winter subsequent to the maintenance activities, but this impact is not considered significant for the following reasons:

1. All maintenance activities would occur in the summer or fall prior to the winter runoff. Hence, there is a period of time for channel bed material to become armored through settling and/or vegetation recolonization.

2. During the construction or repair of bank protection and grade stabilizers and the establishment of new access ramps, the District stabilizes the affected areas through grading and revegetation. Hence, the potential for increased erosion and sedimentation from these actions are reduced. Furthermore, the area affected by these actions is very small, usually less than 1,000 square feet.

3. Brushing and spraying is primarily used for emerging seedlings and saplings of willow, mulefat, and cottonwood plants, most of which are rooted on sandbars and elevated landforms on the channel bed, not in the low flow channel. Brushing does not kill the roots, which remain intact for at least several months, during which time the winter flows would commence.

4. The amount of sediment conveyed through the County's drainages and the associated turbidity levels vastly exceed any amount generated by the maintenance activities. For example, brushing or desilting activities on a typical creek may affect 5,000 square feet (or about 0.1 acre). This amount is negligible compared to the watersheds of the drainages in the County that range from 5,000 to 50,000 acres.

5. During high flows the suspended sediment and turbidity levels naturally exceed the water quality objectives for total suspended sediments and sediments from the Central Coast Region Basin Plan, which are listed below. These elevated levels are temporary and not chronic conditions. Any contribution from maintenance activities would occur at the same time there are naturally high sediment and turbidity levels.

Total suspended solids (TSS)	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Sediments	The suspended sediment load and suspended sediment discharge rate of surface water shall not be altered in such a manner to cause nuisance or adversely affect beneficial uses.

6. Mowing of emergent vegetation in several North County drainages would not increase sediment loads and turbidity because the mowing only removes a portion of the aboveground plants (e.g., cattails and bulrushes), leaving the lower stems and roots to protect the channel substrate.

Based on the above considerations, the temporary increase in sediment and turbidity levels associated with certain maintenance activities is considered an adverse, but not significant impact (Class III). However, the District will minimize sedimentation during routine maintenance activities by implementing Mitigation Measure W-1 in which the area disturbed is minimized to the extent feasible, and channel bed areas susceptible to erosion after maintenance would be stabilized by revegetation.

<u>Potentially Adverse Herbicide Concentrations</u>

Herbicide is applied to patches of obstructive vegetation that reduces channel capacity by its mass, or is likely to cause a build up of sediment in the future. Foliage of the plants is sprayed with Aquamaster™ (formerly Rodeo™ or Round-up™ (1% concentration). Herbicides are typically applied to non-native plants in the channel bed that do not have woody stems such as giant reed, german ivy, ironweed, and castor bean. The primary herbicide treatment occurs in the summer or fall when flows are absent. Treated areas may be spot-sprayed again in May or June of the following year to ensure that the affected vegetation does not recover.

Herbicide application is very patchy. That is, only clumps of plants are sprayed. Most low-growing plants such as grasses and prostrate herbs near the channel surface are not affected. Individual plants and clumps of plants are sprayed with a hand-held spray wand. Only vegetative material is sprayed;

herbicide is not applied to open water. Most herbicide applications to man-altered channels in the North County are conducted using a boom truck.

The active ingredient in Aquamaster™ and Round-up™ is glyphosate. They are non-restricted herbicides and do not require a certified applicator, although District field supervisors are all certified applicators. Aquamaster™ is applied with a surfactant to enhance its effectiveness by spreading and retaining the herbicide on the plant surfaces, and by promoting absorption. Surfactants are blends of petroleum-based oils (i.e., paraffin) that reduce surface tension on the leaf surface. All state and federal requirements to ensure public safety and environmental protection are observed. Signs are placed along the creek banks for 48 hours when herbicides are applied.

Aquamaster™ is used when there is open water in proximity of the areas to be treated. Hence, Aquamaster™ is used in the channel bottom when water is present, while Round-up™ is used almost exclusively on banks. Aquamaster™ is registered for use on aquatic plants in open water conditions and in general, for use in aquatic settings (EPA Registration No. 524-343; see also EPA's Material Safety Data Sheet (MSDS) for the product). It can be applied by aerial application, although the District does not use that method. It is non-toxic to fish and aquatic organisms at recommended application rates.

The primary water quality impact is the potential for elevated levels of herbicide (and its active ingredient, glyphosate) in the water of a drainage. The potential adverse effects of elevated levels of glyphosate on fish and aquatic organisms is addressed in Section 5.4.2, and on public health is addressed in Section 5.10.2.

Once the herbicide is applied to plant foliage, it is readily taken up and metabolized, and as such, does not enter the water. Herbicides can only be introduced to the drainage water by three mechanisms: (1) overspray that deposits herbicide directly into open water; (2) overspray that deposits herbicide on dry substrates where it may be dissolved by flowing water at a later time; and (3) herbicide dripping from a plant leaf onto water below due to excessive application. The potential for a substantial amount of herbicide to be introduced to the water in a drainage from routine maintenance spraying is addressed below.

- **The Potential for Overspray.** As noted above, herbicides are mostly applied by field crews with hand wands, with the exception of several large North County drainages where boom spraying is used on dense cattail patches. There is a certain amount of overspray with both methods that cannot be feasibly avoided. Field crews are trained to direct the spray to plants, as precisely as possible. The amount of overspray cannot be determined. However, the amount of herbicide introduced to the aquatic environment due to overspray is minimal. For example, most of the vegetation that is sprayed under the routine maintenance program is rooted on dry sandbars where overspray lands on dry substrate. Most of the spraying occurs in the summer and fall when water is not present in the drainages. Finally, the District personnel carefully aims and applies suitable amount of herbicide on vegetation rooted in open water to purposely reduce the amount of overspray into open water. Nevertheless, it should be noted that Aquamaster™ is designed to be applied to open water.

- **<u>Fate of Herbicide that Lands on Water.</u>** Glyphosate is very soluble in water. The half-life of glyphosate in water varies from 35 to 65 days. In water, it is absorbed to bottom or suspended sediment particles. Although the District minimizes the potential for introducing Aquamaster™ into water, it should be noted that Aquamaster™ was designed for direct application to water. Aquamaster™ is registered for use on aquatic plants in open water conditions. The EPA label for Aquamaster™ states: "This product may be applied to emerged weeds in all bodies of fresh and brackish water which may be flowing, nonflowing, or transient. This includes lakes, rivers, streams, ponds, estuaries .... wildlife habitat restoration and management areas, and similar sites." There is no restriction on the use of treated water for irrigation, recreation, wildlife habitat, or domestic purposes.

- **<u>Fate of Herbicide that Lands on Soils</u>**. Glyphosate on surface soils is subject to heat degradation over time. Some glyphosate will penetrate the soil where it is strongly absorbed. Glyphosate is stable in the soil for varying lengths of time, depending upon soil texture and organic matter content. The average half-life of glyphosate in the soil is about 47 days, but can range from 3 to 130 days. Soil microorganisms break down glyphosate to aminomethylphosphonic acid, which is further broken down by soil microorganisms to carbon dioxide and nitrogen compounds.

  If glyphosate is introduced to subsoils, it is unlikely to be leached. The EPA label for Aquamaster™ states: "When this product comes in contact with soils (on the soil surface or as suspended soil or sediment in water), it is bound to soil particles. Under recommended use conditions, once this product is bound to soil particles, it is not available for plant uptake and will not harm off-site vegetation where roots grow into the treatment area. Under the recommended use conditions, the strong affinity of this product to soil particles prevents this product from leaching out of the soil profile and entering the groundwater. The affinity between this product and soil particles remains until this product is degraded, which is primarily a biological degradation process carried out under both aerobic and anaerobic conditions by soil microflora."

In conclusion, the application of herbicide to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainages where fish, aquatic organisms, and humans could be exposed because of the following reasons: (1) no herbicide is directly applied to open water; (2) overspray is minimized by precise spraying by trained field crews; (3) most spraying occurs in the summer and fall when flows are absent in drainages; (4) glyphosate is strongly absorbed by soil particles and not easily mobilized once it has contact with soils or wet sediments; and (5) residual herbicide in soils or sediments are subject to microbial degradation.

There is no evidence to indicate that spraying by the District causes exceedances of the water quality objective for glyphosate based on water quality sampling in creeks following spraying events (see below). However, there is a potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray, which would degrade water quality. While this impact would be localized and temporary, it is considered a significant, but mitigable cumulative impact (Class II) because of the wide use of herbicides throughout the county. To reduce this impact, the District will continue to minimize the amount of herbicide used in the program and the potential introduction of herbicide to the environment by implementing Mitigation Measure W-2. This conclusion is consistent with the finding in the 1991 Final EIR that water quality impacts of herbicide use can be fully mitigated.

The 1999-2000 water quality data from creeks throughout the county indicate that glyphosate is present in most creeks. Glyphosate is ubiquitous because the use of Aquamaster™ and Roundup™ is very common in farmlands, orchards, greenhouses, nurseries, commercial landscaping, and residences. The District's spraying contributes to the overall loading on the creeks. There are no available data or analytical tools to determine what percentage of glyphosate is due to the District's maintenance work. However, the 1999-2000 water quality data suggests that the District's contribution may be very small because spraying occurs only in localized reaches, and because the spraying varies from one creek to another from year to year. In contrast, herbicide applications in residential and agricultural areas occur more frequently. Anecdotal information from commercial herbicide sources in the region indicates that the District's purchase of herbicides is very minor (10 percent) compared to agricultural, commercial, and residential users.

The 1999-2000 data show that glyphosate was detected in more creeks in which there was no spraying by the District prior to the winter rains in 1999 (e.g., Orcutt, Devereaux, Eagle, Tecolote, Bell, Glen Annie, San Jose, Carneros, Oak, Garrapata, and Rincon creeks) than in creeks where spraying occur prior to the winter runoff (e.g., Carpinteria, Franklin, Santa Monica, Toro Canyon, Arroyo Burro). These data clearly indicate that the presence of glyphosate in the drainages of the county is due to sources other than the District. Equally important is the fact that average and peak concentrations of glyphosate were below the Basin Plan water quality objective.

In September and October 2001, the District conducted water quality sampling along six creeks prior to, and after, herbicide spraying to determine concentrations of glyphosate in downstream water. Sampling occurred above the work site (as a control), and at varying distances from the work site immediately following spraying (i.e., within an hour), 24 hours after spraying, and 96 hours after spraying. The nearest sampling site was directly downstream of the work site. The results are summarized below in Table 5-7.5. Glyphosate was not detected in most samples. The highest concentrations occurred on the day of spraying and immediately below the work site. Key conclusions of the analyses are as follows:

- Glyphosate concentrations were reduced to non-detectable levels and within 24 to 96 hours of the spraying event
- Gglyphosate concentrations are usually non-detectable immediately below the work site and non-detectable or at negligible levels several hundred from the work site
- All observed concentrations were at least one or two orders of magnitude lower than the threshold concentrations for adverse effects on aquatic life.

TABLE 5-7.5
SUMMARY OF WATER QUALITY SAMPLING IN FALL 2001

Sampling Sites (Sept - Oct 2001)	Results of Sampling Immediately after Spraying, 24 hours later, and 96 hours later - Glyphosate Concentration
Winchester Canyon - One work area, two downstream sampling sites	7 of 8 samples were non-detect; one sample at 4 mg/l immediately after spraying, then was non-detect at 24 and 96 hours later
Tecolote Creek - Two work areas, four downstream sampling sites	10 of 13 samples were non-detect. Highest sample was 0.61 mg/l immediately after spraying, then was 0.26 mg/l at 24 hours, and non-detect at 96 hours after spraying
San Ysidro Creek - One work area, two downstream sampling sites	All samples were non-detect
San Pedro Creek - Two work areas, three downstream sampling sites	6 of 7 samples were non-detect; one sample was 0.13 mg/l immediately after spraying, then was non-detect at 24 and 96 hours later
Orcutt Solomon Creek - Two work areas, and three downstream sampling sites	12 of 17 samples were non-detect; highest sample was 16 mg/l immediately after spraying and immediately to the work area. Levels were reduced to 4.9 mg/l at 24 hours and 0.33 mg/l at 96 hours at the same sampling site. At second site, the highest sample was 1.2 mg/l immediately after spraying and adjacent to the work area. Samples at the same site were non-detect at 24 and 96 hours.
Atasacadero Creek - One large work area, and 6 downstream sampling sites	11 of 16 samples were non-detect; highest sample was 2 mg/l immediately after spraying adjacent to the work area. Sample was 0.95 mg/l at 24 hours and non-detect at 96 hours at the same site.

Since the issuance of the Draft EIR, the District has identified several additional mitigation measures to further reduce the impact of herbicide application and ensure that the impact remains a Class II impact, and to contribute to improved water quality along creeks, in general. These measures include W-5 (monitoring during application and curtailing the program if adverse concentrations are noted), W-6 (landowner education about creek water quality), W-7 (District crews reporting water quality problems by others), and W-8 (a commitment to reduce herbicide use by the District over time). Toxicological data and studies used by the District to establish threshold levels in Mitigation Measure W-5 include Mitchell, Chapman, and Long (1987), Wan, Watts, and Moul (1989), and Goldsborough and Brown (1993), all of which are available from the District's files.

Reduction in Biofiltration

Stormwater quality can be improved as stormwater passes through wetlands. Many natural ecological and physical processes facilitate the cleansing or biofiltering effect of wetlands. Wetlands are particularly effective at reducing levels of biological oxygen demand (BOD), suspended solids, metals, and nutrients. For example, nutrients are removed in a wetland through several processes, including biological uptake by wetland plants, atmospheric release during nitrification and denitrification processes, and adsorption to sediments. Suspended solids are removed through adsorption to plants. Metals are primarily removed by plant uptake and adsorption. If the wetland detains water for a period of time, water quality can be improved by the deposition of sediments (which contain most stormwater pollutants), and by infiltration into the soils where stormwater is cleansed by physical and chemical reactions with soils. The effectiveness of pollutant removal is affected by many factors, including initial pollutant concentration, hydraulic residence time, and emergent vegetation coverage.

Wetlands can also reduce coliform bacteria through several mechanisms, including natural die-off of the bacteria due to extreme temperature and salinity conditions, sedimentation, adsorption to plant material, and aggregate formation. Sunlight on open water will reduce free-floating bacteria due to the lethal effects of ultraviolet radiation on bacteria. Conditions of high vegetation density, large zooplankton populations and water clarity to promote penetration of ultraviolet light will enhance removal of coliform and related bacteria.

Natural biofiltering in creeks occurs under the following circumstances: low flow channel or marshy areas with emergent vegetation where there is prolonged (e.g., days) water-vegetation contact, exposure to sunlight, and sediment deposition. Biofiltering does not occur during storm runoff, and is less effective in areas with shallow water, woody stems in the saturated zone, and in cool shady areas. Woody stems trap sediments where contaminants are often concentrated.

The removal and thinning of vegetation in the channel bottom as part of the routine channel maintenance program is not expected to have a significant effect on biofiltering functions on any individual drainage for the following reasons:

- Brushing is conducted to remove vegetation that can obstruct flows, or that will trap and accumulate sediments. Plant species typically removed include mulefat, willow, sycamore, and cottonwood saplings that have colonized the riverbed. Herbicide spraying is often used instead of brushing to remove obstructive or silt-trapping vegetation that do not have woody stems such as giant reed, german ivy, ironweed, and castor bean. Most of this vegetation is not emergent – that is, it is not rooted in standing or flowing water. As such, it does not provide a significant biofiltering benefit, if any.

- When the District mows emergent wetlands (i.e., cattails) along certain North County drainages, the lower stems and roots remain intact, allowing the plants to re-sprout and continue their biofiltering functions.

Nevertheless, the District recognizes that there is a cumulative effect of brushing and spraying on drainages throughout the County that could contribute to an overall decrease in water quality. Hence, the removal or thinning of vegetation under the routine maintenance program can result in a degradation of water quality that is considered a cumulatively significant and unmitigable impact (Class I). Mitigation Measure W-3 would reduce the magnitude of this impact by avoiding the removal of emergent wetland vegetation in the channel invert where biofiltering may occur due to persistent water-vegetation contact.

Impacts of Accidental Releases

Heavy equipment is used in the routine maintenance program for desilting, channel shaping, and mowing. Most of the time the equipment is situated on a bank, but there are occasions when a dozer is working within the channel. In addition, clearing a pilot channel in a debris basin requires access to the creek bed. Accidental leakage or spill of fuel and/or oil from heavy equipment working within or directly adjacent to the watercourse or in a debris basin can cause a discharge of pollutants to the creek, which would degrade water quality. This impact is anticipated to be highly localized because most accidental spills are limited in quantity (e.g., less than 50 gallons) and would occur in the dry season when flows are absent.

The potential for accidental spills of herbicides is considered low because the herbicide containers on backpack units are under constant control of a trained applicator, and because herbicides are not dispensed or mixed in a channel. The volume of herbicide that could be released from a single unit is small (less than 10 gallons) and would likely occur in a dry channel where the spill could be easily contained. No spills have occurred in the past nine years of the routine maintenance program.

The impact of accidental spills is considered significant, but mitigable (Class II). To avoid a significant impact, the District will implement Mitigation Measure W-4, which limits the potential for accidental releases to drainages, and provides for spill containment and clean up.

Potential Increase in Water Temperatures

Brushing and spraying cause the removal of vegetation in the channel bed. As such, there is a potential for any water present in the channel bottom to be exposed to greater solar radiation because the shading effect of the in-channel vegetation would be removed. Along the South Coast, this effect is expected to be minor because: (1) water is generally not present under the vegetation being removed; and (2) the vegetation removed from maintained creeks does not generally create a dense canopy with a shading effect. In the North County, brushing or spraying drainages with cattails where standing water is present may cause greater solar radiation to reach the water surface. The overall impact of brushing and spraying throughout the County on water temperatures is expected to be less than significant (Class III) primary because most of the vegetation affected under the program does not occur in standing water nor provide critical shading. The most effective shading of pools and runs in drainages occurs from large canopy trees on the banks. The

District does not remove bank vegetation as part of routine brushing and spraying; hence, the primary factor regulating water temperatures is not affected by maintenance.

5.2.3 Mitigation Measures

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. ***Monitoring and Timing:*** *The District staff will conduct and/or oversee the maintenance work, and ensure that the impact area is minimized, filled areas are compacted, appropriate seeding is implemented, and sediment containment occurs.* ***Reporting:*** *A summary of the maintenance work will be documented in the annual post maintenance report. The success of seeding will be documented in subsequent annual surveys.*

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. 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. ***Monitoring and Timing:*** *The District staff will conduct and/or oversee the maintenance work to ensure that the appropriate herbicide application method is used by field crews, identify target vegetation, and place warning signs.* ***Reporting:*** *A summary of the maintenance work will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing**: The District staff will conduct and/or oversee the maintenance work, and identify areas to be seeded pursuant to this measure. Areas to be seeded will be identified in the Annual Maintenance Plan. **Reporting**: A summary of the maintenance work will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing**: The District staff will conduct and/or oversee the maintenance work, and ensure that the appropriate spill avoidance and containment procedures are implemented. **Reporting**: Accidental spills or leaks, and the associated clean up, will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing.** District staff shall conduct the water quality sampling as noted above. **Reporting.** The Annual Plan shall indicate where water quality sampling will be conducted, and the annual post-maintenance report shall include the results.*

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. ***Monitoring and Timing.*** *The District staff will complete the brochure within one year of the approval of the updated maintenance program.* ***Reporting.*** *The District shall summarize the number of mailings each year in the post-maintenance annual report.*

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. ***Monitoring and Timing.*** *The District staff will make the above observations during all maintenance work and record the observations on a form, and if possible, with photographs.* ***Reporting.*** *The District shall summarize the number of reports filed each year in the annual post-maintenance reports.*

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 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. ***Monitoring and Timing.*** *The District shall carefully consider the use of herbicides in each Annual Plan, and seek alternative methods.* ***Reporting.*** *The District shall report the amount of herbicides applied each year and the miles of drainages affected in the Annual Plan and annual post-maintenance report, including a cumulative account of past years.*

5.3 WETLANDS, RIPARIAN HABITATS, AND RARE PLANTS

The impacts of the routine maintenance program on wetlands, riparian habitat, and rare plants are described below. Impacts to other biological resources (i.e., fish, aquatic species, wildlife, and sensitive vertebrate species) are addressed in Section 5.4.

5.3.1 Existing Conditions

5.3.1.1 Riparian Habitats

Overview of Habitat Conditions

A wide variety of habitats or vegetation types occur along the drainages and in the debris basins of Santa Barbara County. The type and characteristics of the habitat are dependent on many factors, primarily the type of disturbance regime (from scouring flows or sediment deposition), the amount of water available to plants, the substrate (e.g., coarse vs. fine), and the physical configuration of the drainage. An equally important factor is the extent of human disturbance. The District conducts routine maintenance along reaches where there is property, roads, and infrastructure to protect – that is, mostly in developed areas (including both agriculture and land development). Hence, these reaches generally do not exhibit natural channel and habitat conditions. While natural fluvial and vegetation succession processes may continue to occur in these human-altered drainages, the type and extent of habitat have generally been substantially affected by past land development, drainage, and flood control.

The South Coast has steep, and short watersheds with very high energy and short duration flows. A large amount of coarse sediments are transported through the drainages from the mountains. The drainages in the upper watershed are narrow, steep, and rocky. Riparian vegetation is restricted to a narrow band along the drainages. The slopes of these drainages flatten as they reach the coastal plains of Santa Barbara, Carpinteria, and Goleta. In their natural condition, these drainages had multiple channels across a broad delta of deposited sediments where extensive riparian vegetation was present. However, most of the drainages on the coastal plain have been channelized, or otherwise constrained, by agriculture, roads, bridges, and land development. As a result, the channels are often highly incised. Well-developed habitat is restricted to the banks due to high energy scouring flows and sediment transport within the channel. The width of the riparian habitat has been greatly narrowed over the past 100 years along these human-altered drainages. In addition, the flora of the riparian habitat has also been modified by the addition of invasive weeds and ornamental plants. Finally, the estuaries at the mouths of most South Coast creeks have been removed or highly altered.

In contrast, the North County drainages are mostly low gradient with fewer channelized reaches. Most of the larger watercourses, such as the San Antonio Creek and Santa Maria River, traverse agricultural areas. Cultivation has removed most of the original riparian vegetation on the floodplains of these drainages. As a result, riparian vegetation is absent or restricted to a very narrow band on the banks. Many of the drainages in the North County have been highly altered by channel shaping and re-alignment, primarily for agricultural drainage and flood protection. Hence, there is a substantial percentage of drainages with sparse vegetation on the banks. A greater amount of in-channel wetlands are present in the North County than on the South Coast due to the low gradient of the drainages, the larger watersheds with prolonged runoff periods, and agricultural runoff. There is an abundance of invasive weeds in the North County drainages, but fewer ornamentals.

A description of the various riparian habitats along the maintained drainages and at the debris basins is provided below. Riparian habitats are defined as vegetation types that occur in the channel and on the upper banks of drainages that are directly dependent upon the water and physical conditions of the drainage, and are distinctive from vegetation in the adjacent areas. Wetlands are a special type of riparian vegetation that occurs in the wettest locations in the drainage, and that exhibit unique soil and vegetation characteristics. The occurrence of wetlands is described below. Aquatic habitats are defined as seasonally or permanently wetted areas, with or without vegetation in the channel bottom. They are described separately in Section 5.4.1.

Creekbed Habitat Types

- Unvegetated Creek Bed and River Wash - creek beds and sand bars that are devoid of vegetation due to scouring, recent deposition, or very dry conditions. Many of these areas have active substrates that are mobilized during high flows. In scoured areas, the fine sediments have been removed, leaving coarse gravel and cobbles. These areas are generally located adjacent to the low flow channel. If left undisturbed for several years, they may be colonized by herbaceous riparian plants (see below).

- Freshwater Marsh/Emergent Wetlands - This habitat occurs where there is perennial ponded water or saturated soils, usually along the low flow channel or in protected pools along oxbows. The sites are exposed to full or partial sunlight - this habitat is poorly developed in full canopy streambeds. Due to its location, this habitat is susceptible to periodic removal by flood flows. It consists of a mixture of opportunistic, fast growing perennial herbs that are common to freshwater situations throughout southern California, including bulrush (*Scirpus* sp.), nutsedge (*Cyperus* sp.), spikerush (*Eleocharis laustris*), willow herb (*Epilobium paniculatum*), cattail (*Typha latifolia.*), watercress (*Rorippa nasturium-aquaticum*), horsetail (*Equisetum telmateia*), common rush (*Juncus patens*), speedwell (*Veronica anagallis-aquaticum*), bentgrass (*Agrostis semiverticillata*), and pondweed (*Potomogeton foliosus*).

  Common non-native species that occur in this habitat include umbrella plant (*Cyperus alternifolius and C. eragrostis*), Johnson grass (*Sorghum halepense*), kikuyu grass (*Pennisetum clandestinum*), rabbitsfoot grass (*Polypogon monspeliensis*), knotweed (*Polygonum puctatum*), barnyard grass (*Echinochloa crusgalli*), cocklebur (*Xanthium strumarium*), ironweed, and giant reed (*Arundo donax*).

  Freshwater marsh/emergent wetland occurs as small scattered stands along the wetted channel or in channel depressions along South Coast and North County creeks where perennial flow or standing water is rare. In contrast, dense monoculture stands of cattails often dominate the low flow channel in open, disturbed drainages in the North County where there is perennial flow due to natural and agricultural runoff, such as along lower Orcutt-Solomon Creek and Green Canyon Ditch.

- Herbaceous Riparian - A variety of small native perennial plants occur in the seasonally moist bottoms of drainages. They persist by either colonizing the channel bottom each year after flows recede, or withstanding the winter flows by laying over and/or re-sprouting. In general, these species occur as scattered individuals, rather than in dense stands. They occur on sandbars and protected, moist portions of the channel bed with full or partial sunlight. Common species include mugwort (*Artemisia douglasiana*), mulefat seedlings (*Baccharis glutinosa*), arroyo willow seedlings (*Salix lasiolepis*), ricegrass (*Oryzopsis millacea*), salt grass (*Distichlis spicata*), bentgrass (*Agrostis semiverticillata*), pimpernel (*Anagallis arvensis*), common smartweed (*Polygonum arensastrum*), and horehound (*Marrubium vulgare*). Non-native plants are also common, such as rabbitsfoot grass, periwinkle (*Vinca major*), curly dock (*Rumex crispus*), sow thistle (*Sonchus oleraceus*), horseweed (*Conyza canadensis*), white sweet clover (*Melilotus albus),* knotweed, and kikuyu grass. Exposed, disturbed portions of the creek bed are often dominated by invasive weeds such as castor bean (*Ricinus communis*), hemlock (*Conium maculatum*), black mustard (*Brassica nigra)*, wild radish (*Raphanus sativa*), and cocklebur (*Xanthium strumarium*). Giant reed also colonizes disturbed areas, forming dense stands over time.

- Riparian Scrub - This habitat consists of dense monocultures of arroyo willow or mulefat. This habitat occurs in the channel bottom or lower banks where there is periodic inundation, but insufficient flows to remove the woody plants. The density and height of plants varies depending upon the amount of moisture and sunlight in the channel. Stands over five years old may be six to eight feet high. This habitat is well-developed in broad, open drainages. It is a hardy vegetation that is able to withstand prolonged dry periods. Invasive non-native plants are infrequent.

Creek Bank and Floodplain Habitat Types

- Riparian Woodland - This habitat consists of mature trees that occur along the middle stream terraces, slope of banks, tops of banks, and floodplain of creeks. The most common trees include willow (arroyo, sandbar, narrow leaf and red willow), western sycamore (*Platanus racemosa*), and black cottonwood (*Populus trichocarpa)*. Other less common trees include white alder (*Alnus rhombilofolia*), elberberry (*Sambucus mexicana*), and California bay (*Umbellaria californica*). This habitat is rarely inundated. It creates a tall closed canopy over narrow drainages. A highly variable shrub understory is present with such species as Virgins bower (*Clematis ligusticifolia*), coffeeberry (*Rhamnus californica*), blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), bitter gooseberry (*Ribes ararum*), nightshade (*Solanum* sp.), and coyote brush. Many invasive weeds and ornamental plants are present in the understory, including English ivy (*Hedera helix*), German or Cape ivy (*Senecio mikanioides or Delzieria odorata*), nasturtium, ice plant (*Carpobrotus edulis*), myoporum, pittosporum, palms, and periwinkle

- Oak Woodland-Riparian Woodland - This habitat occurs on the floodplain adjacent to creeks where there are deep soils to support oak trees. It consists of a mixture of riparian woodland (see above) and coast live oak (*Quercus agrifolia*) woodland. In closed canopy woodlands, the understory is dominated by shade tolerant shrubs and woody vines such as nightshade, poison oak, and blackberry; and by perennial herbs such as wood mint and fiesta flower. In openings in the canopy, common understory shrubs include California sagebrush and coyote brush. Vines such as wild cucumber, honeysuckle, and virgin's bower often climb trees. The understory may also contain escaped ornamental plants, such as English ivy, German ivy, periwinkle, and nasturtium.

Along some drainages, the habitat consists of a mixture of coast live oak and western sycamore trees. The latter rise above the oak trees and provides patches of sunlight in the late winter and early spring when they are leafless. Many of the understory shrubs and herbs in coast live oak woodland appear in this vegetation type, particularly poison oak and blackberry. Other characteristic species include mugwort, horsetails, and willow. Frequent non-natives include eucalyptus, castor bean, myoporum, and periwinkle. This habitat is generally located outside any maintenance work areas.

- <u>Eucalyptus woodland</u>. This habitat consists of monoculture of large non-native evergreen trees, primarily blue gum (*Eucalyptus globulus*). These trees were planted in the late 1800s for both lumber and windbreaks, and have spread rapidly throughout the landscape, particularly along drainages. The stands occur on terraces above creeks. There is little to no understory. The woodlands generate a tremendous amount of litter, branches, and downed trees that often are deposited into creeks and create debris dams. This habitat is generally located outside any maintenance work areas.

- <u>Non-native Grassland</u> – This very common habitat type is dominated by widespread non-native grasses and herbs including Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena* sp.), and brome (*Bromus* sp.). The habitat occurs primarily on both disturbed and undisturbed exposed banks with limited seasonal moisture. These areas often have scattered invasive weeds (see Ruderal/Disturbed) and coastal sage scrub species.

- <u>Ruderal/Disturbed</u> – This habitat occurs on banks that have been disturbed by erosion or human action, and have become colonized with aggressive weeds, such as wild fennel (*Foeniculum vulgare)*, black mustard, castor bean, cheeseweed (*Malva parvifolia*), and wild radish, Italian thistle (*Carduus* sp.), milk thistle (*Silybum marianum*), white sweet clover, cocklebur, ox tongue (*Picris echioides*), horseweed, tree tobacco (*Nicotiana glauca*), and others.

- <u>Coastal Sage Scrub</u> – This habitat consists of a low, dense to sparse scrub dominated by coyote brush, California sage brush (*Artemisia californica*), goldenbush (*Isocoma venetus*), morning glory (*Calystegia macrostegia*), giant wild rye (*Leymus condensatus*), and annual non-native grasses (see above). Coastal sage scrub occurs on rocky, well-drained upper banks and terraces, usually with a south facing aspect. Elderberry trees are often found associated with coastal sage scrub stands.

5.3.1.2 Wetlands

Wetlands Regulated by the Corps of Engineers

Under Section 404 of the Clean Water Act, the Corps of Engineers (Corps) regulates the discharge of fill and dredged material into "waters of the United States", which are broadly defined in 33 CFR 328.3(a) to include navigable waters and others, including rivers, streams (including intermittent streams), and adjacent wetlands. The lateral limits of Corps 404 jurisdiction in non-tidal "waters" are defined as *the ordinary high water mark*, unless adjacent wetlands are present. If wetlands occur within, or adjacent to, "waters," the lateral limits of jurisdiction will extend beyond the ordinary high water mark to the outer edge of the wetlands. The term "ordinary high water mark" means the line on the shore or edge of a channel established by the fluctuation of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, destruction of vegetation, debris, etc. As such, in the absence of wetland vegetation, "waters" are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. The upstream limit of "waters" in the absence of wetlands is defined as the point where the ordinary high water mark is no longer perceptible.

The Corps defines wetlands as: *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions"* (33 CFR 328.3). The Corps has developed a field technique to identify wetlands that is often referred to as the "three-parameter technique" (Corps, 1987). This method involves a procedure to identify the three requisite characteristics of a wetland:

- Hydrophytic vegetation - a predominance of plants that are adapted to anaerobic soil conditions
- Hydric soils - soils classified as hydric or that exhibit characteristics of a reducing soil environment
- Wetland hydrology - inundation or soil saturation during a certain portion of the growing season

The Corps (1987) wetland delineation manual describes an approach to identify field indicators of the above characteristics. In general, all *three* characteristics must be evident by field indicators, and their presence must be determined independent of the other characteristics. Positive identification of wetlands based on the presence of less than three characteristics can only occur when one or more parameter is absent due to normal seasonal variation in environmental conditions, or due to recent human activities.

The Corps generally does not consider several types of watercourses or water features to be "waters of the United States" including, but not limited to: (1) non-tidal drainage and irrigation ditches excavated on dry land; (2) artificially irrigated areas which would revert to upland if the irrigation ceased; (3) artificial lakes or ponds created by excavating and/or diking dry land which are used exclusively for stock watering, irrigation, settling basins, or rice growing; <u>and (4) isolated waters with no interstate commerce connection or continuity with "navigable waters."</u>

The Corps' 1987 wetland delineation manual contains a section entitled "Man-Induced Wetlands," defined as an area that has developed some wetland characteristics due to intentional or incidental human activities. Examples include irrigated wetlands, cattle ponds, and wetlands in relocated stream channels. Some man-induced wetlands may be considered jurisdictional if the wetland hydrology has become the "normal circumstances" and hydric soils are developing. However, the manual states that "... *if hydrophytic vegetation is being maintained only because of man-induced wetland hydrology that would no longer exist if the activity were to be terminated the area should not be considered a wetland*".

<u>Wetland Recognized by Santa Barbara County</u>

In 1994, the County of Santa Barbara adopted guidelines for conducting biological impact assessment (*Environmental Thresholds and Guidelines Manual*). The guidelines state that the County has adopted the US Fish and Wildlife Service (USFWS) definition of wetlands. The definition was developed for the purpose of classifying wetlands for habitat evaluation purposes (Cowardin et al., 1979). It was never intended for regulatory uses. No manuals or other guidance on field techniques were developed to identify wetlands using the USFWS definition. The definition is as follows:

> *"Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soils; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year."*

The USFWS wetland definition is commonly considered a "one parameter" definition, in which only one of three wetland attributes (hydrophytic vegetation, hydric soils, or wetland hydrology) needs to be present in order for an area to be considered a wetland. Hence, the County routinely identifies wetlands by the presence of only one parameter. It should be noted that the use of a single parameter is inappropriate and can lead to inaccurate determinations (Tiner 1989). The above definition has been commonly misinterpreted because readers only focus on the second sentence, concluding that the USFWS definition only requires *one* of the three attributes (i.e., hydrophytic vegetation, hydric soils, or hydrology) be present in order to classify an area as a wetland. Tiner (1989) notes that the first sentence of the definition states that for an area to be classified as a wetland it must be periodically saturated or covered by shallow water. Clearly, hydrophytic vegetation and hydric soils would only develop as a direct result of a wetland hydrologic regime. The predominance of hydrophytes and hydric soils is a manifestation of wetland hydrology. Hence, there is an alternative interpretation of the USFWS wetland definition that requires the presence of wetland hydrology, and either hydric soils or hydrophytic vegetation (that is, the USFWS definition is more properly characterized as a two parameter definition).

The County recognizes wetlands by the presence of a single parameter (i.e., wetland hydrology, hydric soils, or wetland plants).

Wetlands Defined under the Coastal Act

Wetlands in the Coastal Zone are defined based on guidance in the Coastal Act, and guidance from the California Coastal Commission (CCC). The wetland definition in Section 30121 of the Coastal Act is as follows: *"Wetlands means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens."* The operative criterion in the above definition is the presence of shallow water on land. The definition does not reference hydric soils or vegetation types, nor does it state or imply the required duration of inundation. Based on the above language, it appears that the wetland definition from the CCC regulations requires two parameters for vegetated wetlands (i.e., hydrology and wetland plants).

In 1981, the CCC issued the *Interpretive Guidelines for Wetlands and Other Wet Environmentally Sensitive Areas* which used the USFWS wetland definition (see above). The CCC and Santa Barbara County have considered the USFWS definition a "one parameter" definition. In practice, most wetlands are identified by the dominance of hydrophytic vegetation, independent of considerations of hydric soils or wetland hydrology. Nevertheless, the 1981 guidelines indicate that wetlands may include a wide variety of different habitat types, and therefore: *"...some wetlands may not be readily identifiable by simple means. In such cases, the Commission also will rely on the presence of hydrophytes and/or the presence of hydric soils as evidence that an area may be periodically or permanently covered with shallow water. These are useful indicators of wetland conditions, but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetlands under the Coastal Act."*

Occurrence of Wetlands along Maintained Creeks and in Debris Basins

In general, the following habitat types are dominated by hydrophytic plants, and as such, would be considered wetlands under the County's definition of wetlands in non-Coastal Zone areas, and under the CCC's definition for wetlands in the Coastal Zone:

- Freshwater Marsh/Emergent Wetland
- Herbaceous Riparian
- Riparian Scrub

These habitats occur primarily on the bed of a channel or debris basin where periodic inundation occurs, as well as prolonged soil moisture. As such, wetland hydrology and hydric soils may also be present in these habitats, which would cause them to be considered Corps jurisdictional wetlands.

The habitat "Unvegetated Creek Bed and River Wash" does not represent a wetland because it does not contain vegetation. Other habitats such as Riparian Woodland and Oak-Riparian Woodland also do not represent wetlands under either the Coastal Act or Corps definitions because they do not have a predominance of wetland species.

5.3.1.2 Sensitive Plant Species

Sensitive plants consist of federal- and state-listed species (USFWS, 2000a; CDFG, 2000), federal and state species of concern (CDFG, 2000), plant species considered rare by the California Native Plant Society (CNPS) (Skinner and Pavlik, 1994), and plants that have been identified as regionally rare species by local botanists. A list of sensitive plant species that could occur in the maintained drainages and debris basins is provided in Table 5-8. Most of these species are associated with riparian and freshwater wetlands, including several aquatic species. In addition, there are several oak woodland species, which may occur on cool, moist creek banks in the upper watersheds of the South Coast. Sensitive species that occur in brackish water habitats and coastal salt marshes are not included in Table 5-8 because the routine maintenance program does not include work in estuarine habitats.

Since the adoption of the current maintenance program in 1992, District Biologist has conduct pre-maintenance biological surveys of the areas to be treated each spring. The District Biologist searches for the occurrence of the sensitive species listed in Table 5-8. To date, none of these species has been located at or near a maintenance site. Hence, the probability of sensitive species occurring at a maintenance site in the future is considered low.

5.3.2 Potential Impacts

5.3.2.1 Significant Impact Thresholds

The following thresholds are used to identify significant biological impacts. These thresholds are derived from the Environmental Checklist form in the most recent CEQA Guidelines.

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Does the project have the potential to threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant.

TABLE 5-8
SENSITIVE PLANT SPECIES THAT COULD OCCUR IN MAINTENANCE AREAS*

Common Name	Scientific Name	Typical Habitat in Portions of the County Where Maintenance Occurs	Protection Status		Confirmed (C) or Potential (P) Occurrence in or near Creeks, Ditches, and/or Basins			
			State	Local	South Coast	North County		
						Lompoc & Santa Ynez Valleys	Los Alamos Valley	Santa Maria Valley
Listed Species								
Gambel's water cress	*Rorippa gambelii*	Only known locations: Oso Flaco Lake and San Antonio Ck on VAFB	T	E			P	C
Non-Listed, but Regionally Rare Species								
Ammania	*Ammania coccinea*	Vernal flats; ponds in creeks; South Coast only		LC	P			
Annual hair-grass	*Deschampsia danthonoides*	Moist swales around creeks		LC	P	P	P	
Creek dogwood	*Cornus sericea ssp. occidentalis*	Creeks and seeps		LC	C	P	C	C
Fish's milkwort	*Polygala cornata var fishiae*	Cool banks of creeks; South Coast only	CNPS 4	LC	C			
Hoffman's gooseberry	*Ribes amarum var. hoffmannii*	Cool canyons on South Coast		LC	C			
Leafy pondweed	*Potomogeton foliosus*	Aquatic plant along rivers		LC	C	P		
Black-flowered figwort	*Scrophularia atrata*	Diatomaceous earth on hills above Lompoc; possible in cool areas of canyons	CNPS 1B	LC		C		
Plummer's baccharis	*Baccharis plummerae*	Cool rocky places in mountains canyons and creeks	CNPS 4	LC	C	P	P	P
Santa Barbara honeysuckle	*Lonicera subspicata var. subspicata*	Coastal scrub and woodland in canyons; South Coast only	CNPS 1B	LC	C			

Common Name	Scientific Name	Typical Habitat in Portions of the County Where Maintenance Occurs	Protection Status		Confirmed (C) or Potential (P) Occurrence in or near Creeks, Ditches, and/or Basins			
			State	Local	South Coast	North County		
						Lompoc & Santa Ynez Valleys	Los Alamos Valley	Santa Maria Valley
Water pimpernel	*Samolus valerandii ssp. parviflorus*	Seeps and marshy areas; South Coast only		LC	P			
Yerba mansa	*Anemopsis californica*	Freshwater marsh areas in channel		LC	C	P		C

*Non-exempt creeks and basins only. Excludes all tidally-influenced areas.
T= Threatened E= Endangered. CNPS = California Native Plant Society. LC = Local Concern

5.3.2.2 Previously Identified Impacts

The following impacts to habitat and rare plants were identified in the 1991 Final EIR, where they were categorized as "Botany Impacts." Impacts 1 through 8 were determined to be Class I (significant and unmitigable), while all others were determined to be Class II impacts (significant, but mitigable) or Class III (adverse, but not significant).

Previously Identified Class I Impacts

1. Brushing causes unavoidable significant cumulative impacts because of potential reduction in genetic variation of native flora including rare plants and morphologically variable populations. *This impact is no longer considered applicable because there is no evidence that the District has reduced genetic variation in native flora during the past nine years of maintenance. Brushing occurs periodically on different drainages, but it has not resulted in the extirpation of riparian vegetation from a drainage. The treated vegetation is composed of common in-stream riparian plants that are adapted to periodic catastrophic disturbances. These species (e.g., willow and mulefat) exhibit remarkable abilities to resprout and recolonize after natural disturbance and maintenance brushing. A continual source of genetic variation remains along each treated drainage because only a small fraction of the drainage is affected at any one time, and because most of the plant populations remain intact, providing future genetic material for reproduction and natural variability. There are no shortages of donor populations to colonize disturbed areas. The effect of brushing on rare plants is described below in Section 5.3.2.3.*

2. Brushing in streams causes an unavoidable significant impact because of the loss of natural habitat, native flora, rare plants, and rare plant habitat. *These impacts are addressed below in Section 5.3.2.3.*

3. Brushing, desilting, and shaping cause unavoidable significant impacts by acceleration of soil loss, especially in San Antonio Creek drainage in the North County, including downstream siltation and degradation of environmentally sensitive Barka Slough. *Erosion and sedimentation impacts are addressed in Section 5.1.2 (Hydrology and Hydraulics) as they relate to channel morphology and downstream siltation, in Section 5.2.2 (Water Quality) relative to turbidity, and in Section 5.4.2 (Aquatic Species, and Wildlife) relative to fish and aquatic organisms.*

4. Brushing causes unavoidable significant impacts because of the increase in invasive weeds along streams. *This impact is addressed below in Section 5.3.2.3.*

5. Spraying and desilting cause unavoidable significant cumulative impacts because of the potential reduction in genetic variation of native flora, including rare plants and morphologically variable populations. *This impact is no longer considered applicable because there is no evidence that the District has reduced genetic variation in native flora during the past nine years of maintenance. Brushing occurs periodically on different drainages, but it has not resulted in the extirpation of riparian vegetation from a drainage. The treated vegetation is composed of common in-stream riparian plants that are adapted to periodic catastrophic disturbances. These species (e.g., willow and mulefat) exhibit*

remarkable abilities to resprout and recolonize after natural disturbance and maintenance brushing. A continual source of genetic variation remains along each treated drainage because only a small fraction of the drainage is affected at any one time, and because most of the plant populations remain intact, providing future genetic material for reproduction and natural variability. There are no shortages of donor populations to colonize disturbed areas. The effect of spraying and desilting on rare plants is described below in Section 5.3.2.3.

6. Shaping causes unavoidable significant impacts by disruption of substrate, disruption of natural revegetation process, and increase in invasive weeds, all in South Coast streams. *Impacts on channel bed materials are evaluated in Section 5.1.2 (Hydrology and Hydraulics). Impacts of shaping on natural plant recruitment and succession processes, and on invasive weeds are described below in Section 5.3.2.3.*

7. Flood control devices, including debris basins, cause unavoidable significant impacts to certain streams because of loss of natural habitat. *This impact is addressed below, but only as it applies to the following new "devices" that would be installed under the updated maintenance program: new bank protection and new grade stabilizers. The impact of the original installation of existing debris basins and bank protection is not addressed in this EIR, only the impact on habitat due to maintenance of these facilities.*

8. Debris basins cause unavoidable significant impacts in river tributaries and upper portions of South Coast streams by loss of native habitat, loss of native flora, loss of rare plant habitat, acceleration of soil loss, and reduction in restoration potential. *This impact is not applicable, as environmental impact of installing the existing debris basins were addressed in a separate and previous process. This EIR only addresses the maintenance of the basins, not the impact of their presence.*

Previously Identified Class II Impacts

9. Brushing causes a significant impact because of acceleration of soil loss, especially for river banks and tributaries. *Erosion and sedimentation impacts due to brushing are addressed in Section 5.2.2 (Water Quality).*

10. Brushing causes a significant impact because of loss of natural habitat and native flora and increase in invasive weeds in rivers, tributaries, and estuary uplands. *These impacts are addressed below in Section 5.3.2.3 relative to the drainages included in the maintenance program. No "estuary uplands" are included in the program.*

11. Brushing and spraying cause a significant impact, especially in rivers, tributaries, and South Coast streams, because of the loss of natural habitat, native flora, rare plants, rare plant habitat, and acceleration of soil loss. *Impacts of brushing and spraying on habitat, flora, and rare plants are addressed below in Section 5.2.3.2. Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms.*

12. Spraying causes significant impacts because of the loss of natural habitat, native flora, rare plants, and restoration potential for estuary banks and uplands. *Impacts of spraying on*

habitat, flora, and rare plants are addressed below in Section 5.3.2.3. No maintenance work or restoration occurs on estuary banks as part of the routine maintenance program.

13. Desilting causes significant impacts because of the loss of natural habitat, native flora, rare plants, and reduction in restoration potential especially where desilting results in adjacent spoil piles. *Impacts of desilting on native habitat, flora, and rare plants are addressed below in Section 5.3.2.3. Spoil piles for dewatering sediments are placed in agricultural fields or in disturbed areas adjacent to creeks. These piles are temporary, and as such, do not affect "restoration potential" of these areas outside the creek.*

14. Desilting causes unavoidable significant impacts, especially in San Antonio Creek drainage in the North County, because of increase in invasive weeds. *The effect of desilting on invasive weeds, in general, is described below in Section 5.3.2.3.*

15. Desilting causes significant impacts because of the loss of natural habitat, native flora, rare plants, and reduction in restoration potential for estuaries and affected uplands especially where desilting results in adjacent spoil piles and dewatering sites (e.g., lower Tecolote and Carneros creeks, mouth of Atascadero Creek, and at Carpinteria Salt Marsh. *Impacts of desilting on native habitat, flora, and rare plants are addressed below in Section 5.3.2.3. Spoil piles for dewatering sediments are placed in agricultural fields or disturbed areas adjacent to creeks. These piles are temporary, and as such, do not affect "restoration potential" of these areas outside the creek. The effect of maintenance activities on natural recolonization and vegetation succession patterns is described below. The routine maintenance program does not include work in estuaries, lower Tecolotito and Carneros creeks south of Hollister Ave, the mouth of Atascadero Creek, and Carpinteria Marsh.*

16. Shaping causes significant impacts by acceleration of soil loss for river tributaries and loss of natural habitat, loss of native flora, and disruption of natural revegetation process for rivers and their tributaries. *Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms. Impacts to native habitat and flora are addressed below in Section 5.3.2.3. The effect of shaping on natural recolonization and vegetation succession patterns is also described below in Section 5.3.2.3.*

17. Shaping causes significant impacts through increase in invasive weeds along river banks. *The effect of shaping on invasive weeds, in general, is described below in Section 5.3.2.3.*

18. Shaping causes significant impacts because of loss of natural habitat and native flora for estuaries, acceleration of soil loss and limited loss of native flora and restoration potential for unlined ditches, and reductions in restoration potential, especially in San Antonio Creek and Green Canyon drainage in North County. *Maintenance work in estuaries does not occur under the routine maintenance program. Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms. The loss of habitat in unlined ditches due to maintenance work is described below in Section 5.3.2.3. The effect of shaping on natural recolonization and vegetation succession patterns is also described below for all drainages.*

19. Shaping causes significant impacts because of loss of natural habitat, loss of native flora, loss of rare plants, and acceleration of soil loss in South Coast streams. *Impacts of shaping on native habitat, flora, and rare plants are addressed below in Section 5.3.2.3. Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms.*

20. Flood control devices cause significant impacts to estuaries and adjacent uplands because of loss of natural habitats, loss of native flora, and increase in invasive weeds on berms. *This impact is not applicable because maintenance work in estuaries does not occur under the routine maintenance program.*

21. Use of flood control access ways causes significant impacts from localized loss of natural habitat, native flora, and rare plants, soil loss or compaction reduction in restoration potential and increase in invasive weeds for rivers, tributaries, streams, and estuaries. *The impact of flood control access ramps on habitat, native flora, rare plants, soil compaction, and invasive weeds is described below in Section 5.3.2.3.*

22. Use of flood control access ways causes significant impacts by reducing the restoration potential of unlined ditches, including those in the Green Canyon area. *The impact of using access ramps on habitat that develops on the ramps between maintenance events is described below in Section 5.3.2.3.*

<u>*Previously Identified Class III Impacts*</u>

23. There is an adverse but not significant impact from loss of limited natural habitat and native flora, and acceleration of soil loss from unlined ditches {due to spraying}. *The impact of herbicide use on habitat and native flora is described below. Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms.*

24. Desilting causes adverse but not significant impacts to rivers, adjacent uplands affected by spoil piles, and unlined ditches because of loss of natural habitat, native flora, rare plants, acceleration of soil loss, and reduction in restoration potential. *Impacts of desilting on native habitat, flora, and rare plants are addressed below in Section 5.3.2.3. Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality) and in Section 5.4.2 (Aquatic Species, and Wildlife), as they relate to fish and aquatic organisms. The effect of desilting on natural recolonization and vegetation succession patterns is also described below.*

25. Shaping causes adverse but not significant impacts through acceleration of soil loss for rivers. *Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms.*

26. Flood control devices cause adverse, but not significant impacts from loss of natural habitat, loss of native flora, and acceleration of soil loss from certain flood control devices in rivers, tributaries, and especially in the foothill portions of the South Coast streams. *This impact is addressed below in Section 5.3.2.3, but only as it applies to the following new "devices" that would be installed under the updated maintenance program: bank protection*

and new grade stabilizers. The above impact on habitat and native flora due to maintenance of existing "devices" is evaluated below in Section 5.3.2.3. Erosion and sedimentation impacts are addressed in Section 5.2.2 (Water Quality), and in Section 5.4.2 (Aquatic Species, and Wildlife) as they relate to fish and aquatic organisms.

27. Flood control devices including debris basins cause adverse but not significant impacts in river tributaries and upper portions of South Coast streams because of increase in invasive weeds from disturbance caused by debris basin maintenance. *The impact of debris basin maintenance on invasive weeds is addressed below in Section 5.3.2.3.*

5.3.2.3 Potential Impacts

<u>Reduce Amount and Quality of Channel Bottom Habitat</u>

Removal and/or thinning of vegetation from a channel bottom due to brushing, herbicide application, desilting, and channel shaping causes a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. This impact is temporary and reversible - that is, if maintenance work ceased in the affected drainage or basin, the same habitat would likely return due to natural successional processes. The affected wetland and riparian habitats in the channel bottom are adapted to periodic catastrophic disturbance from flooding. Hence, maintenance work has a similar impact as natural disturbances.

The most common habitats affected by brushing and spraying, and by clearing a pilot channel in debris basins, are early successional riparian scrub, riparian herbaceous, and ruderal. High value wetland and riparian habitats are not typically removed from the channel bottom. For example, most brushing involves removal of fallen eucalyptus, non-native weeds, and young willows or mulefat. Herbicides are typically applied to non-native plants in the channel bed such as cocklebur, thistle, ironweed, and castor bean. Herbicide application is very patchy. That is, only clumps of plants are sprayed. Most low-growing plants such as grasses and prostrate herbs near the channel surface are not affected. Although channels with dense emergent vegetation (i.e., bulrush, cattails) are mowed in the North County, the lower stems and roots are retained, allowing the plants to re-sprout. No mature trees are removed during brushing and spraying, and no native bank vegetation is removed or thinned. Finally, desilting typically occurs in a channel where sediments have recently accumulated and high value wetland or riparian habitats have not developed.

The amount of habitat affected each year varies greatly due to the varying number of maintenance locations, and the varying sizes of work areas. The linear distance of a maintenance activity can range from as little as 25 feet to over 2,000 feet. However, the impact zone may be very narrow (e.g., brushing a small 10-foot pilot channel) and discontinuous (e.g., herbicide spraying is directed at clumps of plants, not a continuous swath of channel). As described in Section 2.0, the average annual number of brushing sites on the South Coast and in the North County is 23 and 11, respectively. The average annual number of spraying sites on the South Coast and in the North County is 17 and 7, respectively. The actual vegetated habitat area affected typically ranges from 1,000 square feet to 5,000 square feet.

The temporary reduction in the amount and quality of channel bottom habitat due to maintenance activities will be offset by the District's updated habitat restoration plan (see Section 4.5), in which the functions of riparian and wetland habitats adversely affected by maintenance actions would be replaced in disturbed areas. The most common habitats that would be created are willow scrub or woodland, and mulefat scrub. In most cases, the District will restore habitat at or near the site of the maintenance activity. This approach ensures that adequate mitigation is achieved because the restoration is near the affected area. However, in the event that restoration is not feasible at the work site, then restoration will occur at a suitable location elsewhere along the affected drainage. Finally, if suitable sites for restoration are not available elsewhere along the drainage, the District will utilize habitat restoration credits accrued at the Los Carneros Mitigation Bank, described in Section 4.8. This habitat restoration program would be implemented as Mitigation Measure B-1.

Although the functions and values of the habitat temporarily disturbed by maintenance would be replaced through the District's habitat restoration program, the District recognizes that there is a cumulative effect of annual habitat disturbance throughout the County. Hence, the continual disturbance of habitat, although fully replaced, may be considered a cumulatively significant, unmitigable impact (Class I) because the habitats affected are considered valuable (i.e., wetlands and riparian habitat). The magnitude of the impact would be reduced by only removing the minimum amount of vegetation necessary (see Mitigation Measure B-2) and monitoring the maintenance work to ensure limits are observed (see Mitigation Measure B-3).

Facilitate Weed Colonization

Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could facilitate colonization of disturbed areas by non-native invasive weeds. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. The magnitude of this impact is considered small because of the following reasons: (1) most maintenance activities (i.e., brushing and spraying) do not involve physical disturbances of the channel bed and bank, and as such, do not facilitate the colonization and germination of invasive weed seeds; (2) many of the maintenance activities are followed by restoration actions, which would preclude weed establishment; (3) the District routinely removes non-native weeds from the county's drainages as a part of routine maintenance, thereby counteracting any negative impact on weed conditions; and (4) the District Biologist has not observed a pattern of weed invasion after routine brushing, spraying, or desilting over the past nine years. As such, this impact is considered adverse, but not significant (Class III).

Remove Bank Habitat for Hard Bank Protection

On rare occasions, the District must place "hard" bank protection material without native vegetation (i.e., grouted rip-rap) to stabilize a severely eroded bank. Under the updated maintenance program, the use of hard bank protection would only be allowed if no other alternatives using biotechnical methods are available or feasible (see Section 4.3 and Mitigation Measure H-5). This impact would occur very rarely and typically involve a limited reach (e.g., less than 150 feet). Placement of hard bank protection without vegetation on an eroding bank could permanently reduce the amount of existing and future bank riparian vegetation. This impact would be mitigated under the updated restoration program (see Section 4.5) by creating new habitat along the affected reach at a 2:1 ratio, and ensuring that all habitat functions and values are replaced. The habitat restoration program would be implemented as Mitigation Measure B-1. The functions and values of the habitat permanently removed would be replaced through the District's habitat restoration program; as such, the impact would be considered significant and mitigable (Class II).

Access Ramp Habitat Impacts

Construction or maintenance of a new access ramp would remove riparian habitat. This impact would likely be temporary and reversible because most ramps are earthen. However, the habitat would be displaced for the life of the ramp. The District has established most of the access ramps needed for the maintenance program throughout the County, and as such, new access ramps are rarely needed. The loss of bank habitat due to a new access ramp would be fully mitigated by implementing the updated habitat restoration program (see Section 4.5 and Mitigation Measure B-1). In addition, the District will revegetate and stabilize infrequently used ramps under Mitigation Measure H-8. This impact is considered significant, but mitigable (Class II).

Temporary Habitat Disturbance

Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could temporarily remove wetland, riparian and aquatic habitats in work areas. The District does not typically remove mature oak or riparian trees, or disturb native coastal sage scrub or native grasslands to accomplish this work. Temporarily disturbed habitat areas would be restored in accordance with the updated habitat restoration program (see Section 4.5 and Mitigation Measure B-4). This impact is considered significant, but mitigable (Class II).

Displace or Remove Sensitive Plants

Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, channel shaping, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could remove regionally rare plant species. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. This impact is expected to occur infrequently because so few sensitive plants occur in the areas maintained. For example, in the past nine years, the District has only encountered two species at or near a work site that required special procedures: black-flowered figwort (Rodeo-San Pasqual Channel) and Hoffmann's gooseberry (Arroyo Paredon). This impact is considered significant, but mitigable (Class II) because the District will conduct pre-construction surveys for sensitive plants when their occurrence is possible, relocate or re-seed plants that cannot be avoided, and monitor maintenance to ensure avoidance or minimization (see Mitigation Measures B-5 and B-6). In addition, rare plants will be included in restoration projects, as feasible under Mitigation Measure B-1.

5.3.3 Mitigation Measures

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. ***Monitoring and Timing:*** *The District staff will determine the need and scope of compensatory habitat mitigation as part of the development of the Annual Maintenance Plan each spring. Subsequent to the maintenance work, the District Biologist will implement the restoration work, including site preparation and planting. If off-site mitigation is used, the District will acquire habitat credits at the LCMB in accordance with the process approved by regulatory agencies.* ***Reporting:*** *The determination of the habitat mitigation needs and approach will be documented in the Annual Maintenance Plan. The success of habitat restoration will be documented in the District's annual restoration status report.*

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. ***Monitoring and Timing:*** *The District staff will determine the minimal amount of vegetation to be removed as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the vegetation removal occurs as intended under this measure.* ***Reporting:*** *The area of vegetation to* *be removed will be documented in the Annual Maintenance Plan. A summary of the actual work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District Biologist will conduct daily inspections of the maintenance work.* ***Reporting:*** *A summary of the maintenance work based on monitoring by the District staff will be described in the annual post maintenance report.*

B-4 - Restore Temporarily Disturbed Areas. The District shall restore channel banks containing riparian or wetland vegetation that are temporarily disturbed by maintenance or construction activities associated with the following: channel shaping, placement of bank protection, ramp construction, and repair or 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. ***Monitoring and Timing:*** *A description of the proposed maintenance work, and the need for, and scope of, post-maintenance restoration of temporarily disturbed areas will be included in the Annual Maintenance Plan. The District staff will conduct and/or oversee the maintenance work and subsequent restoration.* ***Reporting:*** *A summary of the maintenance and restoration work will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will document occurrences of sensitive species in or near the work areas in the Annual Maintenance Plan. Avoidance and impact minimization measures will also be specified.*

District staff will monitor the avoidance as part of the maintenance work. ***Reporting:*** *A summary of the maintenance work and compliance with the avoidance measures will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District Biologist will monitor maintenance work near sensitive species locations.* ***Reporting:*** *A summary of the maintenance work and associated monitoring will be documented in the annual post maintenance report.*

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. *Monitoring and timing: The district staff will conduct and/or oversee the maintenance work, and ensure that the channel bed treatment is completed consistent with the mitigation measure. A description of the locations of channel bed treatment following desilting will be included in the annual maintenance plan. Reporting: A summary of the maintenance work will be documented in the annual post maintenance report.*

5.4 AQUATIC SPECIES, FISH, AND WILDLIFE

5.4.1 Existing Conditions

5.4.1.1 Aquatic Habitat

General Habitat Conditions

For most drainages in the County, water is only present during the winter and spring due to runoff from rain events. By the fall, flows have decreased significantly, and aquatic habitats are either absent or present in small isolated locations. Drainages with perennial flows include portions of Mission Creek, Carpinteria Creek, lower Arroyo Burro, San Jose Creek, lower Santa Ynez River, Orcutt-Solomon Creek, and Alamo Pintado Creek. In some instances, the perennial flow is due to agricultural tailwater runoff, particularly for North County drainages.

There are a wide variety of aquatic habitats along the drainages maintained by the County. The most common aquatic habitat is a low-flow channel. Other types include in-stream pools formed in the main channel in a scour hole; off-stream pools formed from a previous scouring event; pools created by a road or bridge crossing due to upstream impoundments or downstream scouring; and temporary overflow channels formed during high winter flows. In addition, there are areas with bank seepage that discharge water to the creek channel.

All aquatic habitats are subject to periodic disturbances from winter storm flows. These flows inundate areas that are dry most of the year. They also carry and deposit sediments, seeds, and organic debris (e.g., stems, downed trees). New sandbars are formed and old ones are destroyed. Stands of vegetation are eroded by high flows, and new areas are created where vegetation becomes established by seeds or buried stems. Flows can change the alignment of the low flow channel, the number and location of pools, and the depth of pools. In years with low winter flows, there may be very little change in the aquatic habitats of the river. In such years, wetland vegetation along the margins of the low flow channel and pools will increase. In high flow years, this vegetation will be removed. It will become re-established during the spring and summer due to natural colonization processes.

Hence, the aquatic habitats of a drainage are in a constant state of creation, development, disturbance, and destruction. The diversity of habitat conditions at any one time supports a variety of aquatic invertebrates, aquatic plants, and fish.

Flows in the summer may occur throughout different reaches of a creek, depending on the following factors: (1) the amount of groundwater in the bedrock of the foothills or in the alluvium of the coastal plain that may seep from the banks into the creek; (2) the amount of alluvium underlying the creek - summer flows may remain underground in this alluvium. If the creekbed has a bedrock substrate, summer flows will remain as surface water rather than underflow; and (3) the amount of urban runoff, often called nuisance flows, derived from landscape irrigation and industrial/commercial activities.

Sensitive Aquatic and Fish Species

Unarmored Three-spine Stickleback

The unarmored three-spine stickleback is a state and federal endangered species. This small freshwater fish is usually less than three inches in length and has three sharp spines on the back directly in front of the dorsal fin. The stickleback occurs in weedy permanent pools or backwaters, and in slow moving water along the margins of the stream. It primarily occurs in cool and clear water with mud or sand substrates. It is not found in turbid waters. The small size and shallow-water habits of sticklebacks make them ideal prey for avian predators, such as herons. Breeding usually occurs between April and July. The unarmored three-spine stickleback was once abundant throughout the Los Angeles Basin and is now only known in the upper Santa Clara River system and in San Antonio Creek in northern Santa Barbara County on Vandenberg Air Force Base.

Tidewater Goby

The tidewater goby has been listed by the U.S. Fish and Wildlife Service (USFWS) as an endangered species. It is a small fish, rarely exceeding two inches in length, that inhabits lagoons from San Diego County to Del Norte County, California. They are typically found in the upper ends of lagoons in brackish water, usually in salinities of less than 10 parts per thousand (ppt), but have been found in water to range from 0 to 40 ppt. Tidewater gobies are bottom dwellers and are typically found at depths of less than three feet. In streams they inhabit low-velocity habitats. Tidewater gobies spawn throughout the year but spawning typically peaks in late April through early May.

Spawning takes place in burrows dug 4 to 8 inches deep in coarse sand. Tidewater gobies have been observed to spawn at temperatures of 56 to 70 F. Spawning is reported to take place at fairly low to moderate salinities (5 to 10 ppt). After hatching, the larval tidewater goby are planktonic (suspended in the water column) and are associated with aquatic plants in nearshore habitat. Juvenile tidewater goby are benthic dwellers similar to adults.

Populations of tidewater goby occur in the estuarine lagoons at the mouths of several South Coast creeks, including Mission, Arroyo Burro, and Refugio creeks. Very small and transient populations could occur at the mouths of several other South Coast creeks including Carpinteria, Montecito, Sycamore, Tecolote, Arroyo Paredon, and Winchester Canyon creeks. The tidewater goby is noticeably absent from the mouth of Goleta Slough. Populations are present in the lagoons at the mouths of Gaviota Creek, Santa Ynez River, San Antonio Creek, and the Santa Maria River in the North County.

Arroyo Chub

The arroyo chub is a state Species of Special Concern. It is native to the Los Angeles, San Gabriel, San Luis Rey, Santa Margarita, and Santa Ana river systems, as well as San Juan Creek. The arroyo chub has also been introduced into several rivers and streams in southern California, including the Santa Maria, Cuyama and Santa Ynez rivers (Moyle et al., 1989).

The arroyo chub is a relatively small, chunky minnow, typically less than five inches in length. Arroyo chubs prefer slow moving sections of rivers with a sand or mud substrate, or standing waters in reservoirs. Arroyo chub prefer warm water temperatures and pool habitat, and feed on algae. Arroyo chubs are adapted to survive in widely fluctuating water temperatures (with a maximum of at least 95 F) and dissolved oxygen levels common in their native rivers and streams. In the Santa Ynez and Santa Maria rivers, arroyo chub are abundant in shallow pools and relatively scarce in riffle and run habitats; however, they were not observed in pools inhabited by large predators (bass and sunfish). This species may also be present in lower San Antonio Creek where there is perennial flow. Arroyo chubs have not been recorded in South Coast creeks, although there are anecdotal sightings on San Pedro Creek above Cathedral Oaks Road.

Southern Steelhead Trout

The southern steelhead occurs in coastal streams and creeks of Central and Northern California, and southern Oregon. The populations that occur between Los Angeles County and northern Santa Barbara County constitute the Southern California Evolutionarily Significant Unit (ESU), which has been designated an endangered species by the National Marine Fisheries Service (NMFS). Southern steelhead are known to historically use coastal streams as a migration corridor both during upstream movement to spawning areas in the Santa Ynez Mountains, and downstream movement to the ocean. The largest populations in this ESU are located along Malibu Creek, Santa Clara River, Ventura River, and the Santa Ynez River.

NMFS has designated certain rivers and streams as critical habitat for the southern steelhead, including all accessible streams along the South Coast of Santa Barbara County (i.e., streams without impassable fish barriers) within the historic range of the steelhead. In addition, the following North County drainages and their accessible tributaries were designated as critical habitat: Santa Ynez River to Bradbury Dam, Santa Maria River, Cuyama River to Twitchell Reservoir, and San Antonio Creek.

Steelhead may exhibit anadromy (meaning that they migrate as juveniles from freshwater to the ocean, and then return to fresh water to spawn) or freshwater residency (meaning that they reside their entire life in freshwater). Resident forms are called rainbow trout, while anadromous forms are termed steelhead. Steelhead typically migrate to marine waters after spending one to two years in freshwater, and then spend two or three years in the ocean before returning to streams to spawn. Adult steelhead are stimulated to begin their upstream migration when there are high winter flows in the stream. The fish move upstream during receding flows when the turbidity levels are improving. Steelhead may migrate upstream when there are suitable flows during the period of December through March.

Spawning occurs from December through June. Depending upon water temperature, steelhead eggs may incubate in nesting gravels for one to three months before hatching and emerging as young juveniles. Juveniles rear in freshwater for one to four years before migrating to the ocean as smolts. Migration to the ocean generally occurs from February through May. Coastal lagoons sometimes provide summer rearing habitat for juveniles.

The minimum depth for migration is about eight inches; however, depth is rarely a limiting factor for migration because migration occurs during high flows. Spawning occurs in cool clear well-oxygenated water with suitable depth, temperature, substrate, and velocities. Optimal gravel size ranges from 0.5 to 4 inches in diameter. Spawning generally occurs in water with velocities of two feet per second and depths about 14 inches. Suitable water temperatures for spawning are 39 to 52 degrees Fahrenheit. Juveniles prefer shallow riffle areas for rearing, with a depth of about 8 to 10 inches. Pools provide oversummer refuges for steelhead in ephemeral streams. The range of suitable temperatures for rearing is 45 to 60 degrees F. Gravel beds are preferred rearing habitat.

There are anecdotal observations and documented records of steelhead in many South Coast streams, including Carpinteria, Montecito, Mission, Maria Ygnacio, Atascadero, and San Jose creeks. In some streams, such as Mission Creek, there is documented evidence that steelhead migrate upstream and spawn. There is no evidence of migration and spawning on major South Coast creeks such as San Ysidro, Arroyo Burro, San Pedro, Carneros, Tecolotito/Glen Annie, Winchester, and Ellwood creeks. However, it is possible for transitory, individual adult steelhead to attempt to migrate upstream on all of these creeks. The upstream limit of migration would be dependent upon available flows and the presence of passable impediments and barriers. Suitable spawning habitat on all these creeks is expected to be highly limited, or absent because of low flows in the upper watershed, poor in-stream habitat conditions (e.g. lack of suitable spawning gravels and rearing pools), and land use disturbances (e.g., siltation from avocado orchards).

A steelhead population occurs along the Santa Ynez River, spawning regularly in Salispuedes and El Jaro creeks near Lompoc, and in Hilton Creek below Bradbury Dam. Steelhead have not been recorded, nor are expected, on other maintained tributaries such as Zaca Creek, Alamo Pintado, and Santa Rosa Creek. Spawning does not occur on the mainstem of the Santa Ynez River. Rearing on the mainstem has also not been recorded, and would likely be a rare event restricted to reaches above the Route 154 bridge. Steelhead have not been recorded in San Antonio Creek. Suitable spawning and rearing habitat is absent in the creek upstream of Vandenberg Air Force Base. Barka Slough may represent an upstream passage impediment due to the low gradient braided stream through a densely vegetated wetland. Suitable spawning and rearing habitat are absent from Orcutt-Solomon Creek.

Steelhead historically spawned on the upper Sisquoc River (which is the main tributary to the Santa Maria River) in the National Forest. There have been no modern records of steelhead spawning or rearing in the Sisquoc River, nor any records of steelhead using the Santa Maria River for migration, or the Santa Maria River lagoon for summer rearing. Occasional transitory adult steelhead could migrate up the Santa Maria River on occasion; however, suitable spawning and rearing habitat are absent from the Santa Maria River itself.

Western Pond Turtle

The southwestern pond turtle is a state Species of Special Concern that occurs from roughly Monterey Bay south through the Coast Ranges to northern Baja California Norte. Southwestern pond turtles live primarily in freshwater rivers, streams, lakes, ponds, vernal pools, and seasonal wetlands, but also seem to have some tolerance for slightly brackish conditions. They may live in intermittent streams where permanent pools exist. The species requires slowly moving water and appropriate basking sites such as logs, banks, or other suitable areas above water level. Hatchlings are a particularly vulnerable stage, and require shallow water (less than 30 cm) and abundant emergent vegetation. At lower elevations in southern California, the southwestern pond turtle may be active throughout the year, but in colder locations it may undergo periods of hibernation, either under water or in burrows on land. Food consists primarily of small to moderately-sized invertebrates, especially insects and crayfish, but vegetation, small fish, and carrion may also be consumed.

Little is known about reproduction, but mating probably occurs between May and September and eggs are laid from May through August. Females appear to become reproductively active at about eight years of age. Because females mature relatively late, and bullfrogs and largemouth bass are predators on hatchling turtles, populations may become heavily biased toward older individuals. In the relatively mild climate of central and southern California, pond turtles may spend extended periods on land away from water.

Habitat for the southwestern pond turtle occurs in selected portions of South Coast creeks and debris basins, primarily in the upper watersheds where deep pools and boulders are present. The District's only confirmed presence of this species along maintained drainages is on lower Atascadero Creek, Arroyo Paredon, upper Sycamore Creek, and at the confluence of Orcutt-Solomon Creek and the Santa Maria River. The pond turtle occurs along the Santa Ynez River in the long pool below Bradbury Dam, between Refugio and Alisal Road near Solvang, at several locations west of Buellton, and in Salsipuedes Creek southeast of Lompoc. Potential habitat is generally absent from the Santa Maria River, San Antonio Creek, and Harris Canyon Creek.

Arroyo Southwestern Toad

The arroyo southwestern toad is listed as an endangered species by the USFWS. Generally, the known populations exist in the upper portions of major southern California coastal watersheds, including the Sisquoc River, Sespe Creek, Piru Creek, and the upper Santa Ynez River watershed. Arroyo southwestern toads are typically found in upper streams where they breed in pools generally less than one foot deep with minimal current and a gently sloping shoreline, and where bordering vegetation is absent or set back from the margins of the pool. Adults use nearby sandy terraces for burrowing and may forage in live oak flats along the river floodplain. The only known locations of this species in the County are along the Santa Ynez River above Gibraltar Reservoir, and along the Sisquoc River. Suitable habitat is not present on the South Coast creeks.

California Red-legged Frog

The California red-legged frog is listed as an endangered species by the USFWS. It historically occurred in coastal mountains from Marin County south to northern Baja California, and along the floor and foothills of the Central Valley from about Shasta County south to Kern County. Currently, this subspecies occurs primarily in the coastal portions of its historic range.

California red-legged frogs are confined strictly to aquatic habitats, such as creeks, streams, and ponds, and occur primarily in areas having pools two to three feet deep with dense emergent or shoreline vegetation. Although they may move between breeding pools and foraging areas, they rarely leave the dense cover of the riparian corridor. It should be noted that the District has observed red-legged frogs in the North County inhabiting perennial drainages fed by agricultural tailwater with little vegetation, traversing cattle pastures.

California red-legged frogs breed from November to March when eggs are attached to emergent vegetation. Eggs hatch within six to fourteen days, and metamorphosis generally occurs between July and September. Red-legged frogs are omnivorous and will eat other animals including other amphibians and small mammals. Major predators include introduced fish, bullfrogs, and native garter snakes.

The red-legged frog occurs along portions of the Santa Ynez River and a number of tributaries, including Zaca and Salsipuedes Creek. A population occurs on lower San Antonio Creek on VAFB; there are no records on San Antonio Creek upstream of Barka Slough. Scattered populations of the red-legged frog occur along the Santa Maria River, primarily associated with agricultural tailwater discharges between Highway 101 bridge and the lagoon. Similar scattered populations occur in perennial reaches of Orcutt Solomon Creek, often in areas with little riparian vegetation cover. Red-legged frogs have also been observed in agricultural drainage channels in the Santa Maria Valley, including Unit Two Ditch, Green Canyon Ditch, and Upper Green Canyon Ditch (among others). A small population is also present on lower Orcutt-Solomon Creek.

Populations of red-legged frog have not been recorded on South Coast streams or in debris basins, despite many efforts by the District to locate them over the past nine years. It is assumed that very small and isolated populations may be present, but are likely to be restricted to upper watersheds above the coastal plain and the maintained reaches. There are only two recent records of a red-legged frog population on the South Coast - at the mouth of Tecolote Creek and in a sediment basin along Pila Creek at Tajiguas Landfill. There are historic records from Cold Springs, Hot Springs, Tecolotito, San Antonio, and Ellwood Canyon creeks.

California Tiger Salamander

On January 19, 2000, the USFWS issued an emergency listing of the populations in Santa Barbara County as an endangered species. The species in the County represents a Distinct Vertebrate Population Segment of the tiger salamander that occurs throughout the state. Less than 20 breeding sites are present in the County, many of which are currently threatened due to conversion of rangeland to vineyards. The populations in Santa Barbara County are restricted to the Santa Maria, Los Alamos, and Santa Rita valleys. None of the known breeding sites are located directly adjacent to a maintained creek or drainage. The species does not rely on creeks or riparian habitat for any of its life cycle.

The California tiger salamander has very strict habitat requirements that must be met for it to complete its life cycle. Historically, it probably bred in vernal pools and other temporary ponds, although intermittent streams may have occasionally been used. Today, many of the known populations breed in stock ponds associated with cattle operations. To escape the heat of the summer, it lives much of the year in underground burrows excavated by ground squirrels and pocket gophers.

Although the species lives much of the year in underground burrows near the breeding sites, adults are known to migrate more than 1.2 miles to the breeding sites. Breeding takes place following the first significant winter rains, at which time adults migrate from their protective burrows to breeding pools and ponds. Adults may feed actively at night prior to and following the active breeding season, and on mild days some daily activity may be noted. Eggs hatch within a few weeks and the larvae develop over a period of weeks as the temporary pools slowly dry. Typically, the larvae transform to become juveniles in late spring or early summer. Juveniles usually migrate to the summer burrow system with or shortly after the adults and, like the adults, often emerge on suitable nights to feed. Individuals, or the entire population, may forego reproduction for one or more years if conditions are not suitable.

Western Spadefoot Toad

This species occurs in annual grasslands and oak savannahs of cismontane California. Adults use vernal ponds and cattle ponds for breeding in the spring and early summer. The spadefoot toad lives much of the year in underground burrows excavated by ground squirrels and pocket gophers. Breeding takes place in the winter and spring when adults migrate from their protective burrows to breeding pools and ponds. There are records of the spadefoot toad in rangelands with cattle ponds throughout the Santa Maria, Los Alamos, and Santa Rita valleys where it has similar habitat requirements as the tiger salamander. There are no records on the South Coast where suitable habitat is mostly absent. None of the known breeding sites are located directly adjacent to a maintained creek or drainage. The species does not rely on creeks or riparian habitat for any of its life cycle.

Two-Striped Garter Snake

The two-striped garter snake is a State Species of Special Concern. It occurs from Monterey County south through the coast ranges to northern Baja California. It is a highly aquatic species, and was formerly considered a subspecies of the western aquatic garter snake. The two-striped garter snake is typically found near slowly moving creeks and streams, ponds, and coastal lagoons where water is permanent and tadpoles, frogs, and small fish are present as a prey base. These snakes are often found in areas of barren soil or short grass near the aquatic sites, and individuals may use large boulders for basking. Snakes may be active during the day or night. Little is known about the life history of the two-striped garter snake. Females give birth from mid to late-summer and by October individuals may move to adjacent upland areas where they apparently hibernate in rodent burrows or under logs or boulders.

Suitable habitat for the species occurs along portions of the Santa Ynez River, San Antonio Creek, Orcutt-Solomon Creek, and the Santa Maria River. This species appears to be absent from South Coast drainages and basins.

Sensitive Invertebrate Species

Monarch Butterfly

The monarch butterfly is a regionally rare species whose occurrence in the County is restricted to eucalyptus groves in both the North County and on the South Coast. They migrate to the coast each fall, and aggregate in large numbers in eucalyptus groves near the coast during the winter (October through February). During this time, they enter a dormant phase in which they aggregate for protection from the weather and predators. They spend most of the time resting in the trees. They feed rarely, living off fat reserves. They collect nectar from flowers on eucalyptus, citrus, and other winter flowering trees. They may travel to grassy areas in the morning to collect dew. There are over 100 known roosting sites in the County which have been described and mapped by Meade (1999). Groves are present near the following maintained creeks: Winchester Canyon, Ellwood Creek, Glen Annie Creek, Carneros Creek, Maria Ygnacio Creek, Arroyo Burro, and Carpinteria Creek.

5.4.1.2 Wildlife Habitat and Species

General Habitat Conditions and Common Species

Riparian and wetland habitats along creeks and rivers support a great diversity of wildlife species. Streams and pools provide habitat for aquatic and semi-aquatic species such as Pacific chorus frog, western toad, Pacific treefrog, and the introduced bullfrog. Common reptiles in riparian habitats include the ensatina, western fence lizard, common kingsnake, gopher snake, and common garter snake. Drainages with riparian cover are also used by small mammals for cover, movement corridors, and foraging. Mature oak-riparian woodland with an understory and dense litter layer provides habitat on the woodland floor for the arboreal salamander and black-bellied slender salamander. Common small mammals include the Virginia opossum, dusky-footed woodrat, striped skunk, raccoon, and coyote.

TABLE 5-9
LISTED FISH AND WILDLIFE SPECIES THAT COULD OCCUR IN OR NEAR MAINTENANCE AREAS*

Common Name	Protection Status		Confirmed (C) or Potential (P) Occurrence in or near Creeks, Ditches, and/or Basins			
	State	Federal	South Coast	North County		
				Santa Ynez Valley	Los Alamos Valley	Santa Maria Valley
FISH						
Tidewater goby *(estuaries at the mouths of certain drainages)*		E	C	C	C	C
Southern steelhead trout (Southern ESU)		E	C	C		P
Unarmored three-spine stickleback (San Antonio Creek on VAFB only)	E	E			C	
AMPHIBIANS AND REPTILES						
California tiger salamander		E		C	C	C
Arroyo southwestern toad		E				P?
California red-legged frog		T	P	C	P	C
BIRDS						
Southwestern willow flycatcher		E	C	C	P	P
Least Bell's vireo	E	E	P	P		

*Non-exempt creeks and debris basins only. Excludes all tidally-influenced areas, except for the tidewater goby.
E = Endangered. T= Threatened.

TABLE 5-10
REGIONALLY RARE FISH AND WILDLIFE SPECIES THAT COULD OCCUR IN OR NEAR MAINTENANCE AREAS*

Common Name	Protection Status	Typical Habitat	Confirmed (C) or Potential (P) Occurrence in or near Creeks, Ditches, and/or Basins			
			South Coast	North County		
				Santa Ynez Valley	Los Alamos Valley	Santa Maria Valley
FISH						
Arroyo chub	CSC	Perennial streams	C	P	P	
INSECTS						
Monarch butterfly	LC	Eucalyptus groves	C			
AMPHIBIANS AND REPTILES						
Western spadefoot toad	CSC	Grasslands with nearby water		C	C	C
Silvery legless lizard	CSC	Leaf litter in woodlands and scrub	P	P	P	C
San Diego horned lizard	CSC	Upland and riverine scrub	P	C	C	C
Southwestern pond turtle	CSC	Permanent pools along creeks	C	C	P	P
Two-striped garter snake	CSC	Aquatic habitats		C	P	P
BIRDS						
Cooper's hawk	CSC	Winter visitor in riparian woodlands	C	C	C	C
Sharp-shinned hawk	CSC	Winter visitor; oak & riparian woodlands	C	C	C	C
White-tailed kite	Protected	Fall/winter visitor; uncommon breeder; oak woodlands, orchards, grasslands	C	C	P	C
Long-eared owl	CSC	Resident and winter visitor; riparian woodlands	C	C	P	P
Tri-colored blackbird	CSC	Resident; freshwater marsh	P	C	P	C

Common Name	Protection Status	Typical Habitat	Confirmed (C) or Potential (P) Occurrence in or near Creeks, Ditches, and/or Basins			
			South Coast	North County		
				Santa Ynez Valley	Los Alamos Valley	Santa Maria Valley
Yellow warbler	CSC	Spring/fall transient; uncommon breeder; riparian woodland	C	C	C	P
Yellow breasted chat	CSC	Rare summer breeder in riparian woodlands	C	C	C	P
Purple martin	CSC	Rare transient; riparian woodland	C	C	P	P
Warbling vireo	LC	Summer breeder in riparian woodlands	C	C	C	C
Wilson's warbler	LC	Summer breeder in riparian woodlands	P	C	C	C
Swainson's thrush	LC	Summer breeder in riparian woodlands	C	C	C	C
Blue grosbeak	LC	Summer breeder in riparian woodlands	P	C	C	C
MAMMALS						
Townsend's big-eared bat	CSC	Various structures, caves, bridges, and tree cavities		C	P	P
Pallid bat	CSC			C	P	P
Spotted bat	CSC			C	P	P

*Non-exempt creeks and basins only. Excludes all tidally-influenced areas.
CSC = California Species of Concern (Dept. of Fish and Game); LC = species of local concern.

A tremendous diversity of birds use riparian habitat along creeks and drainages. The most common species observed by the District Biologist along maintained drainages during the spring surveys include the following species: black phoebe, house finch, song sparrow, scrub jay, plain titmouse, yellow warbler, red-tailed hawk, giant horned owl, common yellowthroat, turkey vulture, house sparrow, cliff swallow, California quail, California towhee, spotted towhee, Anna's hummingbird, mourning dove, acorn woodpecker, and bush tit. Other species common to riparian habitats include Cooper's hawk, red-shouldered hawk, yellow-rumped warbler, northern oriole, lesser goldfinch, hermit thrush, yellow warbler, orange-crowned warbler, back-headed grosbeak, and rufous-sided towhee. Riparian-oak woodland with a dense understory is used by a variety of birds such as the barn owl, Anna's hummingbird, Nuttal's woodpecker, northern flicker, ash-throated flycatcher, scrub jay, plain titmouse, bushtit, western bluebird, Hutton's vireo, lark sparrow, white-crowned sparrow, California quail, mourning dove, and dark-eyed junco.

Sensitive Wildlife Species

Southwestern Willow Flycatcher

The southwestern willow flycatcher (*Empidonax traillii extimus*) is a state and federal endangered species. It is a small bird that occurs in riparian habitats along rivers and streams where there are dense growths of willows, coyote brush, tamarisk, and Russian olive. The southwestern willow flycatcher is one of five subspecies of the willow flycatcher currently recognized. The breeding range of the southwestern willow flycatcher includes southern California, southern Nevada, southern Utah, Arizona, New Mexico, and western Texas.

The southwestern willow flycatcher nests in thickets of trees and shrubs approximately (10-25 feet) or more in height, with dense foliage from approximately 0 - 15 feet) aboveground, and often a high canopy cover percentage. Nest site vegetation is usually dense and structurally homogeneous. Nesting willow flycatchers virtually always nest near surface water or saturated soil. At some nest sites, surface water may be present early in the breeding season but only damp soil is present by late June or early July. Habitat patches from 1 to 3 acres can support one or two nesting pairs. The nest is constructed in a fork or on a horizontal branch, approximately 3-15 feet) above ground in a medium-sized bush or small tree, with dense vegetation above and around the nest. The southwestern willow flycatcher builds nests and lays eggs in late May and early June and fledges young in early to mid-July. The southwestern willow flycatcher is an insectivore. It forages within and above dense riparian vegetation, taking insects on the wing or gleaning them from foliage. It also forages in areas adjacent to nest sites, which may be more open. The southwestern willow flycatcher most likely winters in Mexico, Central America, and perhaps northern South America.

There are two known breeding populations in the County, both along the Santa Ynez River. The largest occurs about a mile south of Avenue of the Flags bridge in the City of Buellton, extending to Santa Rosa Creek. That population consists of 15-20 breeding pairs. The second population occurs downstream of Floradale Bridge, primarily near the 13th Street Bridge and VAFB waterfowl ponds near the river. Suitable habitat occurs in patches between Buellton and Lompoc, but breeding birds were not detected during field surveys in 2000. Migrants have been sighted on the lower Santa Maria, but there are no records of breeding.

There are no modern records of willow flycatchers breeding on the South Coast. In general, habitat conditions along the narrow riparian corridors of the South Coast, particularly through developed areas, are not suitable. However, individual birds occur as rare spring and uncommon fall migrants along the South Coast. They are sighted occasionally along Atascadero and San Jose creeks.

Least Bell's Vireo

The least Bell's vireo is a state and federally endangered species that is a summer breeder in riparian woodlands along major drainages of southern California. Its historic range included interior northern California, Sacramento, and San Joaquin Valleys, Sierra Nevada foothills, and the Coastal Ranges from central California to upper Baja. Its current distribution extends from several isolated localities along the Salinas River in Monterey County, a small population along the upper Santa Ynez River in Santa Barbara County, and numerous populations in Riverside, Orange, and San Diego counties.

The vireo is an obligate riparian breeder, using various riparian habitats such as willow and mulefat scrub and willow-cottonwood forest. It generally prefers early successional habitat that provides dense cover for nesting and structurally complex canopy for foraging. Least Bell's vireos tend to nest in willow-dominated habitats, but may occur in tall canopy oak –riparian forests if there is a dense understory of riparian shrubs. The species often utilize adjacent upland habitats for foraging.

The least Bell's vireo typically arrives at nesting sites along southern California streams in mid-March through mid-April. Both parents incubate the eggs, which hatch in approximately 14 days. Fledging requires about 10 to 12 days. Nesting ends by early July. Vireos may attempt several nests in a single season. They leave for their wintering grounds in Baja in late July and early August.

There is only one breeding population of least Bell's vireo in the County along the upper Santa Ynez River upstream of Gibraltar Reservoir in the Mono Creek/Agua Caliente area. This population has been censused nearly every year since 1979, and appears healthy and stable. Away from this area, nesting has not been recorded since the 1950s. However, there are periodic reports of migrants along the lower Santa Ynez and Santa Maria rivers. Sightings of migrating vireos on the South Coast are very rare.

Other Species

There are many other bird species that could occur at or near maintained drainages and basins that are considered locally rare or uncommon, and as Species of Special Concern by the CDFG. They are listed in Table 5-3. These species include resident, migrant, and seasonal raptors that use riparian woodlands (e.g., sharp-shinned hawk); seasonal riparian breeding birds (e.g., yellow warbler); and a wetland associated resident (i.e., tri-colored blackbird).

5.4.2 Potential Impacts

5.4.2.1 Significant Impact Thresholds

The following thresholds are used to identify significant biological impacts. These thresholds are derived from the Environmental Checklist form in the most recent CEQA Guidelines.

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or reduce the number or restrict the range of a rare or endangered animal.

5.4.2.2 Previously Identified Impacts

The following impacts related to fish and wildlife species and sensitive species were identified in the 1991 Final EIR, where they were categorized as "Terrestrial Zoology" and "Aquatic Zoology."

Previously Identified Class I Impacts

"Terrestrial Zoology"

1. The reduction in habitat heterogeneity of riparian woodlands caused by brushing, with a concomitant decline in the diversity and abundance of wildlife, is considered a significant impact. *This impact is addressed below in Section 5.4.2.3.*

2. Loss of developing freshwater marsh and other types of stream habitat by desilting causes a significant impact through decline in wildlife. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetland, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

3. Shaping will eliminate riparian and in-stream aquatic vegetation causing a significant impact from the resultant decline in the diversity and abundance of wildlife. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.3.2.*

"Aquatic Zoology"

1. Brushing by bulldozer results in reduced channel and bank stability and substantially increased erosion. The uprooted vegetation, removal of vegetation from stream channels, unstable sediment banks, disrupted soils, killed organisms, loss of structural elements and channel homogenization, increased erosion and increased sediment transport causing higher sediment deposition blanketing watercourse bottoms caused by bulldozer brushing are considered significant unavoidable impacts. *The potential for increased bank and channel erosion, and the resultant increase in sedimentation, is addressed in Section 5.1.3 (Hydrology and Hydraulics). The impact of brushing on fish and wildlife is addressed below in Section 5.4.2.3.*

2. Use of bulldozers for vegetation removal causes significant unavoidable impacts by altering pools which are necessary for the survival of many aquatic species. Resultant wide, shallow

low flows are susceptible to drying, excessive water heating and species loss. *This impact is addressed below in Section 5.4.2.3.*

3. Use of heavy equipment in desilting causes unavoidable significant impacts by loss of channel, and in some cases, bank vegetation resulting in loss of shading, high temperatures, low oxygen levels, decreased food inputs, increased sediment inputs, and changes in flow regimes. All of these have severe effects on aquatic biota. *This impact is addressed below in Section 5.4.2.3.*

4. Use of heavy equipment in desilting causes unavoidable significant impacts by severe disruption of channel, and in some cases, substrates. Removal of most boulders and some bedrock from channel eliminates populations of fish and certain other organisms. *This impact is addressed below in Section 5.4.2.3.*

5. Desilting results in shaping channels, thereby causing an unavoidable significant impact to aquatic life from loss of pools and substitution of wide shallow low water flows susceptible to drying and excessive heating. *This impact is addressed below in Section 5.4.2.3.*

6. Shaping by heavy equipment causes unavoidable significant impacts by loss of channel and bank vegetation resulting in loss of shading, high water temperatures, low oxygen levels, decreased habitat hetereogeneity, decreased food inputs, increased sediment input, and changes in flow regimes. All of these severely affect aquatic biota. *This impact is addressed below in Section 5.4.2.3.*

7. Shaping by heavy equipment causes unavoidable significant impacts by severe disruption of channel and bank substrates, resulting in the killing of fish and benthic organisms. *This impact is addressed below in Section 5.4.2.3.*

8. Shaping by heavy equipment causes unavoidable significant impacts by destruction of geomorphic characters including pools needed for the survival of many species. *This impact is addressed below in Section 5.4.2.3.*

Previously Identified Class II Impacts

"Terrestrial Zoology (continued from above)"

4. Loss of in-stream and stream bank understory and ground cover vegetation resulting in a decline in associated wildlife caused by brushing is considered a significant impact. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3*

5. Removal of debris from deep plunge pools by brushing causes a significant impact to habitat for red-legged frogs and western pond turtles. *This impact is addressed below in Section 5.4.2.3.*

6. Use of bulldozers to brush along perennial, intermittent, or ephemeral streams or rivers could significantly impact habitat for sensitive amphibians and reptiles. *This impact is addressed below in Section 5.4.2.3.*

7. Brushing to remove dead snags and/or large mature riparian trees could cause significant impacts to cavity-nesting birds, sensitive riparian dependent nesting raptors, and bats. *This impact is addressed below in Section 5.4.2.3.*

8. Loss of freshwater marsh and instream emergent vegetation and its associated wildlife caused by spraying is considered a significant impact. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

9. The drift of spray on the non-target plants along stream banks has the potentially significant impact of reducing riparian woodland habitat, thereby impacting bats and especially sensitive riparian dependent birds and their habitat. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

10. Removal of in-stream vegetation and accumulated silt and debris from natural stream channels causes significant impacts by eliminating or damaging habitat of red-legged frog, western pond turtle, common hoorhen, and tricolored blackbirds. May lead to extirpation of localized populations along South Coast streams. *This impact is addressed below in Section 5.4.2.3.*

12. Desilting of tidally influenced siltation basins at the Goleta Slough and Carpinteria Marsh could cause a significant impact because of the abandonment of nests by Belding's savannah sparrow and/or light footed clapper rail. *This impact is no longer applicable, as the routine maintenance program does not include tidally influenced areas.*

13. Stacking of spoils on dikes, marsh, or upland habitats will destroy some native habitat and its resident wildlife. *This impact is not considered applicable, as the District only stockpiles temporary desilting spoils in disturbed areas or farm fields, not in areas with native habitat.*

14. Shaping could cause significant impacts in the quality of riparian habitats and reduction in the species dependent on such habitat. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

15. Removal of bank vegetation by shaping could cause significant impacts because of the resultant reduction in the relative abundance and species richness of the terrestrial and aquatic wildlife biota inhabiting stream and river banks. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

16. Loss of deep pool and riffle habitat by shaping could cause significant impacts because of the resultant extirpation or decline in localized populations of red-legged frog and western pond turtles. *This impact is addressed below in Section 5.4.2.3.*

17. Clearing access for heavy equipment needed to repair a flood control device could cause significant impacts for in-stream vegetation and its associated wildlife similar to those described for brushing, desilting, and shaping. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

18. Maintenance of clear access roads into the Santa Maria and Santa Ynez rivers adjacent to the towns of Buellton, Lompoc, and Santa Maria cause significant impact to the diversity and abundance of wildlife in these waterways by providing ORV access. *This impact is no longer considered applicable, as the District has not observed any increase in ORV use of these rivers due to use of the District's access ramps. In general, these ramps are difficult to find because they are used infrequently. In addition, they occur within private property, where trespassing is prohibited.*

"Aquatic Zoology (continued from above)"

9. Loss of shading by vegetation removal is considered a potentially significant impact because of light reaching the stream bottom to encourage weed and algae growth resultant decline in sensitive species, loss of fish and invertebrates through increased water temperatures, low oxygen levels, and streams dry out. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

10. Loss of inputs to streams from bank vegetation including loss of terrestrial invertebrates as a food source for fish is considered potentially significant. *This impact is addressed below in Section 5.4.2.3.*

11. Loss of channel vegetation results in potentially significant impacts from loss of aquatic species, decreased habitat heterogeneity and species diversity, channel erosion because of lost soil stabilizing roots, and increased flow means that sediments and chemical will more readily be carried to downstream depositional zones. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

12. The leakage or spillage of fuel or oil associated with chain saws, bulldozers, and other maintenance equipment can cause potentially significant impacts because of direct toxic effects to aquatic biota. *Water quality impacts are addressed in Section 5.2.3 (Water Quality). The indirect impact on fish and wildlife species is addressed below in Section 5.4.2.3.*

13. Herbicide application by spraying will kill most aquatic vegetation. This loss of habitat, in addition to any direct loss of aquatic organisms, is considered a potentially significant impact. *Water quality impacts are addressed in Section 5.2.3 (Water Quality). The indirect impact on fish and wildlife species is addressed below in Section 5.4.2.3.*

14. Herbicide application by spraying can cause potentially significant impacts by loss of shading, habitats, and riparian inputs associated with the loss of riparian vegetation. Loss of riparian vegetation causes increased light reaching stream bottoms, decreased food inputs, increased water temperatures, lower dissolved oxygen, and changes in flow regime. These effects in turn may destroy many invertebrates and some fish. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

15. Spraying causes loss of vegetation resulting in increased erosion and increased sediment input. The destabilization of channels and banks because of vegetation loss is considered a potentially significant impact. *The loss of wetland and riparian habitat is addressed in Section 5.3.2*

(Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.

16. Removal of vegetation and soil destabilization resulting from creation and maintenance of roads needed for truck spraying cause potentially significant impacts including loss of shading, increased water temperatures, lowered oxygen levels, increased erosion and associated sediment inputs. Some aquatic species may be lost. *The District does not remove bank vegetation to provide access for truck spraying.*

17. Accidents or spills of herbicides or fuels could cause significant damage to vegetation and toxic damage to aquatic biota. *Water quality impacts are addressed in Section 5.2.2 (Water Quality). The indirect impact on fish and wildlife species is addressed below in Section 5.4.2.3.*

18. The leakage or spillage of oil or fuel associated with heavy equipment can cause significant impacts because of direct toxic effects to aquatic biota. *Water quality impacts are addressed in Section 5.2.2 (Water Quality). The indirect impact on fish and wildlife species is addressed below in Section 5.4.2.3.*

19. Desilting causes significant impacts by creating sediment input from spoil piles placed on banks. Sediment increase results in reduction of all but a few hardy species with resulting decrease in species diversity. *Water quality impacts are addressed in Section 5.2.2 (Water Quality). The indirect impact on fish and wildlife species due to increased sedimentation, in general, is addressed below in Section 5.4.2.3.*

20. The leakage or spillage of fuel or oil associated with heavy equipment can cause significant impacts from direct toxic effects to aquatic biota. *Water quality impacts are addressed in Section 5.2.2 (Water Quality). The indirect impact on fish and wildlife species is addressed below in Section 5.4.2.3.*

21. The creation and maintenance of access road causes significant impacts by removal of vegetation and soil destabilization. *The loss of wetland and riparian habitat due to access ramp construction is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

22. Herbicide applied to access roadways may wash or drift into waterways resulting in destruction of aquatic vegetation. This is considered a significant impact. *Impacts of herbicide application on non-targeted plants are addressed in Section 5.3.2 (Wetland, Riparian Habitat, and Rare Plants).*

Previously Identified Class III Impacts

"Terrestrial Zoology (continued from above)"

19. Brushing eliminates early successional stages of riparian vegetation, thus depriving wildlife of forage and protective cover and increasing predation. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

20. Removal of fallen trees and logs from stream channels eliminates habitat for salamanders, lizards, shrews, and mice, thus reducing diversity and abundance of these species. *This impact is addressed below in Section 5.4.2.3.*

21. Noise disturbance from operation of equipment could cause sensitive wildlife to abandon nest and temporary use of the site. *This impact is addressed below in Section 5.4.2.3.*

22. Loss of in-stream and freshwater marsh vegetation will result in higher flow velocities, which could impact amphibian larvae. *This impact is addressed below in Section 5.4.2.3.*

23. Desilting of sediment basins by dragline and the use of Gradalls™ to desilt ditches can result in loss of bank vegetation and its associated wildlife, while promoting increased erosion, weed growth, and possible increases in California ground squirrel populations. *This impact is addressed below in Section 5.4.2.3.*

24. Removal of silt and benthic invertebrate fauna will temporarily reduce food available for herons, ducks, and grebes. *This impact is addressed below in Section 5.4.2.3.*

25. Removal of vegetation from debris basins could reduce wildlife food, shelter, or nesting. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below in Section 5.4.2.3.*

"Aquatic Zoology"

23. Hand brushing results in increased disturbance and erosion leading to minor losses of channel and bank stability. *The loss of wetland and riparian habitat is addressed in Section 5.3.2 (Wetlands, Riparian Habitat, and Rare Plants). The impact on the associated fish and wildlife species is addressed below.*

5.4.2.3 Potential Impacts

Displace Wildlife due to Vegetation Removal

As described in Section 5.3.2, the removal and/or thinning of vegetation from the channel bottom due to brushing, herbicide application, desilting, and channel shaping cause a temporary reduction in vigor and/or cover of successional riparian habitats and emergent wetlands. The impact to habitat is both temporary and reversible because the affected wetland and riparian habitats in the channel bottom are adapted to similar periodic disturbance from flooding. The most common habitats affected are early successional riparian scrub, riparian herbaceous, and ruderal vegetation. High value wetlands (e.g., freshwater marsh) and riparian habitats (e.g., mature willow cottonwood woodland) are not typically removed from the channel bottoms. The habitat area affected at any given maintenance site typically ranges from 1,000 square feet to 5,000 square feet. In contrast, the bottoms of debris basins often contain high value wetland and riparian habitats due to the accumulation of sediments and generally moist conditions.

The temporary reduction in the amount and quality of habitat in the bottom of channels and debris basins due to maintenance activities directly affects wildlife species by displacing them and substantially altering their habitat. The long term functions and values of the habitat temporarily disturbed by channel maintenance would be replaced through the District's updated habitat restoration program (Mitigation Measure B-1), and thereby provide replacement habitat for the displaced wildlife. In contrast, the periodic removal of vegetation from debris basins is essentially self-mitigating because the District allows the basins to be recolonized by wetland and riparian habitats after maintenance.

Nevertheless, for both channel and debris basin maintenance, there would be a temporal impact to wildlife that cannot be fully mitigated. This impact, when considered for all affected drainages and basins on an ongoing basis, is considered a significant, unmitigable cumulative impact (Class I). The magnitude of the impact would be reduced by only removing the minimum amount of vegetation necessary (see Mitigation Measure B-2) and monitoring the maintenance work to ensure limits are observed (see Mitigation Measure B-3).

Displace Wildlife for Hard Bank Protection

The District may occasionally place "hard" bank protection (i.e., grouted rip-rap) to stabilize a severely eroded bank as described in Section 2.3.4. Under the updated maintenance program, the use of hard bank protection would only be allowed if no other alternatives using biotechnical methods is available or feasible (see Section 4.3 and Mitigation Measure H-5). This impact would occur very rarely and typically involve a limited reach (e.g., less than 150 feet). Placement of hard bank protection without vegetation on an eroding bank could permanently reduce the amount of existing and future bank riparian vegetation, which in turn, would displace resident wildlife. This impact would be mitigated over time under the updated restoration program (see Section 4.5 and Mitigation Measure B-1) by creating new habitat. Hence, this impact is considered significant, but mitigable (Class II). To encourage environmentally sound erosion control practices by private landowners, the District will implement Mitigation Measure H-9.

Adverse Effects of Maintenance on Aquatic Habitat

Channel shaping, bank stabilization by placing fill or grading banks, sandbar removal, excessive removal and/or thinning of in-channel vegetation, and pilot channel construction could result in the following impacts to aquatic habitats that support fish and other aquatic organisms: (1) directly remove aquatic habitats, including pools and runs; (2) reduce habitat heterogeneity and the amount and diversity of microhabitats in the channel bottom that support aquatic species; and (3) directly affect benthic and in-sediment food sources (e.g., larvae and midges). In addition, fish and aquatic organisms could be directly displaced. These activities could also adversely affect fish and aquatic invertebrates by reducing vegetation cover, pools and gravel beds, organic input from overhanging vegetation supporting aquatic productivity, and instream cover and debris providing micro-habitat.

These impacts are temporary and reversible because in the absence of continual maintenance, in-channel aquatic habitats will be re-created through natural fluvial processes.

Nevertheless, for both channel and debris basin maintenance, there would be a temporal impact to aquatic species that cannot be fully mitigated. The impacts of maintenance on aquatic habitats are not likely to be significant at individual sites because most of the maintenance work occurs in dry conditions when aquatic habitat is absent. However, the impact is considered significant and unmitigable (Class I) due to the potential for cumulative effects when taking into consideration all affected drainages and basins on an ongoing basis. The magnitude of the impact would be reduced by only affecting the minimum amount of channel bed necessary (see Mitigation Measure B-2).

Increased Water Temperatures Due to Vegetation Removal

As described in Section 5.2.2, brushing and spraying cause the removal of vegetation in the channel bed which could increase the temperature of water present due to greater solar radiation. However, the analyses indicated that this effect would be minor because: (1) water is generally not present under the vegetation being removed; and (2) the vegetation removed from maintained creeks does not generally create a dense canopy with a shading effect. The most effective shading of pools in drainages occurs from large canopy trees on the banks. The District does not remove bank vegetation as part of routine brushing and spraying; hence, the primary factor regulating water temperatures is not affected by maintenance. Based on this information, the effect of vegetation removal from the channel bed is not likely to cause a significant impact on the quality of aquatic habitats. Hence, this impact is considered adverse, but not significant (Class III).

Effects of Sediments and Turbidity on Aquatic Organisms

As described in Section 5.2.2, several maintenance activities disturb the channel bed that in turn could increase channel erosion and downstream sedimentation, including brushing, mowing, and spraying channel bed vegetation; channel shaping, desilting, bank stabilization by placing fill or grading banks, pilot channel construction, equipment movement on the channel bed, and pilot channel clearing in basins. The analyses in Section 5.2.2 indicated that the temporary increase in sediment and turbidity levels associated with certain maintenance activities would not be significant because it would be a minor contribution to the naturally high concentrations of total suspended sediments and turbidity during the winter runoff.

Impacts to fish and aquatic organisms from temporarily increased sediment and turbidity levels would also be considered adverse, but not significant (Class III) for the same reason. In addition, fish and aquatic organisms are adapted to temporary increases in suspended sediments and turbidity during winter runoff. Maintenance activities would not cause higher suspended sediment and turbidity levels after storm flows have receded. The District will minimize sedimentation during routine maintenance activities by implementing Mitigation Measure W-1 in which the area disturbed is minimized to the extent feasible, and channel bed areas susceptible to erosion after maintenance would be stabilized by revegetation.

Displace Wildlife for New Access Ramps

As described in Section 5.3.2, the District may occasionally need to construct a new access ramp, which would remove riparian habitat. This impact would displace wildlife; however, the area involved would be very minor, and use of the access ramp would be very infrequent. Furthermore, the loss of habitat would be implementing the District's updated habitat restoration program (see Section 4.5 and Mitigation Measure B-1). The impact to wildlife is considered significant, but mitigable (Class II).

Displace or Remove Sensitive Fish and Wildlife

Disturbance of channel banks and bed from heavy equipment during channel shaping, placement of bank protection, channel shaping, desilting operations, ramp construction, and repair of bank protection and grade stabilizers could displace or remove sensitive fish and wildlife species, depending upon location and time of year. This same impact could occur due to clearing pilot channels and outlet works in debris basins, as well as removing sediments from basins. There is a wide variety of sensitive fish and wildlife species that occur on the maintained drainages and in the debris basins. Many of these species would not be directly affected because they would be absent from the maintenance areas during the work which occurs in the fall, including the following spring and summer breeders: southwestern willow flycatcher, least Bell's vireo, yellow warbler, yellow breasted chat, purple martin, warbling vireo, Wilson's warbler, Swainson's thrush, blue grosbeak.

Other species occur primarily in mature riparian and oak woodlands, or in eucalyptus groves that are situated on the banks or floodplain where the District does not remove habitat under the maintenance program. The include the monarch butterfly, white-tailed kite, Cooper's hawk, sharp-shinned hawk, long-eared owl, Townsend's big-eared bat, pallid bat, and spotted bat. The potential to directly affect these species, or cause a substantial indirect impact on them is considered very low.

The endangered California tiger salamander occurs in highly restricted habitat conditions that are not associated with drainages, and as such, is not expected to be directly or indirectly affected by maintenance activities. The populations of this species in the North County are known and can easily be avoided if there was an unexpected need to work near these upland sites. The western spadefoot toad is similarly restricted to habitats outside of drainages - grasslands and cattle ponds. As such, no direct or indirect impact is expected to occur to this species from maintenance activities.

There are no records of the southwestern arroyo toad, nor any expectation of its occurrence, on any maintained drainage or debris basin. Hence, no impact is expected to occur to this species.

The unarmored three-spine stickleback occurs in San Antonio Creek within and downstream of Barka Slough, over three miles from the nearest maintenance site on San Antonio Creek where brushing occurs every several years. No adverse indirect effect is expected to occur from the upstream maintenance activities on the creek.

The tidewater goby occurs at the mouths of the Santa Ynez and Santa Maria rivers, San Antonio Creek, and several South Coast creeks. Maintenance activities would not directly affect this species because the work would occur upstream of the estuarine habitats. Indirect adverse effects to this species are not anticipated because significant, adverse levels of herbicide and/or suspended sediments are not expected to occur downstream of the work areas, as described in Section 5.2.3.

The maintenance program could directly affect the following species, which occur within the aquatic, wetland, and riparian habitats on the bottoms of a channel or debris basin:

- *Southern steelhead trout.* The potential for directly affecting the steelhead is considered very remote for several reasons. One, maintenance work occurs in the fall when only juveniles are present in creeks, usually in permanent ponds in the upper watershed where the District rarely conduct maintenance work except for debris basins. Two, the District seldom works in live streams and ponds that would harbor juvenile steelhead.

- *Arroyo chub.* This species could be present in live streams on the South Coast, and perhaps in some undisturbed North County streams, on a year-round basis. There is a potential for direct impacts from maintenance activities, although the occurrence would be remote as the District infrequently works in live streams with habitat conditions suitable for this species.

- *Southwestern pond turtle.* This species has only been sighted on one maintained drainage (Sycamore Creek), but could be present in others on the South Coast, and perhaps in some undisturbed North County streams. There is a potential for direct impacts from maintenance activities, although the occurrence would be remote as the District does not work in pools where this species occurs.

- *Two-striped garter snake.* This species has not been observed on any maintained drainages. It could potentially occur on undisturbed creeks in the North County, and perhaps on certain South Coast creeks (although its presence on the South Coast has not been confirmed). Because it inhabits wetlands and riparian habitats on the channel bottom, there is a potential for direct impacts from maintenance activities.

- *San Diego horned lizard.* This species occurs in dry washes and scrub habitat adjacent to creeks in the North County. There is a potential for direct impacts from maintenance activities.

- *California red-legged frog.* The red-legged frog occurs in wetland habitats near water in a variety of drainages. It is known from several drainages in the North County where the District has routinely implemented avoidance and relocation measures during maintenance activities. It is not expected on the South Coast.

- *Silvery legless lizard.* This species may occur in drainages with dense riparian woodland where detritus and organic matter has accumulated on the channel bottom. As such, it could be directly affected by maintenance activities.

- *Tri-colored blackbird.* This species occurs in dense cattail marshes in the North County and could inhabit or utilize cattail stands in maintained drainages. Hence, it could be directly affected by maintenance activities.

- *Tidwater goby.* This species occurs in estuarine reaches of selected South Coast streams, often temporarily wandering upstream to non-estuarine reaches where maintenance could occur, or would be in close proximity.

It is anticipated that the frequency of encountering the above species (except for the red-legged frog) at maintenance sites would be low. However, direct adverse impacts to the above listed species would be considered significant due to their protected status and/or rarity. This impact is considered mitigable (Class II) because the District will conduct pre-construction surveys for sensitive fish and wildlife when their occurrence is possible, relocate species that cannot be avoided, and monitor maintenance to ensure avoidance or minimization (see Mitigation Measures B-5 and B-6). For nine years, the District has successfully conducted pre-construction biology surveys and avoided impacts with the only species encountered at work sites – the red-legged frog.

The removal and/or thinning of vegetation from channel bottom due to brushing, herbicide application, desilting, channel shaping, and debris basin maintenance could remove habitat used for foraging by the following sensitive breeding birds when they return in the summer following the maintenance work: southwestern willow flycatcher, least Bell's vireo, yellow warbler, yellow breasted chat, purple martin, warbling vireo, Wilson's warbler, Swainson's thrush, blue grosbeak. Placement of hard bank protection on an eroding bank and construction of new access ramps could affect foraging and nesting habitat for these species. This impact would be mitigated over time under the updated restoration program (see Section 4.5 and Mitigation Measure B-1) by creating new habitat. This impact is considered significant, but mitigable (Class II).

The above impact conclusion would also apply to riparian-related species that may be listed in the future as threatened or endangered. The District could apply various methods to avoid direct and indirect impacts to such species, as it has in the past for listed fish, reptiles, and birds.

Fish and Wildlife Exposure to Herbicide

The analyses presented in Section 5.2.3 indicated that the application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed, because of following reasons: (1) no herbicide is directly applied to open water; (2) overspray is minimized by precise spraying by trained field crews; (3) most spraying occurs in the fall when flows are absent in drainages; (4) glyphosate is strongly absorbed by soil particles and not easily mobilized once it has contact with soils or wet sediments; and (5) residual herbicide in soils or sediments are subject to microbial degradation. However, there is a potential, albeit very remote, that adverse herbicide concentrations may be temporarily present in aquatic areas immediately after spraying due to excessive or poor application.

The EPA label for Rodeo™ is approved for use in open water with fish and aquatic organisms if it is applied at the proper concentration. The EPA label states: "This product may be applied to emerged weeds in all bodies of fresh and brackish water which may be flowing, nonflowing, or transient. This includes lakes, rivers, streams, ponds, estuaries ..... wildlife habitat restoration and management areas, and similar sites." There is no restriction on the use of treated water for irrigation, recreation, wildlife habitat, or domestic purposes.

Glyphosate is rated by the EPA as "practically non-toxic" (i.e., requires concentrations in water over 100 mg/l for prolonged periods of time) for the following aquatic invertebrates and fish: *Daphnia magna*, mysid shrimp, grass shrimp, fiddler crab, sea urchin, carp, bluegill sunfish, minnow. It is only slightly toxic (i.e., requires concentrations between 10 and 100 mg/l for prolonged periods of time) for rainbow trout and oyster larvae. There is a very low potential for the compound to build up in the tissues of aquatic invertebrates or other aquatic organisms. Acute toxicity in trout and bluegill were observed with 96-hour dosages of over 1,000 mg/l.

Glyphosate is nontoxic to honeybees. Its oral and dermal LD_{50} is greater than 0.1 mg/bee. Glyphosate has no known effect on soil microorganisms. The reported contact LC_{50} values for earthworms in soil are greater than 5,000 ppm for glyphosate. Glyphosate is non-toxic to birds, mammals, and bees. Acute oral toxicity (LD_{50}) in mammals is over 4,000 mg/kg, while acute dermal toxicity (LD_{50}) in mammals is over 800 mg/kg. Glyphosate is slightly toxic to wild birds. The dietary LC_{50} in both mallards and bobwhite quail is greater than 4,500 mg/l.

The above concentrations and prolonged exposures from laboratory tests are not expected to occur in field in light of the methods and time of year that herbicides are applied. Water quality data from 1999-2000 for 25 drainages in the county indicate that glyphosate is ubiquitous, but that concentrations are well below applicable standards, and orders of magnitude below the above toxicity and chronic effect levels (see analyses in Section 5.2). <u>Other water quality data from 2000 and 2001 support this conclusion, as described in Section 5.2.2.</u> Nevertheless, the potential exposure of fish and aquatic organisms to herbicides used in channel and basin maintenance is considered a significant, but mitigable impact (Class II). Significant impacts to the health of fish and aquatic organisms can be avoided by minimizing herbicide applications and applying them in a careful and responsible manner, as described in Mitigation Measure W-2, <u>as well as Measures W-5 and W-8</u> (see Section 5.2.3). This conclusion is consistent with the finding in the 1991 Final EIR that impacts of herbicides on fish and aquatic species can be fully mitigated.

<u>Impact of Accidental Releases on Aquatic Organisms</u>

As described in Section 5.2.2, there is a very low potential for the accidental discharge of fuel, oil, and herbicides to a channel or debris basin during routine maintenance. In addition, the area affected is likely to be very small, and readily contained by the District's spill containment procedures. Based on these conclusions, the potential impact to fish and aquatic organisms in or near the spill site is expected to be adverse, but not significant (Class III). Any accidental spills are expected occur very rarely and to be very localized in nature. No spills have occurred in the past nine years of the routine maintenance program.

Fish Passage Impacts from New and Repaired Grade Stabilizers

New grade stabilizers may be installed to stabilize the bed of a channel that is being lowered due to headcutting. A new stabilizer could create a vertical drop, which may become a fish passage impediment or barrier over time, depending on the height of the vertical drop. This impact is considered a significant, but mitigable impact (Class II) because it can be avoided by designing a stabilizer that minimizes future downstream scouring, per Mitigation Measure H-7. It should also be noted that the need for a grade stabilizer must also be justified using the hydraulic considerations under Mitigation Measure H-1 To encourage other entities to remove fish passage impediments, the District will implement Mitigation Measure F-1.

5.4.3 Mitigation Measures

Measures B-1 through B-3, and B-5 and B-6 are repeated from Section 5.3.3. Measures H-7, W-2, W-5, and W-8 are repeated from Sections 5.1.3 and 5.2.3.

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. ***Monitoring and Timing:*** *The District staff will determine the need and scope of compensatory habitat mitigation as part of the development of the Annual Maintenance Plan each spring. Subsequent to the maintenance work, the District Biologist will implement the restoration work, including site preparation and planting. If off-site mitigation is used, the District will acquire habitat credits at the LCMB in accordance with the process* *approved by regulatory agencies.* ***Reporting:*** *The determination of the habitat mitigation needs and approach will be documented in the Annual Maintenance Plan. The success of habitat restoration will be documented in the District's annual restoration status report.*

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. ***Monitoring and Timing:*** *The District staff will determine the minimal amount of vegetation to be removed as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the vegetation removal occurs as intended under this measure.* ***Reporting:*** *The area of vegetation to be removed will be documented in the Annual Maintenance Plan. A summary of the actual work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District Biologist will conduct daily inspections of the maintenance work.* ***Reporting:*** *A summary of the maintenance work based on monitoring by the District staff will be described in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will document occurrences of sensitive species in or near the work areas in the Annual Maintenance Plan. Avoidance and impact minimization measures will also be specified.*

District staff will monitor the avoidance as part of the maintenance work. ***Reporting:*** *A summary of the maintenance work and compliance with the avoidance measures will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District Biologist will monitor maintenance work near sensitive species locations.* ***Reporting:*** *A summary of the maintenance work and associated monitoring will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will complete the analysis of alternative grade stabilizers as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the appropriate method is implemented, and that a vertical drop is avoided.* ***Reporting:*** *The analysis of alternative stabilizer designs will be documented in the Annual Maintenance Plan. A summary of the actual work conducted will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will conduct and/or oversee the maintenance work to ensure that the appropriate herbicide application method is used* *by field crews, identify target vegetation, and place warning signs. Reporting: A summary of the maintenance work will be documented in the annual post maintenance report.*

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. *Monitoring and Timing. District staff shall conduct the water quality sampling as noted above. Reporting. The Annual Plan shall indicate where water quality sampling will be conducted, and the annual post-maintenance report shall include the results.*

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 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. ***Monitoring and Timing.*** *The District shall carefully consider the use of herbicides in each Annual Plan, and seek alternative methods.* ***Reporting.*** *The District shall report the amount of herbicides applied each year and the miles of drainages affected in the Annual Plan and annual post-maintenance report, including a cumulative account of past years.*

F-1 – Assist Others with Fish Passage Impediment Removal Projects. Subject to available resources, the District shall provide technical and regulatory assistance to other parties (agencies and non-governmental organizations) seeking to remove or modify fish passage impediments along reaches maintained by the District. Assistance shall include review and recommendation concerning project plans; and identifying a CEQA lead agency and assisting in the preparation of a CEQA document for the proposed project; and general assistance in acquiring access easements and permits. ***Monitoring and Timing.*** *The District shall provide assistance on an as-needed basis.* ***Reporting.*** *The District shall document all assistance in the Annual Plan.*

5.5 AIR QUALITY

5.5.1 Existing Conditions

The project site is located within the central section of the South Central Coast Air Basin (SCCAB). The SCCAB includes all of San Luis Obispo, Santa Barbara, and Ventura counties. The central section is under the jurisdiction of the Santa Barbara County Air Pollution Control District (APCD). The APCD establishes and enforces regulations for stationary sources in the Basin, and develops plans to accomplish attainment of the state and federal air quality standards. As required by both the California Clean Air Act of 1988 and the Federal Clean Air Act Amendments, the APCD has developed a Clean Air Plan (CAP) to address attainment of state and federal ozone standards.

Santa Barbara County's air quality has historically violated state and/or federal health standards for three pollutants: ozone, inhalable particulate matter (PM_{10}), and hydrogen sulfide. Under federal and state standards, the County has been designated by EPA as a "serious" non-attainment area for ozone. The number of exceedances of the state one-hour ozone standards has decreased from 23 days in 1993 to 10 days in 1997. Due to this designation by the EPA, the County amended its Clean Air Plan in 1998 to achieve compliance with the federal and state ozone standards.

Santa Barbara County is also designated nonattainment for the state PM_{10} standard. There have been no exceedances of the California hydrogen sulfide standard since 1990 and in November 1993, the CARB determined that the county was in attainment for this standard. As of 1994, the County was also designated as an "attainment area" for state standards for sulfur dioxide, nitrogen dioxide, and carbon monoxide.

Air pollution can affect all segments of the population; however, certain groups/land uses are more susceptible to adverse air quality impacts. Children, the elderly, and the chronically or acutely ill are the most sensitive population groups. Land uses which may house sensitive receptors include schools, parks, child care centers, retirement homes, convalescent facilities, and hospitals. Residences are also considered to be sensitive because of the potential for extended periods of occupancy and hence exposure to air contaminants. Certain crop types (e.g., produce crops and cultivated flowers) are also sensitive to air pollutants.

5.5.2 Potential Impacts

5.5.2.1 Significant Impact Thresholds

The following thresholds of significance were adopted by the Santa Barbara County APCD (2000) which consider a project to have a significant impact if operation of the project will:

- Emit more than the daily trigger for offsets set in the APCD New Source Review Rule (240 lbs/day for reactive organic compounds (ROC) and NOx, and 80 lbs/day for PM_{10})
- Emit more than 25 lbs/day of ROC and NOx from motor vehicle trips only
- Cause or contributed to a violation of any California or National Ambient Air Quality Standard
- Exceed the APCD health risk public notification thresholds adopted by the APCD Board
- Be inconsistent with the adopted federal and state air quality plans for Santa Barbara County

The following thresholds were adopted by the Santa Barbara County Planning and Development Department (1995a):

1. Interferes with the progress toward the attainment of the ozone standard by releasing emissions which equal or exceed the established long-term quantitative threshold for NOx and ROC
2. Equals or exceeds the state of federal ambient air quality standard for any criteria pollutant (as determined by modeling)
3. Either individually or cumulatively, exceeds the 1994 Clean Air Plan's emissions projections or growth assumptions.

Short-term thresholds for NOx, PM_{10}, and ROC emissions for construction equipment have not been established by the County of Santa Barbara (Santa Barbara County APCD, 1998; Santa Barbara County, 1995a).

5.5.2.2 Previously Identified Impacts

The following air quality impacts were identified in the 1991 Final EIR:

Previously Identified Class I Impacts

1. Additional respirable particulate matter (PM_{10}) emissions in both North and South County, which are already in violation of California 24-hour standard, cause unavoidable significant impacts. *This impact is addressed below in Section 5.5.2.3.*

Previously Identified Class II Impacts

2. Additional hydrocarbon and nitrogen dioxide (NO_2) emissions countywide which are already in violation of California standards for ozone (O_3) and NO_2 cause significant impacts. *This impact is addressed below in Section 5.5.2.3.*

Previously Identified Class III Impacts

3. Herbicide spraying of vegetation has the potential to cause air quality impacts. *This impact is addressed below in Section 5.5.2.3.*

5.5.2.3 Potential Impacts

Emissions will be generated during the following maintenance activities due to the use of diesel and gasoline powered engines:

- Brushing – chain saws, chipper, weed-eaters
- Channel shaping and desilting – bulldozers, excavator, front end loader, Gradall™, dump truck
- Bank protection and grade stabilizer installation or repair – front end loaders, concrete trucks, haul trucks, cranes, excavator

The above equipment would generate reactive organic compounds (ROC), nitrogen oxides (NOx), and particulate matter (PM_{10}) emissions. In general, the generation of fugitive dust from maintenance activities would be minor because most of the work does not involve excavation or handling soils – i.e., brushing and spraying. Channel shaping and desilting would generate fugitive dust. Emissions would be temporary and localized. In most cases, the maintenance activities would be completed at a single location within 2 – 4 days.

The APCD has not established thresholds of significance for evaluating maintenance-related emissions, nor for construction emissions which are similar to maintenance related emissions because they are short-term. Construction-related emissions for the entire county have been estimated by the APCD and are included in the county-wide inventory of emissions in the Clean Air Plan (APCD, 1998). They are generally considered insignificant because they are short-term in nature and comprise a very small fraction of the total county-wide emissions from all point, mobile, and area sources. Maintenance related emissions would be similar in nature, and as such, would be generally considered less than significant within the context of the county-wide emissions. Nevertheless, the short-term maintenance emissions occur on a regular basis and therefore, contribute to the degradation of local and regional air quality. Hence, they are considered significant, but mitigable (Class II) by the application of standard APCD emission reduction measures.

The maintenance program is considered consistent with the approved Clean Air Plan because the emissions would be very small, and similar to construction-related emissions (which are included in the CAP emissions inventory). In addition, the project will not induce growth and cause any new significant long-term traffic emissions.

5.5.3 Mitigation Measures

The following measures are based on standard equipment and dust control measures recommended by the Santa Barbara County APCD (1998). Implementation of appropriate measures from this list will reduce air quality impacts. Implementation of these measures will be monitored and reported by District personnel during regular inspections of the site during construction.

AQ-1 To minimize NO_x emissions, the following measures shall be implemented for each piece of heavy-duty diesel construction equipment:

- The engine size of construction equipment shall be the minimum practical size.
- Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) should be utilized wherever feasible.
- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time.
- Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or precombustion chamber engines.
- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
- Diesel catalytic converters shall be installed, if available.
- Diesel powered equipment should be replaced by electrical equipment, whenever feasible

AQ-2 To minimize dust/ PM_{10} emissions, the following measures shall be implemented:

- After clearing, grading, earth moving or excavation is complete, the disturbed area must be treated by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise affected so that dust generation will not occur.
- During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this shall include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 mph. Reclaimed water shall be used whenever possible.
- Minimize the amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.
- Gravel pads should be installed at all access points to prevent tracking of mud onto public roads, where feasible
- If importation, exportation, and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.
- Trucks transporting fill material to and from the site shall be tarped.
- Dust control requirements shall be shown on all grading plans.
- The District shall designate a person to monitor dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such person shall be provided to the APCD prior to construction.

<u>Monitoring and Timing</u>: District personnel will conduct and/or oversee the maintenance work, and ensure that the above measures are being implemented, as feasible. <u>Reporting</u>: A summary of maintenance work, including a statement on compliance with the above measures, will be documented in the annual post maintenance report.

5.6 NOISE

5.6.1 Existing Conditions

Noise sensitive receptors include residences, mobile home parks, dormitories, hotels, motels, hospitals, nursing homes, schools, day care centers, libraries, churches, and places of public assembly. Maintenance activities along drainages occur in a variety of land uses settings where noise sensitive receptors may or may not be present. For example, work along many South Coast drainages occurs in residential neighborhoods or in commercial areas, where noise sensitive receptors may be present near the drainages. In contrast, maintenance work in the South Coast Basins occurs in an undeveloped area where noise sensitive receptors are absent. Maintenance along drainages in the North County primarily occurs in rural areas where noise sensitive receptors are not present.

The ambient noise levels at maintenance sites will vary accordingly. In undeveloped or rural areas, significant noise generators are absent, so ambient noise levels would be very low (e.g., 45-50 dBA). In urban and suburban areas, ambient noise levels would be substantially higher, generally due to roadway noise (e.g., 55-65 dBA).

5.6.2 Potential Impacts

5.6.2.1 Significant Impact Thresholds

Regulatory Considerations

The limits for noise generated by motor vehicles traveling on public roads are established by State law and are contained in the California Vehicle Code. These noise limits are considered pre-empted by the State and may not be modified by local jurisdictions. Local and state law enforcement agencies are, however, granted authority to enforce the vehicle noise regulations within their respective jurisdictions.

The primary method used by local governments to achieve noise/land use compatibility is by the regulation of land use in areas subject to motor vehicle noise emanating from public highways. Santa Barbara County has adopted noise standards to protect noise-sensitive land uses through ordinances and its CEQA significance thresholds (Santa Barbara County, 1995a).

Santa Barbara County applies conditions of approval to proposed developments that could be affected by highway noise in order to limit and reduce such noise exposure from existing sources. Noise producing activity (other than preempted sources) could be similarly regulated if such activities could adversely affect existing noise-sensitive receptors.

Significance Criteria

Specific noise thresholds from the Santa Barbara County (1995a) *Environmental Thresholds and Guidelines Manual* are listed below. Thresholds (a) through (c) are applicable to development projects and permanent noise sources, while threshold (d) is designed to address construction noise.

(a) A development that would generate noise levels in excess of 65 dB(A) CNEL and could affect sensitive receptors would generally be presumed have a significant impact.

(b) Outdoor living areas of noise sensitive uses that are subject to noise levels in excess of 65 dB(A) CNEL would generally be presumed to be significantly affected by ambient noise.

(c) A project will generally have a significant effect on the environment if it will increase substantially the ambient noise levels for noise-sensitive receptors in adjoining areas. This may generally be presumed when ambient noise levels affecting sensitive receptors are increased to 65 dB(A) CNEL or more. However, a significant effect may also occur when ambient noise levels affecting noise-sensitive receptors increase substantially, but remain less than 65 dB(A) CNEL.

5.6.2.2 Previously Identified Impacts

The following noise impacts were identified in the 1991 Final EIR:

Previously Identified Class I Impacts

1. Noise impacts from chain saws and dozers used for brush removal exceed County thresholds for noise levels at 50 feet. Noise impacts from front-end loaders and draglines used in desilting and shaping exceed County thresholds for noise levels at 50 feet. Impact is countywide, next to all rivers and streams maintained by the Flood Control District. *This impact is addressed below in Section 5.6.2.3.*

Previously Identified Class III Impacts

2. Noise impacts from brushing, desilting, and shaping operations on people using hiking and biking trails or parks located on watercourses where these practices are being carried out would cause adverse impacts for limited periods of exposure. *This impact is addressed below and in Section 5.8.2.*

5.6.2.3 Potential Impacts

Maintenance activities would involve the use of the following types of equipment:

- Brushing – chain saws, chipper, weed-eaters
- Channel shaping and desilting – bulldozers, front end loader, Gradall™, dump truck, excavator

- Bank protection and grade stabilizer installation or repair – front end loaders, concrete trucks, haul trucks, cranes, excavator

Noise levels at 50 feet associated with the most common maintenance equipment are as follows: chainsaw (80 dBA), dozer (80 dBA), Gradall™ (84 dBA), front-end loader (80 dBA), and chipper (87 dBA). Average noise levels associated with typical construction activities using similar equipment are 85 dBA at 50 feet, taking into account the fact that noise levels vary over time because activity is intermittent and power demands on equipment (and resulting noise output) are cyclical. Noise levels decrease at a rate of approximately six decibels (dB) per doubling of distance away from the source. Hence, noise levels at 100 and 200 feet from the work site would be 79 and 73 dBA, respectively.

Maintenance activities would occur between 7:30 AM and 4:30 PM, Monday through Friday. The predicted noise levels from typical maintenance activities (excluding spraying) would be audible in rural and residential areas, but possibly not audible in commercial and industrial areas, or near highways. Increased ambient noise levels could cause a nuisance to noise sensitive receptors.

The maximum noise levels associated with the use of heavy equipment during maintenance may exceed the 65 dBA threshold at nearby noise sensitive receptors (if present). The duration of the elevated ambient noise levels will vary with the type of maintenance activity. For example, brushing crews move along the drainages, and therefore, noise from this operation would be present for less than 1 - 2 hours at any single location. In contrast, desilting operations and construction of bank protection could cause increased ambient noise levels for several days.

The potential for high noise levels from construction-type noises such as maintenance activities, is recognized in the County of Santa Barbara's *Environmental Thresholds and Guidelines Manual*, which anticipates that noise levels from construction can exceed 65 dBA at nearby noise sensitive receptors. To mitigate this impact to less than significant levels, the *Environmental Thresholds and Guidelines Manual* states that work should be limited to weekdays and normal work hours during the day. Hence, the impact of maintenance noise would be considered significant but mitigable (Class II) by restricting the time of work.

5.6.3 Mitigation Measures

N-1 – Minimize Noise. Routine maintenance work shall be limited to weekdays and the hours of 7:30 AM and 4:30 PM. Equipment and haul trucks shall be equipped with functioning and properly maintained muffler systems, including intake silencers where necessary. Additional reductions in noise emissions shall be provided, as feasible, by performing noisy operations, such as chipping and loading spoils into dump trucks on the banks, as far away as practicable from sensitive receptors. *<u>Monitoring and Timing</u>: District personnel will conduct and/or oversee the maintenance work, and ensure that the above measures are being implemented. <u>Reporting</u>: A summary of maintenance work, including a statement on compliance with the above measures, will be documented in the annual post maintenance report.*

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5.7 CULTURAL RESOURCES

5.7.1 Existing Conditions

Cultural resources include pre-historic and historic archeological sites, and historic structures. Human activities and occupation are often concentrated along rivers and streams due to the proximity of water and productive floodplain soils. However, the dynamic nature of floodplains tends to disturb archeological deposits by cycles of scouring and flooding. Nevertheless, prehistoric archeological sites may be present along maintained drainages in the coastal plain of the South Coast, and along the floodplains of the North County. The most likely locations are high stable banks in the mid to upper watershed that are rarely subject to flooding or sediment deposition.

5.7.2 Potential Impacts

5.7.2.1 Significant Impact Thresholds

The following thresholds are used to identify significant biological impacts. These thresholds are derived from the Environmental Checklist form in the most recent CEQA Guidelines.

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Eliminate important examples of the major periods of California history or prehistory.

5.7.2.2 Previously Identified Impacts

The following impacts to cultural resources were identified in the 1991 Final EIR. All were classified as significant, but mitigable impacts (Class II). No Class I (significant and unmitigable) were identified.

<u>*Impacts in Rivers*</u>

1. Maintenance activities such as brushing, shaping, and grading on stable river bank tops or slopes and access ways adversely impact sensitive cultural resources. *This impact is addressed below in Section 5.7.2.3.*

2. Indirect impacts of maintenance causing erosion and destabilization of waterway banks of an archeological site can cause substantial damage to cultural resources. *The maintenance program does not result in destabilized banks, as described in Section 5.1.2, Hence, this impact is no longer applicable.*

3. Vegetation removal and unsecured access points open up possibilities for increased public looting of cultural resources. *The removal of vegetation by brushing and spraying does not*

disturb soils or result in the excavation of soils.Archeological sites are absent from channel beds where brushing and spraying occurs. The program does not include removal of bank vegetation. As such, vegetation removal would not affect cultural resources. The second impact is also not considered applicable, as the District has not observed any increase in public uses of drainages due to use of the District's access ramps. In general, these ramps are difficult to find. In addition, they mostly occur within private property, where trespassing is prohibited. Archeological sites are absent from channels, and are infrequent along the immediate banks.

Impacts to River Tributaries

4. Brushing, shaping, and desilting by heavy equipment can damage to sensitive cultural resources. *This impact is addressed below in Section 5.7.2.3.*

5. Use of gradalls to desilt a drainage channel can severely damage an archeological site in banks or channel. *This impact is addressed below in Section 5.7.2.3.*

6. Placement of sediment on top of cultural resources, movement of heavy equipment over resources, and the mixture of cultural and non-cultural site soils during the transport of sediments off site can damage cultural resources. *The placement of soils on top of intact buried archeological sites is not considered an adverse impact, as the integrity of the site remains unchanged. The District does not excavate archeological sites – they are avoided. Hence, there is no potential for mixing of cultural and non-cultural soils. This impact is no longer applicable.*

7. Any maintenance activity in the area of an archeological site has the potential to enhance erosion and destabilize creek and channel banks causing substantial damage to the resource. *The maintenance program does not result in destabilized banks, as described in Section 5.1.2, Hence, this impact is no longer applicable.*

8. Vegetation removal has the potential to expose surface artifacts and cultural features to periodic looting and vandalism. *The removal of vegetation by brushing and spraying does not disturb soils or result in the excavation of soils. Archeological sites are absent from channel beds where brushing and spraying occurs. The program does not include removal of bank vegetation. This impact is no longer considered applicable.*

9. The effect of herbicides on the preservation properties of archeological resources is unknown but must be considered to have the potential for causing significant impacts. *The use of herbicides would not affect buried archeological deposits, as they only affect living plants, and will decompose in the soil. This impact is no longer considered applicable.*

10. Unsecured existing access points and creation of new access into stream channels serve to open up creek areas for public access and increased probability of resource looting and vandalism. *This impact is no longer considered applicable, as the District has not observed any increase in public use of drainages due to the District's access ramps. In general, these ramps are difficult to find. In addition, they mostly occur within private property, where trespassing is prohibited.*

Impacts in North County, Coastal Basin Streams and Tributaries

11. Brushing, shaping, and desilting by heavy equipment can damage sensitive cultural resources. *This impact is addressed below in Section 5.7.2.3.*

12. Use of gradalls to desilt a drainage channel can severely damage an archeological site in banks or channel. *This impact is addressed below in Section 5.7.2.3.*

13. Placement of sediment on top of cultural resources, movement of heavy equipment over resources, and the mixture of cultural and non-cultural site soils during the transport of sediments off site can damage cultural resources. *The placement of soils on top of intact buried archeological sites is not considered an adverse impact, as the integrity of the site remains unchanged. The District does not excavate archeological sites – they are avoided. Hence, there is no potential for mixing of cultural and non-cultural soils. This impact is no longer applicable.*

14. Vegetation removal has the potential to expose surface artifacts and cultural resources to periodic looting and vandalism. *The removal of vegetation by brushing and spraying does not disturb soils or result in the excavation of soils. More importantly, archeological sites are absent from channel beds where brushing and spraying occurs. This impact is not considered applicable.*

15. The effect of herbicides on the preservation properties of archeological resources is unknown but must be considered to have the potential for causing significant impacts. *The use of herbicides would not affect buried archeological deposits, as they only affect living plants, and will decompose in the soil. This impact is no longer considered applicable.*

16. Unsecured existing access points and creation of new access into stream channels serve to open creek areas for public access and increased probability of resources looting and vandalism. *This impact is not considered applicable, as the District has not observed any increase in public uses of drainages due to the District's access ramps. In general, these ramps are difficult to find. In addition, they mostly occur within private property, where trespassing is prohibited. Archeological sites are absent from channels, and are infrequent along the immediate banks.*

<u>*Impacts in South Coast Foothill Streams*</u>

17. Use of a dozer to provide access to stream channels and temporary stockpiling of debris and spoils on stream sides can cause cultural resource impacts. *This impact is addressed below in Section 5.7.2.3.*

18. Burying and mixing the cultural and non-cultural materials during removal and transport to a disposal site can impact cultural resources. *The District has not excavated an archeological site during maintenance. This situation would be avoided. Hence, no mixing would occur.*

19. Any maintenance activity resulting in the removal of vegetation in an archeological site area can enhance erosion and destabilize creek channel banks causing substantial disturbance to the resource. *The maintenance program does not result in destabilized banks, as described in Section 5.1.2, Hence, this impact is no longer considered applicable.*

20. Vegetation removal has the potential to expose surface artifacts and cultural features to periodic looting and vandalism. *The removal of vegetation by brushing and spraying does not disturb soils or result in the excavation of soils. More importantly, archeological sites are absent from channel beds where brushing and spraying occurs. This impact is not considered applicable.*

21. Existing unsecured access points and creation of new access into stream channels for maintenance activities opens up creek area for recreational use. This can lead to resource looting and vandalism and direct impacts from ORV's and motorcycles. *This impact is no longer considered applicable, as the District has not observed any increase in ORV use of drainages due to use of the District's access ramps. In general, these ramps are difficult to find. In addition, they mostly occur within private property, where trespassing is prohibited.*

<u>*Impacts in South Coast Alluvial Fan Streams*</u>

22. Use of draglines to desilt stream in Goleta and Carpinteria Valleys can cause severe direct impacts to cultural resources. *This impact is addressed below in Section 5.7.2.3.*

23. Placement of sediment on top of cultural resources, movement of heavy equipment over resources, and the mixture of cultural and non-cultural site soils during the transport of sediments from site can damage cultural resources. *The placement of soils on top of intact buried archeological sites is not considered an adverse impact, as the integrity of the site remains unchanged. The District does not excavate archeological sites – they are avoided. Hence, there is no potential for mixing of cultural and non-cultural soils. This impact is no longer applicable.*

24. Secondary archeological sites are created when removed soils containing archeological artifacts and faunal remains are placed on other sites. This confuses true site results. *This impact is not considered applicable. The District retrieves all desilting spoils. Activities above an archeological site are not considered adverse if they do not affect the physical integrity of the site.*

25. Dozer use to provide access to stream channel during brushing and shaping can severely damage bank land forms and cultural resources present therein. *This impact is addressed below in Section 5.7.2.3.*

26. Any maintenance activity in the area of an archeological site has the potential to enhance erosion and destabilize creek and channel banks causing substantial damage to the resources present and exposing surface artifacts and cultural features to periodic looting and vandalism. *The maintenance program does not result in destabilized banks, as described in Section 5.1.2, Hence, this impact is no longer applicable.*

27. Buried cultural resources may be present along South Coast alluvial fan streams and may be disturbed by maintenance activities. *This impact is addressed below in Section 5.7.2.3.*

<u>*Impacts in Estuaries*</u>

28. Desilting and shaping can impact cultural resources buried under sediments in estuarine basins and along relict shores adjacent to tributary stream channels. *The program does not include maintenance in estuaries.*

29. There is an abundance of naturally occurring shellfish in silt removed from estuaries during dragline operations. This can lead to misidentification of archeological sites where such spoil is redeposited. *The program does not include maintenance in estuaries.*

30. Use of mechanical equipment such as gradalls to maintain artificial ditches and retardation basins, which may intersect cultural resource sites, can cause extensive damage to such sites. *This impact is addressed below in Section 5.7.2.3.*

31. Many ditches provide substantial subsurface exposures of buried cultural resources which may be disturbed by maintenance activities. *There has been no evidence of this situation during the nine years of the program and as such, this impact is not considered applicable.*

32. Herbicide spraying to control vegetation growth, brushing, and shaping within South Coast stream inverts, and the repair of existing flood control facilities and devices have the potential to cause adverse but not significant impact to cultural resources. *This impact is addressed below in Section 5.7.2.3.*

5.7.2.3 Potential Impacts

The potential for disturbing intact archeological sites during routine maintenance activities is remote because of the following reasons:

- Most maintenance activities involves no surface disturbances, i.e., brushing and spraying
- Most maintenance activities occur within the active channel of the drainage where archeological sites and artifacts are absent, or if present, represent re-deposited materials without archeological significance

There is a very low potential for certain earth-disturbing maintenance activities to affect buried prehistoric and historic archeological sites and isolated artifacts. This impact would occur only on undisturbed upland sites outside watercourse channels and basins, and would be due to incidental excavation associated with grading banks for stabilization, temporary stockpiling of spoils on the banks, installing or repairing bank protection, and constructing access ramps. This impact is considered potentially significant, but mitigable (Class II). It would be mitigated by conducting pre-disturbance archeological surveys to ensure avoidance of archeological sites, and by investigating unexpected discoveries of artifacts during maintenance work (Mitigation Measures C-1 and C-2).

It should be noted that the District has conducted maintenance work near several archeological sites over the past nine years, which required a field investigation by a qualified archeologist and measures to avoid direct impacts to the sites when establishing access ramps on the banks.

5.7.3 Mitigation Measures

C-1 - Unexpected Archeological Finds. If cultural materials are unexpectedly uncovered during maintenance activities, the District shall immediately consult with a qualified archeologist who shall inspect the material and coordinate with the District to halt or redirect earth-disturbing maintenance work until the significance of the material is determined, and the location is cleared for further work. *Monitoring and Timing: District personnel will conduct and/or oversee the maintenance work. They will address any cultural resource issue that occurs unexpectedly in the* *field. Reporting: A summary of maintenance work, including a description of any measures taken to avoid cultural resources, will be documented in the annual post maintenance report.*

C-2 - Archeological Surveys. The District shall conduct an archeological field investigation in maintenance areas that may be disturbed by excavation activities associated with routine maintenance when such work occurs in upland areas outside watercourses and basins that: (1) appear to represent undisturbed ground not subject to previous excavations or significant grading; and (2) contain known significant archeological sites. The investigation shall be conducted by a qualified cultural resource specialist. *Monitoring and Timing: The District staff will determine the need, if any, for cultural resource investigations prior to the maintenance work, as part of the development of the Annual Maintenance Plan each spring. Reporting: Results of the studies will be incorporated into the Annual Maintenance Plan.*

5.8 RECREATION

5.8.1 Existing Conditions

Recreational opportunities along the maintained drainages consist of two categories: (1) informal recreation which include hiking and exploring along drainages on public and private property (which may include trespassing) in areas without designated trails, parks, or gathering spots; and (2) formal recreation, consisting of hiking, natural exploration, children's play, and outdoor education along public trails and at public parks. Access to most maintained drainages is difficult because they are primarily located on private property where access is prohibited, as well as difficult to reach due to fences. Access to debris basins is also difficult, as they are fenced to preclude public entry.

Public trails are mostly absent from the North County drainages, except for a trail along a portion of Orcutt-Solomon Creek. However, there are a number of public trails and parks near South Coast drainages, as listed below:

- Public trails that occur adjacent to the San Ysidro, Rattlesnake, and San Roque debris basins
- Public trails that occur along maintained reaches of Arroyo Burro and San Pedro Creek
- Parks that are situated along maintained drainages, including Hidden Valley Park, Steven's Park, Oak Park, Manning's Park, Tucker's Grove, Rocky Nook Park

5.8.2 Potential Impacts

5.8.2.1 Significant Impact Thresholds

The following thresholds are used to identify significant recreational impacts. These thresholds are derived from the Environmental Checklist form in the most recent CEQA Guidelines.

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

5.8.2.2 Previously Identified Impacts

The following impacts to recreational resources were identified in the 1991 Final EIR. No Class I impacts (significant and unmitigable) were identified.

Previously Identified Class II Impacts

1. Aerial spraying near the mouth of the Santa Maria River could impact Guadalupe Dunes Beach Park visitors. *The routine maintenance program does not include aerial spraying.*

2. Use of dozers to brush, shape, realign, and open pilot channels in the Santa Maria and Santa Ynez rivers, San Antonio Creek, and North County tributaries causes losses of aquatic life, wildlife habitat, riparian vegetation, and quality open space, thus reducing recreational values. *The impact of maintenance activities on recreational users along drainages, in general, is addressed below in Section 5.8.2.3.*

3. Use of dozers to remove brush, shape, and realign South Coast streams creates artificial channels which reduce recreational opportunities for walking, hiking, biking, and equestrian use. *This impact is addressed below in Section 5.8.2.3.*

4. Recreational enjoyment for hikers, bikers, and adjacent residents is diminished when silt that is removed from South Coast creeks and estuaries is piled on banks for prolonged periods. *This impact is addressed below in Section 5.8.2.3.*

5. Dragline operations to desilt South Coast streams and estuaries result in loss of riparian vegetation on banks which in turn diminishes the quality of recreational experiences. *This impact is addressed below in Section 5.8.2.3.*

Previously Identified Class III Impacts

6. Maintenance practices interrupt natural stream processes that carry sediments to coastal waters and sand to beaches. *This impact is addressed below in Section 5.8.2.3.*

5.8.2.3 Potential Impacts

Temporary Disruption of Creek and Trail Use

Maintenance activities near a public trail may disrupt the use of the trail for a short period of time, and/or disrupt the use of the creek for informal recreation. The District has rarely needed to temporarily close a public trail for maintenance work, as a temporary detour can usually be established. Hence, it is unlikely that maintenance activities would preclude the use of a public trail. However, work in a drainage would preclude the informal use of the creek for recreation as crews brush, spray, desilt, or otherwise work in the channel or on the bank. This impact is considered adverse, but not significant (Class III) because it would occur infrequently, for a short duration, and affect very few people. Nevertheless, the District will implement Mitigation Measure R-1 to reduce the magnitude of this impact.

Potentially Adverse Herbicide Concentrations

The application of herbicides to control emerging vegetation on the channel bed is not expected to introduce substantial amounts of herbicide to the water in the drainage where fish, aquatic organisms, and humans could be exposed, as described in Section 5.2.2. However, there is a potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray, which would degrade water quality and affect recreational users along creeks. While this impact would be localized and temporary, it is considered a significant, but mitigable impact (Class II). A significant impact would be avoided by responsible application of herbicides, and the placement of signs (see Mitigation Measure W-2).

Beach Sand Loss

The periodic removal of sediments from debris basins on the South Coast contributes to the cumulative loss of beach sand supply, which would indirectly affect beach users. The magnitude of this impact is considered very small to almost negligible because the South Coast debris basins are not designed to capture wash load, which makes up the bulk of the total sediment load. In addition, the amount of sediment potentially stored in the South Coast debris basins is very small compared to the annual sediment production from the mountains. These basins do not compare to major dams and reservoirs, which can store millions of cubic yards of sediments. It should also be noted that the potential reduction in beach sand supply due to debris basin desilting is counteracted by the hydraulic effects of brushing, spraying, and desilting, which are designed to facilitate conveyance of sediment to the ocean.

Nevertheless, the potential reduction in beach sand and its indirect effect on recreational users is considered a potentially significant impact due to the cumulative effects of the many debris basins on the South Coast. This impact can be mitigated (Class II) by the disposal of suitable sediment removed from the basins at local beaches, as permitted by regulatory agencies (Mitigation Measure R-2).

Despite the potential adverse impacts to beach sand described above, the District's maintenance activities on the South Coast are primarily designed to facilitate transport of sediment to the ocean. As such, the overall program may, in fact, have a beneficial impact on beach sand supply (Class IV).

5.8.3 Mitigation Measures

R-1 - Minimize Impacts to Trail and Park Users. To the extent feasible, the District shall provide temporary detours for hikers using public trails that must be closed for maintenance work. All work areas shall be marked by signs, and by flagging if necessary to protect the public from hazardous conditions. The District shall notify appropriate County and City parks departments prior to initiating maintenance work in public parks. The work area shall be visibly marked, and measures taken to prevent public entry. If feasible, work shall be restricted to off-peak park hours. *Monitoring and Timing: The District staff will determine the need and scope of any trail detours as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that the detours are properly flagged. Reporting: A summary of the actual work conducted will be documented in the annual post maintenance report.*

R-2 – Disposal of Sediments at Beaches. Sediments removed from debris basins or creeks on the South Coast during long-term maintenance of the basins and during routine maintenance of creeks, respectively, shall be disposed at local beaches to the extent feasible. Only suitably sized sediments shall be disposed at the beaches, as permitted by applicable regulatory agencies. ***Monitoring and Timing:*** *The District staff will conduct and/or oversee the maintenance work, including testing of sediments to be removed and acquiring any necessary permits. A proposal to dispose sediments at the beach will be included in the Annual Maintenance Plan.* ***Reporting:*** *A summary of the desilting and spoil disposal will be documented in the annual post maintenance report.*

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. ***Monitoring and Timing:*** *The District staff will conduct and/or oversee the maintenance work to ensure that the appropriate herbicide application method is used by field crews, identify target vegetation, and place warning signs.* ***Reporting:*** *A summary of the maintenance work will be documented in the annual post maintenance report.*

5.9 VISUAL RESOURCES

5.9.1 Existing Conditions

5.9.1.1 Visual Qualities

The visual qualities of the maintained drainages and basins vary considerably due to site-specific conditions. Many South Coast and certain North Coast creeks exhibit relatively natural visual characteristics such as a dense and structurally complex mosaic of riparian vegetation on the banks; a channel bottom with topographic diversity due to gravels, sands, and cobbles; and slowing or standing water, at least seasonally. Well-developed riparian vegetation along a creek has a high degree of visual interest due to its densities, textures, heights, and colors. In addition, creeks with riparian vegetation often exhibit a high level of visual contrast in which the year-round green foliage contrast sharply with the surrounding landscape They also provide a significant contrast to the urban environment due to the lush and abundant greenery along many of the City creeks.

Many maintained non-exempt drainages do not exhibit high visual qualities due to their disturbed nature. Examples include drainages without bank vegetation or drainages where portions of the channel contain grouted rip-rap. Some drainages in the North County have low visual qualities because the vegetation has been removed and the banks trampled by cattle and agricultural activities.

In general, the overall visual qualities of a drainage is dependent upon the following two factors:

- Condition of the banks and bed. The highest visual qualities are present on drainages with natural, non-uniform banks and complex channel bottoms various stream "runs" and pools that are reflective of natural mountain streams.

- Nature and extent of riparian vegetation. High visual qualities are present when there is a band of mature dense riparian trees along the banks that create a "jungle-like" ambience evocative of natural settings outside of urban areas.

Drainages can exhibit high visual qualities even within the context of a highly urbanized or agriculturally developed area, if the channel and vegetation conditions are relatively natural looking, as described above.

Visual elements that degrade the aesthetics of a drainage include bare eroding banks, bank protection in disrepair, trash, and channel bottoms with substantial deposits of sediment.

The visual qualities of debris basins are mixed. The basins generally contain a mosaic of highly productive and diverse riparian vegetation in a mountainous setting. However, after major floods the basins are filled with vegetative debris and sediments, detracting from their previously pristine appearance. In addition, the presence of the grouted rock embankment and outlet contrast sharply with the natural setting in the basin, representing a significant man-made element.

5.9.1.2 Sensitive Public Viewpoints

The opportunities for the public to view the maintained drainages vary greatly, depending upon access to or near the drainages, and availability of public land or roads where there are unobstructed views of the drainages. Most maintained drainages traverse private property, and as such, are not available for public use and "close-in" views. However, almost all drainages are traversed by public roads where the public has an opportunity for views of the drainage when driving (very fleeting), jogging or walking, or biking.

As described in Section 5.8, many creeks traverse parks and as such, provide a visual amenity to park users. In addition, hikers using public trails along creeks are often present due to the natural visual setting that a creek affords.

In many cases, the views of the drainage channel are obscured because of the presence of riparian vegetation along the banks, and/or because the channel is located below grade.

5.9.2 Potential Impacts

5.9.2.1 Significant Impact Thresholds

The Santa Barbara County (1995a) *Environmental Thresholds and Guidelines Manual* indicates that affirmative response to the following questions indicate potentially significant impacts to visual resources:

1. Does the project site have significant visual resources by virtue of surface water, vegetation, elevation, slope, or other natural or man-made features, which are publicly visible? If so, does the proposed project have the potential to degrade or significantly interfere with the public's enjoyment of the site's existing visual resources?

2. Does the project have the potential to impact visual resources of the Coastal Zone or other visually important areas (i.e., mountainous area, public park, urban fringes, or scenic travel corridor)? If so, does the project have the potential to conflict with policies set forth in the Local Coastal Plan, the Comprehensive Plan, or any applicable community plan to protect identified views?

3. Does the project have the potential to create a significantly adverse aesthetic impact through obstruction of public views, incompatibility with surrounding uses, structures, or intensity of development, removal of significant amounts of vegetation, loss of important open space, substantial alteration of natural character, lack of adequate landscaping, or extensive grading visible from public areas?

5.9.2.2 Previously Identified Impacts

The following impacts to visual resources were identified in the 1991 Final EIR:

Previously Identified Class I Impacts

1. Repair and maintenance of existing major facilities for flood control such as Santa Maria levee and South Coast concrete channels contribute to ongoing adverse visual impacts. *This impact is not considered applicable, as maintenance of existing visual conditions does not represent an impact to be considered under this EIR.*
2. Desilting operations on tributaries to Santa Maria River and San Antonio Creek to remove agricultural runoff deposits create denuded creek banks and unnaturally straight-lined creek inverts. *This impact is evaluated below in Section 5.9.2.3.*
3. Shaping and realignment of South Coast streams creates significant impacts because of resulting artificially flat, straight stream beds devoid of large rocks, and banks without vegetation. *This impact is not applicable because the District does not shape and realign creeks into flat, uniform channels devoid of bank vegetation.*

Previously Identified Class II Impacts

4. Visual degradation of river beds and some tributaries of Santa Ynez and Santa Maria rivers as a result of opening pilot channels and brushing with dozers. Visual impacts occur from dozer and off-road vehicle tracks and ruts, and deterioration of remaining vegetation. *This impact is evaluated below in Section 5.9.2.3.*
5. Indiscriminate removal of willows at the mouth of Santa Maria River by aerial spraying or dozers impacts visual quality of wetlands and surrounding dunes. Brush removal by dozers in tributaries of Santa Maria and Santa Ynez rivers produces adverse visual effects by creating flat, scraped creek beds having the appearance of a graded road. *Aerial spraying is not part of the proposed program. The impact of brushing, in general, is addressed below in Section 5.9.2.3.*
6. Desilting of South Coast alluvial fan streams and estuaries by dragline creates visual impact of denuded creek banks and storage of spoilpiles on tops of creek banks and in other wetland areas. *This impact is evaluated below in Section 5.9.2.3.*

Previously Identified Class III Impacts

7. Hand brushing and weed removal on South Coast streams produce short term visual impacts. *This impact is evaluated below in Section 5.9.2.3.*

5.9.2.3 Potential Impacts

Visual Impacts in Channels

Certain maintenance activities could reduce the visual quality of riparian corridors that are visible from both private viewpoints (e.g., private roads, backyards of private residences) and public viewpoints (e.g., public parks, roads, trails). However, as described below, the visual impacts on most channels are considered to be minor in magnitude, highly localized, and infrequent.

The District would not remove vegetation from drainage banks under the maintenance program, except as mitigation (e.g., removal of giant reed and replacement with willows). No mature trees are removed. As such, the most substantial alteration of the visual characteristics of a drainage would be avoided.

Brushing and spraying is primarily restricted to the channel bottom. These activities could reduce the visual quality of a channel only under the following circumstances: (1) the vegetation thinning and removal occurs along a reach where the public and residents have a view of the channel interior; and (2) the effect on the vegetation is perceived as adverse. The latter is a key consideration, as many viewers would consider thinning of vegetation to "open" views of the channel bottom where water is present to be a positive visual effect, particularly because the channel bottom would be "framed" with riparian vegetation on the banks.

The following channel maintenance activities could cause more noticeable visual impacts:

- Channel shaping, to the extent that the modifications include alteration of the upper banks. Most channel shaping only occurs on the channel bottom where sandbars and sediments are removed or graded.

- Bank protection construction or repair could cause a local adverse visual impact if "hard" bank protection is installed, such as grouted rip-rap and sackwalls. However, the District rarely has installed such protection, and instead, relies more on regrading slopes to a more stable configuration and revegetating them. These actions replace the visual blight of an eroding bank with a more natural feature.

- Desilting can result in a denuded channel bed, which would cause an adverse visual impact to those who can view the channel bottom. In addition, temporary stockpiles of sediment on the adjacent banks may represent a temporary visual blight to some viewers.

Many actions of the District result in beneficial impacts to the visual settings along drainages. For example, the District removes trash and debris piles from creeks after major runoff events, including downed eucalyptus trees. The District also stabilizes severely eroded banks that threaten public infrastructure, which represents a negative visual attractant. Finally, the overall effect of the District's habitat restoration program is to increase the amount of riparian cover along the maintained drainages, and as such, increase visual qualities.

The potential degradation of the visual qualities of maintenance drainages is considered a significant, but mitigable impact (Class II). Mitigation Measure V-1 would reduce the visual impacts to a less than significant level.

Visual Impacts in Basins

The grading of a pilot channel in the middle of a debris basin would reduce the amount of vegetation in the basin and introduce a man-made visual element. This impact would be minor because it is temporary and affects a very small area. The removal of vegetation and accumulated sediment from debris basins will periodically reduce the amount of riparian vegetation in the basin. This vegetation will return through natural colonization and recovery processes over time, and recreate the pre-maintenance visual features. This impact is similar in nature to the periodic scouring of vegetation due to severe floods. However, this impact would be minor because it is temporary, the basin (i.e., visual setting) is a man-made feature, and public access to the basin and/or nearby public viewing locations is generally prohibited. The potential degradation of the visual qualities of maintaining debris basins is considered an adverse, but not significant impact (Class III).

5.9.3 Mitigation Measures

V-1 - Minimize Visual Impacts in Channels. The District shall minimize brushing in the channel bottom (per Mitigation Measure B-2), incorporate natural channel dimensions during channel reshaping (per Mitigation Measure H-1), restore all temporarily disturbed areas with native riparian trees and shrubs (per Mitigation Measure B-4), and use biotechnical methods with riparian vegetation for bank protection and repair, as feasible (per Mitigation Measure H-5). Implementation of these measures will reduce short- and long-term visual impacts. ***Monitoring and Timing:*** *The District staff will determine the need and scope of maintenance as part of the development of the Annual Maintenance Plan each spring. District personnel will conduct and/or oversee the maintenance work, and ensure that all applicable mitigation measures are implemented. Reporting: A summary of the actual work conducted will be documented in the annual post maintenance report.*

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5.10 PUBLIC HEALTH AND SAFETY

Public Exposure to Herbicides

The use of Rodeo™ for thinning vegetation in channels could adversely affect public health if members of the public are exposed to the herbicide. Information about the adverse health effects of the proposed herbicides and the potential for public exposure is provided below.

Rodeo™ is applied using applicators with precise spray nozzles. District personnel applying the herbicide are trained in the careful application of herbicides and the impacts due to overspraying or drift. Field crews will wear eye protection and gloves as well as protective clothing (i.e., helmets, long sleeved shirts, long pants, and boots) to avoid contact with the herbicides. The District has five employees involved in herbicide handling and application. All are licensed by the State Department of Pesticide Regulation: four are Qualified Applicators and three are also Pest Control Advisors. The Qualified Applicators must attend 10 hours of continuing education each year, and the Pest Control Advisors must attend 20 hours of continuing education each year. The training includes worker safety, public safety, prevention of environmental pollution, and new products. Based on the extensive training and adherence to mandated safety procedures, no adverse impact to the health of workers is anticipated due to the maintenance program.

In 2000, the District staff reviewed its use of herbicide in the maintenance program and determined that herbicide use had decreased approximately 30 percent over the past 12 years as the District strives to minimize the application of herbicide to the extent feasible.

The active ingredient in Aquamaster™ is glyphosate. The following information about the human health effects of glyphosate was summarized from Extoxnet, a Pesticide Information Clearinghouse of Cornell University, Michigan State University, Oregon State University, and UC Davis.

The acute toxicity of glyphosate is low. It may interfere with some enzyme functions in mammals, but symptoms of poisoning are only seen at very high doses. Glyphosate is practically nontoxic by ingestion. Oral LD_{50} values for glyphosate are greater than 10,000 mg/kg in mice, rabbits, and goats. It is practically nontoxic by skin exposure, with reported dermal LD_{50} values of greater than 5000 mg/kg. However, contact with skin or eyes may cause minor irritation. The reported 4-hour rat inhalation LC_{50} values were 5 to 12 mg/L, indicating moderate toxicity via this route.

Glyphosate is poorly absorbed from the digestive tract and is largely excreted unchanged by mammals. At 10 days after treatment, there were only minute amounts in the tissues of rats fed glyphosate for 3 weeks. Cows, chickens, and pigs fed small amounts of glyphosate had undetectable levels (less than 0.05 ppm) in muscle tissue and fat. Levels in milk and eggs were also undetectable (less than 0.025 ppm). Glyphosate has no significant potential to accumulate in animal tissue.

Glyphosate studies lasting up to 2 years have been conducted with rats, dogs, mice, and rabbits, and with few exceptions no effects were observed. For example, in a chronic feeding study with rats, no toxic effects were observed in rats given doses as high as 400 mg/kg/day. Also, no toxic effects were observed in a chronic feeding study with dogs fed up to 500 mg/kg/day, the highest dose tested. Laboratory studies show that glyphosate produces reproductive changes in test animals very rarely and then only at very high doses (over 150 mg/kg/day). It is unlikely that the compound would produce reproductive effects in humans.

Glyphosate does not appear to be teratogenic. In a teratology study with rabbits, no developmental toxicity was observed in the fetuses at the highest dose tested (350 mg/kg/day). Rats given doses up to 175 mg/kg/day on days 6 to 19 of pregnancy had offspring with no teratogenic effects, but other toxic effects were observed in both the mothers and the fetuses. It appears that glyphosate is not mutagenic, nor carcinogenic. Rats given oral doses of up to 400 mg/kg/day did not show any signs of cancer, nor did dogs given oral doses of up to 500 mg/kg/day or mice fed glyphosate at doses of up to 4500 mg/kg/day.

The pathways in which the public could be exposed to Rodeo™ due to maintenance spraying are described below, along with the potential for the harmful amounts or concentrations to be present.

- *Direct Contact.* A crew working along drainage applies herbicides. In general, people are not encountered in drainage channels during the maintenance activities because trails are not present, the creeks are mostly on private property, and it is difficult to travel through the drainages. However, there is a potential to encounter hikers, transients, children, trespassers, residents from adjacent backyards, farm workers, and gardeners. District personnel do not spray when people are in proximity of the maintenance work. The probability of individuals coming into contact with freshly sprayed vegetation is low because: (1) people are generally not in the treated reach; and (2) the herbicide is quickly absorbed into the foliage, and/or dries on the foliage (within hours) and is no longer easily transferred by casual contact. To minimize contact with sprayed vegetation in public parks and near trails, the District posts signs (English and Spanish) at the treated area, which remain for 48 hours.

- *Ingestion of Plants.* It is very unlikely that humans would ingest treated foliage. The target plants are not edible, and are not collected for food.

- *Ingestion by Water.* As described in Section 5.2.2, the application of herbicide to vegetation in drainages could elevate the concentration of glyphosate in the water in the drainage. However, the probability of humans ingesting water from maintained drainage is very low because: (1) there are no permitted diversions from the maintained drainages for public or private water supplies; and (2) the maintained drainages are not used for water recreation such as swimming, snorkeling, or boating because they are so small and deep water is absent. However, there is a potential for non-permitted diversions in remote areas in which a landowner may divert water from a drainage for landscaping or irrigation. Use of this water on their property could result in dermal contact and inadvertent ingestion. The potential for adverse human health effects due to such ingestion is considered highly remote. As described in

Section 5.2.2, the observed levels of glyphosate in the South Coast creeks are very low, and in all cases, below the drinking water standards. Hence, harmful concentrations have not been observed in the drainages where herbicide use has occurred for the past nine years. Even lower concentrations of glyphosate would be expected once creek waters mix with ocean water at the outfalls of creeks. Hence, concentrations that beach swimmers might encounter would be exceedingly low.

Nevertheless, excessive application of herbicide to vegetation on the bottom of a channel or debris basin, including substantial application to the bed itself and open water, could result in increased concentrations in downstream water. This situation would only occur due to poor application methods or operator error. It is expected to occur rarely, if at all, particularly with the incorporation of Mitigation Measure W-2 (see Section 5.2.3) which minimizes the application of herbicides and prevents poor application methods. As such, it is considered an adverse, but not significant impact (Class III).

Bank Erosion

Maintenance activities prevent bank erosion and stabilize eroding banks, thereby reducing loss or private and public property, public infrastructure, and life due to bank loss or localized flooding, and damaging changes in channel alignments. This effect is the desired result of the maintenance program and is considered a beneficial impact (Class IV) to the community.

Flooding

Maintenance activities reduce overbank flooding that could damage private and public property and life. This effect is the desired result of the maintenance program and is considered a beneficial impact (Class IV) to the community.

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6.0 ENVIRONMENTAL SETTING, IMPACTS, & MITIGATION – SANTA YNEZ RIVER PROGRAM

Impacts of the proposed Santa Ynez River Maintenance Program, described in Section 3.0, are evaluated below. This program will be incorporated into the Routine Maintenance Program, but the impacts of the project are addressed separately for sake of convenience to the reader. Much of the following impact analyses are derived from the 1992 Final EIR by the District for an earlier version of the project, a 1997 Environmental Assessment prepared by the District for VAFB for the 1997/98 clearing project, and observations by the District personnel during the three previous clearing events. The latter observations are invaluable because the actual impacts of clearing were observed, thereby providing more insight into predicting future impacts of the same type of project.

The environmental impacts are classified in the manner shown below, identical to the system used in Section 5.0.

> Class I Impacts. Unavoidable significant impacts. For these impacts, the District must issue a "Statement of Overriding Considerations" under Section 15092 (b) of the *CEQA Guidelines* if the project is approved.
>
> Class II Impacts. Significant environmental impacts that can be mitigated. The District must make "findings" under Section 15091(a) of the *CEQA Guidelines* if the project is approved.
>
> Class III Impacts. Other environmental impacts that are potentially adverse but not significant. Mitigation measures are recommended to minimize adverse impacts.
>
> Class IV Impacts. Beneficial impacts.

The recommended mitigation measures are designed to avoid or reduce significant impacts. In addition, many mitigation measures have been developed for adverse, but less than significant impacts (Class III) in order to reduce the magnitude of these impacts to the extent feasible.

6.1 WATER RESOURCES

6.1.1 Existing Conditions

Watershed Conditions

The Santa Ynez River watershed upstream of the Lompoc Valley is over 800 square miles (Figure 6-1). The river extends about 40 miles upstream. The watershed consists mostly of undeveloped brushlands, rangelands, and agricultural fields. There are three dams on the river: Juncal, Gibraltar, and Bradbury dams. Lake Cachuma was created in 1956 with the completion of Bradbury Dam. It is the most significant hydraulic feature in the watershed.

There are several major tributaries to the Santa Ynez River in the Lompoc Valley, including drainages from Purisima/Cebada Canyons, Santa Lucia Canyon, San Miguelito Creek, and La Salle/Sloan Canyons. All of these tributaries have flood control improvements along their lower reaches in the valley.

Runoff in the project reach varies greatly due to the timing and amount of rainfall and watershed conditions. With a saturated watershed, winter rainfall creates runoff in the project reach. Under very dry watershed conditions, light to moderate rainfall would result in very little runoff in the project reach. There is year-round water in the project reach due to the discharge of treated effluent at the Lompoc Regional Wastewater Treatment Plant, which discharges up to a maximum of 3.5 million gallons per day to the river. The watershed is large enough that there is a significant travel time involved in water passing down the river. It can take six to eight hours for a peak in the storm flow to travel from Bradbury Dam to Lompoc.

Flooding Conditions

There have been many major flood events along the Santa Ynez River over the past 100 years, as described below. These floods have had their greatest effects in the Lompoc Valley, causing major property damage. Major floods occurred in 1907, 1914, 1938, and 1969 in which most of the valley was flooded and catastrophic damage was incurred. Moderate floods occurred in 1932, 1941, 1943, 1952, 1978, 1983, and 1995 which caused minor property damage, including flooding of agricultural lands along the project reach. The peak discharges during these floods ranged from 20,000 to 45,000 cfs.

Flooding occurred in agricultural lands along the project reach in March 1991 with a peak discharge of 7,000 cfs, and in February 1992 with a peak discharge of 12,800 cfs. The latter flooded portions of the Lompoc Federal Penitentiary. This overbank flooding occurred with much lower discharges than observed before because the channel in the project reach had developed dense riparian vegetation during the 1986-1991 drought years when there were no floods to scour the river. In January 1992, the District cleared a 25-100 foot wide swath through the project reach, and in December 1992. January 1993, a full 100-foot wide swath was cleared. The 100-foot wide swath was re-established in December 1997/January 1998. Project reach conveyed approximately 20,000 cfs in February 1998 with minor flooding.

Hydrology

The flood frequency data, based on actual flow measurements, was assembled and analyzed using the Corps of Engineers program Flood Frequency Analysis. The statistical results of flow gauging near the project site for 41 years during which Bradbury Dam has been in place is shown in Table 6-1:

TABLE 6-1
PEAK FLOW ESTIMATES AT THE PROJECT REACH

Return Interval	Peak Flow (Computed Probability) cfs
2	2,120
5	9,060
10	19,600
50	78,500
100	129,000
500	358,000

Source: Penfield & Smith (in-house files)

Channel Conditions and Capacity

The river channel in the project reach has only a few impediments to flow. The bridges at Floradale Avenue and 13th Street constrict flows. The only flood protection along the project reach consists of a 2,000-foot long earthen levee about 10 feet in height constructed by a farmer on the south side of the river. The width of the channel varies from 250 to 1,200 feet. There are one or more terraces within the channel, below the grade of the adjacent croplands. The low-flow channel with the live stream varies from a single channel 30 to 50 feet wide, to a broad and braided channel up to 200 feet wide. The depth of the channel from the top of the bank to the invert varies from 12 to 20 feet.

At the present time, the channel contains a mosaic of riparian vegetation and open river wash. The latter consists of the open areas in the center of the channel that have been scoured from past flooding, and/or cleared during 1997/1998 by the District. In addition, there are significant sandbar areas that located above the low flow channel where natural plant colonization is impeded by a dry and rocky substrate. These areas have been incorporated into the maintained swath.

The current channel capacity with a 100-foot wide open swath established in 1998 by the District and from storm flows is estimated to be about 15,000 to 25,000 cfs. The channel capacity prior to the recent clearing was estimated to be about 10,500 cfs.

6.1.2 Potential Impacts

Reduced Channel Resistance and Increased Velocities

Mowing 16 acres of in-channel vegetation would increase velocities of low to moderate flows, as shown in Table 6-2. The increased velocities from the previous mowing have been sufficient to generally maintain an open swath in the channel bottom, thus reducing the amount of future maintenance. The river achieves a new quasi-equilibrium in which sediments are conveyed through the open channel areas, which is maintained by the higher velocities. Sediments are less likely to be deposited or to be scoured under these conditions. Without mowing, the channel would become clogged with vegetation and flow velocities would decrease. Sediments would accumulate due to the lower velocities, and water elevations would rise to flood levels.

Based on the above considerations, the increase in average velocity due to the periodic mowing is not expected to cause increased channel bed scour and downstream sedimentation. Any hydraulic impacts are expected to be negligible due to the small area mowed relative to the entire channel bottom. As such, this impact is considered adverse, but not significant (Class III).

TABLE 6-2
CHANGE IN FLOW VELOCITIES
ALONG THE PROJECT REACH

Return Interval	Average Flow Velocity in the Channel (fps)	
	Pre-clearing Conditions	Current Conditions with 100' Swath
2	1.4	3.6
5	2.1	5.8
10	2.7	8.1
25	2.5	7.5
50	2.7	8.4

Source: Penfield & Smith (in-house files)

It should be noted that no adverse effects has occurred to the channel due to the 1992/93 and 1997/98 mowing events. That is, the channel vegetation recolonized the cleared areas after each mowing event. In addition, the channel vegetation has returned after being removed during the major floods of 1995 and 1998. Finally, there is no evidence that the mowing has caused increased bed scour that has lowered the riverbed or changed the substrate (e.g., increased armoring). These observations confirm that clearing up to 16 acres (within a project reach with over 400 acres of channel area) does not result in significant adverse hydraulic impacts. It is equally important to note that the flood events of 1995 and 1998 removed significantly more vegetation than the previous clearing events. No adverse impacts occur to the channel bed geometry and substrate conditions. Vegetation in the channel returned within several years, demonstrating its resiliency.

Temporary Sedimentation and Turbidity

Mowing activities would generate vegetative debris that is discharged to the riverbed and susceptible to being suspended in winter runoff. This debris could cause temporary increases in suspended solids and turbidity in downstream areas. This impact is not considered significant because the effect would be temporary, similar to natural suspended material in winter flows, and the area of river channel affected would be very small compared to the river channel in the entire watershed.

The District observed runoff downstream of the project reach after the 1992/93 and 1997/98 clearing events to determine if debris from mowing would accumulate in the lagoon at Surf, or cause increased turbidity. Neither of these impacts was observed. Debris generated from the mowing was not noticeable at the lagoon or nearshore waters at Surf. It appears that the amount of vegetative debris from the project reach is negligible compared to the amount of wash load and floatable debris from the entire watershed. Based on this information, any temporary increase in sedimentation and turbidity downstream of the project reach is considered adverse, but not significant (Class III).

Equipment Leaks and Spills

Accidental leakage or spill of fuel and/or oil from the mowing equipment working within the channel can cause discharge of pollutants and degrade water quality. This impact is considered significant, but mitigable (Class II) by applying Mitigation Measure SY-H-1.

Prevent Bank Erosion

Periodic mowing will prevent debris dams and encourage moderate flows to remain in the center of the channel, thereby potentially reducing the frequency of impingement on banks that could cause bank erosion and loss of property and life due to bank loss or localized flooding. This is considered a beneficial impact (Class IV).

Mowing will increase average velocities in the channel, as shown in Table 6-2. The increase in velocities at the low flows is not sufficient to cause increased bank erosion because the increased velocity is maintained within the cleared portion of the channel, while the vegetated banks are exposed to lower velocity flows. The bank vegetation protects the banks from erosion, as well as slows the flows to non-erosive levels.

Channel Capacity and Flooding

The channel capacity of an unmaintained channel along the project reach is estimated at about 10,500 cfs. Mowing to create a 100-foot wide swath will maintain existing channel capacity created by previous mowing, estimated to be 15,000 to 25,000 cfs. The additional capacity will reduce the frequency of overbank flooding in the Lompoc Valley. The reduction in flooding is considered a beneficial impact (Class IV).

The depth of water associated with different flows in an unmaintained and maintained channel along the project reach is estimated in Table 6-3 based on hydrologic modeling. These results indicate that the depth of water would be greater for flows when the channel is not maintained. The greater depth has several adverse effects. One, the greater depth of water increases shear forces on the channel bottom and causes more channel bed scour and vegetation removal. Two, the greater depth of water outside the channel causes more damage to agricultural fields and roads. The reduction in the depth of water by the proposed maintenance is considered a beneficial impact (Class IV).

TABLE 6-3
DEPTH OF WATER IN THE CHANNEL
ALONG THE PROJECT REACH

Return Interval	Average Water Depth in the Channel (feet)	
	Pre-clearing Conditions	Current Conditions
2	6.5	4.5
5	13.6	10.4
10	20.3	18.8
25	24.8	24.9
50	25.3	25.4

Source: Penfield & Smith (in-house files)

6.1.3 Mitigation Measures

SY-H-1 - Prevent Equipment Leaks and Spills. Equipment fueling or maintenance shall not occur within the river channel. Spill containment and clean-up procedures for 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. ***Monitoring and Timing****: The District staff will conduct and/or oversee the maintenance work, and ensure that the appropriate spill avoidance and containment procedures are implemented.* ***Reporting****: Accidental spills or leaks, and the associated clean up, will be documented in a post-maintenance report.*

6.2 WETLANDS, RIPARIAN HABITATS, AND RARE PLANTS

The impacts of the routine maintenance program on wetlands, riparian habitat, and rare plants are described below. Impacts to other biological resources (i.e., fish, aquatic species, wildlife, and sensitive vertebrate species) are addressed in Section 6.3.3.

6.2.1 Existing Conditions

6.2.1.1 Riparian Habitats

There are three categories of habitat types along the river in the project reach: riparian habitats within the channel, riparian habitats outside the channel on an old floodplain terrace, and upland habitats outside the channel and old floodplain terraces. A summary of the vegetation types and approximate acreage is provided below in Table 6-4. Individual vegetation types are described below. An overview of the riparian vegetation along the project reach, including views of previously mowed and recolonized areas, is provided on Figures 8a-c. The distribution of vegetation types is shown on Figures 8a-c.

- **Aquatic Habitat and Freshwater Marsh.** These two habitats occur in the lowest point of the river channel where open water or saturated soils are present year-round. Open water contains aquatic plants such as watercress and duckweed. Freshwater marsh consists of dense stands of cattails and bulrush. Other associated species include common rush, curly dock, speedwell, and rabbitsfoot grass. Mulefat and stinging nettle occur on the perimeter of the marshes.

- **River Wash.** This habitat consists of two elements: (1) sand and gravel bars in the center of the channel that have been scoured by the most recent runoff events, and have not yet been colonized by plants; and (2) seasonally dry, exposed sand and gravel bars that are higher than the low flow channel and are infrequently inundated. Both areas experience high surface temperatures during the summer and fall, and may exhibit an armoring of gravels and coarse sand. Over time, the lower situated areas, which are more moist, become immature willow scrub (see below). The higher and drier areas generally remain sparsely vegetated.

- **Immature Willow Scrub.** The habitat occurs on the sandbars in the center of the channel, adjacent to the open water and marsh areas. It represents an early successional habitat in which willows have colonized river wash areas that were previously scoured. This habitat is subject to flows each winter. This habitat was the predominant type cleared in December 1997/January 1998. There are scattered seedling and saplings of sandbar willow, arroyo willow, and black cottonwood. In areas where flood scouring has not occurred in several years, there are scattered small perennials such as hemlock, poison oak, mule fat, blackberry, elderberry, stinging nettle, ox-tongue, sow thistle, common rush, and brass buttons.

- **Mature Willow Woodland.** The habitat is the dominant one in the project reach. It is located on the sides of the channel on small stream terraces. Soil texture is finer and the moisture content is lower than the main channel. The community is successional to immature willow scrub. The dominant overstory tree is arroyo and red willow, with scattered black cottonwood. The understory is dense with stinging nettle, blackberry, and poison oak.

- **Willow-Cottonwood Woodland.** This habitat contains a mixture of tall willow and cottonwood trees with a closed canopy. It is located on the channel banks, adjacent to the agricultural fields.

- **Disturbed Weedy Riparian Scrub**. This habitat occurs in disturbed areas at low to intermediate elevations on stream terraces, sandy washes, and near the river banks. It includes native mulefat and willow, as well as rapidly growing invasive non-native weeds such as mustard, wild radish, white sweetclover, Italian thistle, cocklebur, and cheeseweed.

- **Coyote Brush Scrub**. This habitat occurs as small isolated patches on the river banks. It is occasionally mixed with isolated willow and cottonwood trees. The understory includes rip-gut brome, Italian thistle, and cheeseweed.

- **Weedy Scrub.** This vegetation occurs outside the river channel, adjacent to the agricultural fields. It is dominated by common non-native weeds such as tree tobacco, white sweetclover, mustard, wild barley, and rip-gut brome.

TABLE 6-4
SUMMARY OF MAJOR HABITAT TYPES IN THE PROJECT REACH

Habitat Type	Approximate Acreage	
	Within the River Channel	Outside the River Channel
Riparian and Wetland* Types		
River Wash or Barren Floodplain	9	
Aquatic Habitat and Freshwater Marsh	33	
Immature Willow Scrub	140	
Mature Willow Woodland	157	6
Willow-Cottonwood Woodland	43	11
Disturbed Weedy Riparian Scrub	36	
Total=	418	17
Upland Types		
Coyote Brush Scrub	5	4
Weedy Scrub		78
Eucalyptus Woodland		22
Total=	5	104

The relative amount of the different vegetation types along the project reach varies little from year to year, except after major flooding events that scour vegetation. However, the river vegetation is remarkably resilient and tends to become re-established in the same overall pattern within several years. This pattern is characterized by meandering, continuous swath of relatively open vegetation where the low to moderate flows are concentrated. The alignment of the low flow channel and this open swath is relatively stable, reflecting the tendency of the river to follow a certain alignment based on hydraulic factors and the dissipation of energy. This open area contains the following habitat types: aquatic habitats (open water), barren river wash (also called open floodplain), immature willow scrub, and freshwater marsh.

In contrast, the sides of the river channel and banks are densely vegetated with mature willow woodland and willow-cottonwood woodland. These areas are not regularly inundated. Outside the riparian woodland zone, there are patches of upland habitats - coyote brush scrub, disturbed weedy scrub, and eucalyptus woodland.

It should be noted that the dense and highly productive riparian habitats along the project reach are due to a combination of natural and man-made factors that have created moist and stable growing conditions, including agricultural runoff, shallow groundwater conditions, and the 3.5 MGD discharge to the river from the Lompoc Wastewater Treatment Plant. Prior to the 1960s and the development of the Lompoc Valley, the riparian habitats were less dense, and reflected more drought tolerant species because water was not present in the river year-round. In addition, with the construction of the dams in the upper watershed over 50 years ago, the frequency of destructive floods has decreased which has allowed the riparian vegetation in the project reach to achieve greater density than under pre-dam conditions when it would be scoured on a more frequent basis.

6.2.1.2 Wetlands

The different definitions of wetlands by the *Corps of Engineers* under Section 404 of the Clean Water Act, Santa Barbara County through its environmental review process, and the California Coastal Commission based on the Coastal Act are described in Section 5.3.1.2. The Corps definition requires the presence of three diagnostic characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology.

The County's guidelines state that the County has adopted the US Fish and Wildlife Service (USFWS) definition of wetlands, which is commonly (but mistakenly) considered a "one parameter" definition, in which only one of three wetland attributes (hydrophytic vegetation, hydric soils, or wetland hydrology) needs to be present in order for an area to be considered a wetland. Hence, the County routinely identifies wetlands by the presence of only one parameter. Wetlands in the Coastal Zone are defined based on guidance in the Coastal Act, and guidance from the California Coastal Commission (CCC). The wetland definition from the CCC regulations requires two parameters for vegetated wetlands (i.e., hydrology and wetland plants). However, the CCC and Santa Barbara County have considered the USFWS definition appropriate for the Coastal Zone, and as such, most wetlands in the Coastal Zone are identified by the dominance of hydrophytic vegetation, independent of considerations of hydric soils or wetland hydrology.

In general, the following habitat types are dominated by hydrophytic plants, and as such, would be considered wetlands under the County's definition of wetlands in non-Coastal Zone areas, and under the CCC's definition for wetlands in the Coastal Zone:

- Aquatic Habitat/Freshwater Marsh
- Immature Willow Scrub
- Willow Woodland
- Willow Cottonwood Woodland

These habitats occur primarily in the river channel where periodic inundation or prolonged soil moisture occurs. As such, wetland hydrology and hydric soils may also be present in these habitats, which would cause them to be considered Corps jurisdictional wetlands.

The "River Wash" habitat does not represent a wetland because it does not contain vegetation. Other habitats such as Coyote Brush Scrub and Disturbed Riparian Weedy Scrub also do not represent wetlands under either the Coastal Act or Corps definitions because they do not have a predominance of wetland species.

6.2.1.3 Sensitive Plant Species

Only one rare plant is known to occur along the project reach – the black-flowered figwort (*Scrophularia atrata*). This perennial occurs in woodlands in the Lompoc Valley. A single population was located by the District near the terminus of the Rodeo-San Pasqual Channel where it meets the Santa Ynez River bank. Additional populations are likely to be present in the woodlands along the margins of the river channel, although none have been observed by the District during the 1992/93 and 1997/98 clearing events.

6.2.2 Potential Impacts

<u>Impacts to Riparian Habitat</u>

The District proposes to periodically mow portions of the river along a 4.5-mile-long reach on an as-needed basis. It is estimated that mowing would be required every 3 to 5 years. The objective is to create a continuous 100-foot wide mowed swath where woody vegetation is absent or in early stages of growth such that debris and sediment will not be trapped.

The District will only mow up to 16 acres, the same amount mowed in January 1997/December 1998. The total acreage of a 100-foot wide swath over the entire project reach is about 54 acres. However, the District is estimating that it will only need to mow about 16 acres, and that the remainder (38 acres) would be clear due to natural scouring (e.g., river wash areas) and/or consist of freshwater marsh areas along the low flow channel which would not obstruct flows. The mowed areas will be connected to existing open areas in the river channel created by natural scouring. The District will only mow 16 acres, even if more acreage is required to create the desired mowed zone along the project reach.

Mowing will occur on elevated sandbars and islands, and outside the low flow channels, open water, and freshwater marsh areas. A 25-foot wide buffer zone will be retained on either side of the low flow channels, around open water and ponds, and around freshwater marshes.

The location of the mowing may vary slightly from time to time. However, it is anticipated that the boundary of the mowed zone will be very similar during each mowing event. The previously mowed swaths currently consist of a mosaic of barren channel and young willow scrub. As such, the mowing would essentially convert young willow scrub with emerging willow saplings to river wash habitat. Mowing would simulate the natural disturbance from flooding in which woody vegetation is periodically removed, and the vegetation is maintained in an early successional stage. However, mowing is not as destructive as flood scour because the mowing does not remove the roots or disturb the substrate.

The conversion of young willow scrub to river wash is a temporary impact, as the mowed areas recover within several years, as witnessed by the District after the 1992/93 and 1997/98 mowing projects. It should also be noted that 16 acres is a very minor fraction of the total in-channel habitats along the project reach (totaling about 182 acres).

As described in Section 3.3.5, the District restored 18 acres of riparian habitat along the lower Santa Ynez River to mitigate for the one-time mowing of 16 acres along the project reach. The current proposal is to repeat this same mowing on an as-needed basis. No further mitigation is deemed necessary because of the following reasons:

- Habitat has been created at another location on the river where it will remain in perpetuity. Hence, there has been no net loss of riparian habitat due to the past and future mowing. Repeated disturbance of the 16 acres along the project reach does not require habitat replacement each time.

- In addition, the disturbance from mowing is temporary and reversible. This habitat recovers between mowing events, and therefore, it has not been permanently removed. As such, permanent replacement of the temporarily disturbed habitat provides more than one-to-one replacement of habitat functions and values.

In light of the above considerations, the periodic and temporary disturbance of up to 16 acres of immature willow scrub along the project reach is considered a significant, but mitigable impact (Class II). This impact has been fully mitigated by the restoration actions of the District initiated in 1999. This mitigation is adopted again as Mitigation Measure SY-B-1. Mitigation Measures SY-B-2 through SY-B-5 will also be observed to ensure that only 16 acres will be mowed, roots will be retained, the substrate will not be excavated, and wetlands will be avoided.

Impacts to Wetlands

Mowing operations and accessing the river channel could inadvertently disturb ponds and wetlands. The latter include freshwater marsh dominated by perennial wetland herbs such as watercress, spikerush, cattails, and bulrushes. This impact is considered significant, but mitigable (Class II) by employing Mitigation Measures B-2 and B-5, which will ensure that wetlands are avoided during the mowing event.

Access Ramp Habitat Impacts

Construction or maintenance of access ramps could temporarily reduce the amount of riparian habitat along the project reach. This impact is considered potentially significant because it could affect high value riparian woodland along the river banks. However, it can be mitigated by Mitigation Measure SY-B-6, which requires temporary restoration of access ramps between uses. As such, the impact would be considered significant, but mitigable (Class II).

Impacts to Sensitive Plants

Accessing the river channel with the crew and mower could potentially affect the regionally rare Black-flowered figwort which occurs in woodland habitat along the river banks. Although this species is not known to be present at any of the existing access points, there is a remote possibility that it may be present in the future. This impact is considered a significant, but mitigable impact (Class II) because the impact could be avoided by conducting pre-mowing biological surveys, as described in Mitigation Measure SY-B-7. If the figwort is located at an access point and cannot be avoided, the District will collect seeds and relocate the population. The District has successfully employed this mitigation measure for routine maintenance along Rodeo-San Pasqual Channel in the Lompoc Valley.

6.2.3 Mitigation Measures

SY-B -1 – Compensatory Habitat Mitigation. The District has already initiated long-term compensatory habitat mitigation for the periodic disturbance of riparian habitats in the river channel, establishing 18 acres of various riparian habitats along the river upstream of the project site at three permanent mitigation sites, per the requirements of the California Department of Fish and Game. The creation, maintenance, and protection of these restoration sites represents full and complete mitigation for removal of up to 16 acres of riparian habitat at any time in the future as part of the project. However, subject to available resources, to further mitigate impacts of future periodic maintenance activities on riparian habitat, the District shall remove giant reed plants by the use of herbicides from the lower Santa Ynez River (Robinson Bridge to 13th Street Bridge) and prevent the colonization of this reach of the river for the life of the maintenance project. Stands of giant reed shall be removed, as needed in each reach maintained, in an on-going and proactive program to protect the lower river from this aggressive species. The District shall consider additional habitat restoration if and when future mitigation opportunities arise along the lower river through efforts by other public agencies and private entities.

Monitoring and Timing: The District staff will document occurrences of giant reed along the lower river at least every three years, independent of the maintenance project, and identify areas to be weeded. District staff will monitor the plant removal. Reporting: A summary of the survey and weeding will be documented in a post- maintenance report.

SY-B-2 - Limits of Disturbance. Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers along the margins of the swaths to be cleared. No more than 16 acres of riparian woodland shall be mowed within the river channel. No clearing shall occur within 25 feet of the primary low-flow channel except when it is necessary to connect cleared swaths from one side of the low flow channel to the other side, or when it is necessary to clear a path across the low-flow channel for temporary equipment and crew access. *Monitoring and Timing: The District staff will conduct and/or oversee the mowing, and ensure that the appropriate limits of mowing are established and observed during the work. Reporting: Limits of mowing will be documented in a post-maintenance report.*

SY-B-3 – Minimize Surface Disturbance. Disturbance of the riverbed shall be avoided to the extent feasible. The riverbed shall not be scraped, pushed, excavated, filled, or otherwise directly manipulated by equipment. Vegetative material cut from the riverbed shall be less than six feet in length. Cut vegetative material shall be allowed to fall in place, and shall not be collected, stockpiled, and/or disposed in a directed and purposeful manner. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, and ensure that the appropriate mowing methods are observed during the work. Reporting: A summary of the mowing will be documented in a post-maintenance report.*

SY-B-4 – Training and Monitoring. Prior to clearing, the District biologist shall conduct a training session with construction personnel to instruct them on areas to avoid and other environmental protection measures. The District biologist shall be present at all times during clearing activities to: ensure that limits of work are observed. Monitoring activities shall be recorded daily. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, including field training and daily mowing activities. Reporting: A summary of the mowing will be documented in a post-maintenance report.*

SY-B-5 – Avoid Ponds and Wetlands. No clearing shall occur within 25 feet of ponds and wetlands. Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers around ponds and wetlands to be avoided. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, and ensure that ponds and wetlands are avoided during the work. Reporting: Avoidance will be documented in a post-maintenance report.*

SY-B-6 – Access Ramp Restoration. After each mowing event, the access ramps shall be seeded with low-growing native grasses, herbs, and shrubs common to the river banks of the project reach to restore habitat after the mowing event, but without dense woody plants that would preclude it use for the next maintenance event. *Monitoring and Timing: The District staff will reseed access ramps after mowing events. Reporting: A summary of the reseeding will be documented in a post-maintenance report.*

SY-B-7 - Pre-Construction Biological Surveys. The District biologist shall conduct a biological survey no later than five (5) days prior to the clearing to confirm the limits of the work area, the flagging of environmentally sensitive areas, and to search for: (1) black-flowered figwort at access points; and (2) the western pond turtles and California red-legged frog, both of which could occur in ponds or portions of the low flow channel. The latter species would be physically captured and removed if they occur in areas where clearing or equipment access must occur. They would not be removed from ponds that are protected from clearing or from the low flow channel that is protected by a 25-foot wide buffer zone. The District biologist has the requisite permits and authorizations to handle and relocate these species from CDFG and USFWS. If the Lompoc figwort is present, the District shall modify access routes, if feasible, to avoid removal or disturbance. If the plant cannot be avoided, the District shall relocate the plant by cultivation or seeding methods to a suitable nearby site. ***Monitoring and Timing****: The District staff will document occurrences of sensitive species in or near the work areas prior to the mowing event. Avoidance and impact minimization measures will developed. District staff will monitor the avoidance as part of the maintenance work.* *Reporting: A summary of the maintenance work and compliance with the avoidance measures will be documented in a post- maintenance report.*

6.3 FISH, AQUATIC SPECIES, AND WILDLIFE

6.3.1 Existing Conditions

6.3.1.1 Fish and Wildlife

There is a great diversity of birds along the project reach because of the varied habitats, which range from open water to dense riparian forests. This diversity is even greater when taking into account the lagoon and coastal marsh at Surf, downstream of the project reach. The riparian woodlands along the banks support many regionally rare breeding species such as the tree swallow, Swainson's thrush, warbling vireo, yellow warbler, Wilson's warbler, and yellow-breasted chat. The lower river, including portions of the project reach, also attract spring and fall migrants such as thrushes, kinglets, and warblers. The greatest bird diversity is the mosaic of dense willow woodland, river wash, open water, and freshwater marsh. The edges created between these habitats provide foraging and perching sites. The large and tall cottonwood and eucalyptus trees on the river banks provide nesting and perching sites for raptors and cavity-nesting birds. The pockets of freshwater marsh in the main channel are large enough to provide breeding habitat for the pied-billed grebe, mallard, cinnamon teal, ruddy duck, Virginia rail, American coot, common yellowthroat, and red-winged blackbird. The effluent from the Lompoc Wastewater Treatment Plant is responsible for maintaining water levels in the summer and drought periods that support these water associated birds. Areas of the river with dense, tightly-packed thickets of willows are less attractive for birds.

The project reach provides habitat for many common amphibians, reptiles, and mammals. The diversity and abundance of wildlife in the project reach is enhanced because the river is very wide with substantial vegetative cover, the river is surrounded by open space and upland habitat on the north side, and there are few human disturbances other than agricultural activities on the south side. Common amphibians and reptiles observed by the District along the project reach include western rattlesnake, western toad, skink, ensatina, Pacific treefrog, and western fence lizard. Common mammals include mule deer, feral pig, raccoon, beaver, coyote, opossum, and striped skunk.

Several native and non-native fish occur in the lower Santa Ynez River. The most notable is the endangered southern steelhead trout, which migrates through the project reach, as described below. Resident fish include arroyo chub, mosquitofish, prickly sculpin, armored three-spine stickleback, and carp.

6.3.1.2 Sensitive Aquatic and Fish Species

Several sensitive aquatic and fish species occur in the project reach, as described below. Background information on these species, including life histories and habitat requirements, is provided in Section 5.4.1. Two other sensitive species occur in the North County, but are not present along or near the project reach: California tiger salamander and the western spadefoot toad. In addition, suitable habitat for the southwestern arroyo toad is not present along the lower Santa Ynez River, including the project reach. There are no records of this species in the County outside of the upper Santa Ynez and Sisquoc rivers.

Tidewater Goby

The tidewater goby has been listed by the U.S. Fish and Wildlife Service (USFWS) as an endangered species. It is a small fish that inhabits brackish water lagoons of California. A large population occurs in the lagoon at the mouth of the Santa Ynez River on VAFB, two miles downstream of the 13th Street bridge. Tidewater gobies are bottom dwellers and are typically found at depths of less than three feet. In streams they inhabit low-velocity habitats. The tidewater goby is typically found in the upper ends of coastal lagoons where salinities are less than 10 parts per thousand (ppt). However, they can also occur in lower and higher salinity conditions. Tidewater gobies utilize the project reach, although the bulk of the population is located in the lagoon.

Southern Steelhead Trout

The southern steelhead populations that occur between Los Angeles County and northern Santa Barbara County constitute the Southern California Evolutionarily Significant Unit (ESU), which has been designated an endangered species by the National Marine Fisheries Service (NMFS). The Santa Ynez River supports one of the largest populations in the ESU. Adult steelhead begin upstream migration when the sandbar at Surf has been opened and there are sufficient flows in the river to attract them. Steelhead may migrate along the mainstem of the river and spawn in Salispuedes Creek and Hilton Creek, approximately 8 and 40 miles upstream of the project reach. Rearing is also restricted to these tributaries due to flow and temperature limitations along the mainstem during the summer months.

The steelhead population along the river has been studied intensively since 1994 by a multi-agency program to conserve the species, led by the Cachuma Operations and Maintenance Board and Bureau of Reclamation. Based on the years of study to date, suitable spawning and rearing habitat is absent from the Lompoc Valley. Furthermore, rearing in the lagoon at the mouth of the river has not been observed. Hence, the project reach is only used as a migration corridor for steelhead during the winter adult upmigration for spawning (December through May) and emigration by adults and juveniles (February through May). NMFS has designated critical habitat for the steelhead along the Santa Ynez River from the ocean to Bradbury Dam.

Southwestern Pond Turtle

The southwestern pond turtle is a State Species of Special Concern that lives primarily in freshwater rivers, streams, lakes, and ponds. They may live in intermittent streams where permanent pools exist. The species requires slowly moving water and appropriate basking sites such as logs, banks, or other suitable areas above water level. The pond turtle occurs along the Santa Ynez River in the long pool below Bradbury Dam. It was observed a various locations along the project reach in 1990 near cattail stands and beaver ponds.

California Red-legged Frog

The California red-legged frog is listed as an endangered species by the USFWS. It is confined strictly to aquatic habitats, such as creeks, streams, and ponds, and occurs primarily in areas having pools two to three feet deep with dense emergent or shoreline vegetation. Although they may move between breeding pools and foraging areas, they rarely leave the dense cover of the riparian corridor. A small population was recorded in 1990 downstream of the Floradale Bridge, but has not be observed since. An individual was observed at the 13th Street bridge in 1995, and along Santa Lucia Creek upstream of the project area. It is assumed that the red-legged frog occurs in small numbers throughout the project reach, and that the number and location of frogs will vary greatly from year to year.

Two-Striped Garter Snake

The two-striped garter snake is a State Species of Special Concern. It is a highly aquatic species typically found near slowly moving creeks and streams, ponds, and coastal lagoons where water is permanent and tadpoles, frogs, and small fish are present as a prey base. This species has not been observed in the Santa Ynez River, but suitable habitat is present in the project reach.

6.3.1.3 Sensitive Bird Species

A wide variety of sensitive bird species occur along and immediately downstream of the project reach, as described below. Background information on these species, including life histories and habitat requirements, is provided in Section 5.4.1.

Endangered Species

Southwestern Willow Flycatcher

The southwestern willow flycatcher (*Empidonax traillii extimus*) is a state and federal endangered species. It is a small bird that occurs in riparian habitats along rivers and streams where are dense thickets of trees and shrubs. Willow flycatchers nest near surface water or saturated soil. The southwestern willow flycatcher builds nests and lays eggs in late May and early June and fledges young in early to mid-July. The southwestern willow flycatcher is an insectivore. It forages within and above dense riparian vegetation, taking insects on the wing or gleaning them from foliage. It also forages in areas adjacent to nest sites, which may be more open.

Appropriate habitat for the willow flycatcher occurs along the entire project reach wherever there is a mosaic of dense willow woodland and openings (e.g., river wash or immature willow scrub) near open water (e.g., river channel, off-channel pond, or beaver pond). A summary of the flycatcher surveys conducted in June 2000 for the EIR is provided below.

Although the willow flycatcher historically bred in the County, there were no records of this species as a breeder between 1939 and 1986 when it was discovered in the Buellton area.

Subsequently, several populations were discovered between Lompoc and the Pacific Ocean and at two additional locations west of Buellton, as listed below in Table 6-5 based on surveys by UCSB biologists for research purposes, and on surveys conducted in 2000 by URS Corporation for this EIR.

TABLE 6-5
LOCATIONS OF WILLOW FLYCATCHER BREEDING OR SUSPECTED BREEDING SITES[1]

Location	Years
Buellton site (1.5–3.0 km downstream of US 101)	1986–2000[2]
Lompoc west to the Pacific Ocean[3]	1991–2000
Lompoc Trmt Plant to Union Sugar Ave. (project reach)	1991–93
13th St. bridge to VAFB	1991–99
Waterfowl Management Ponds, VAFB	1996–2000
Miguelito Wetland (2.1 km from the ocean)	1992–94
Santa Rosa site (8.2–10.7 km downstream of US 101)	1994–2000
Yvonne site (5.0–5.7 km downstream of US 101)	1996–2000[4]
Salsipuedes site (3.7 km upstream from 246 bridge, Lompoc)	1996
Ballard site (1.3 km upstream of Buellton)	2000

[1]Distances are measured along the river channel. The first year listed is the first year in which birds were recorded after 20 June and thus were undoubtedly *E. t. extimus*, according to southwestern willow flycatcher survey protocol (Sogge et al. 1997).
[2]Information for the years 1986–94 cites the location "general Buellton region" and does not mention the specific location.
[3]This includes widely scattered locations rather than a single colony, with as few as one bird detected in a year.
[4]Much of the habitat at this site was destroyed during the storms of 1998. In recent years, sightings during breeding season have been between 5.5 and 5.7 km downstream of US 101.
SOURCES: UCSB Museum of Systematics and Ecology; Collins and Fahy (1995: 40–42).

The number of breeding birds detected during the various surveys range from 26 to 39. The Santa Ynez River is the only known breeding site for this bird in the county, and appears to represent an important population for this species in general.

Water is a crucial element of southwestern willow flycatcher habitat on the Santa Ynez River, as elsewhere. Typically, the flycatchers choose sites in dense riparian next to the river channel, as with some territories at the Buellton site, the Yvonne site, and the uppermost portion of the Santa Rosa site. Flycatchers breeding on the river often choose sites with standing water or moist surface soils away from the main channel. Thus split channels and low-lying areas at the base of the riparian but away from the main channel can provide good habitat. Another interesting element of southwestern willow flycatcher habitat on the Santa Ynez River is the bird's frequent choice of sites near beaver dams, as at the Buellton site and the Ballard site in 2000. The project reach provided important habitat in the 1986-91 drought due to the presence of beaver, agricultural run-off, and inflow from the Lompoc Wastewater Treatment Plant.

Most of the project reach provides suitable habitat for the willow flycatcher, although breeding has not been observed along the project reach since 1993 when several pairs were observed above and below the Floradale Avenue bridge. Excellent habitat for the flycatcher in the project reach begins 1,000 feet upstream of the Floradale Avenue bridge and extends to a point 800 feet below the bridge. Breeding birds were present at this location in 1991-1993, but have since not been recorded. During the June 2000 surveys for the EIR, many other riparian breeders were abundant in this reach including green heron, Allen's hummingbird, Nuttall's woodpeckers, Pacific-slope flycatchers, warbling vireos, tree swallows, chestnut-backed chickadees, Swainson's thrushes, yellow warblers, Wilson's warblers, and purple finches. Only one brown-headed cowbird was present despite the large numbers of potential hosts.

The next approximately 1.5 miles downstream has discontinuous areas of suitable habitat for willow flycatchers. This area also supported willow flycatchers during 1991–93. The area around the channel is more open than upstream, and the channel meanders back and forth across the river bottom. Broad bands of mature willows line both banks nearly the entire way. The area had high numbers of riparian obligates such as Swainson's thrushes, chestnut-backed chickadees, yellow warblers, and Wilson's warblers. Near Douglas Avenue, the riparian vegetation becomes less extensive and the river bottom opens up. This area had low numbers of such riparian obligates as yellow warbler and chestnut-backed chickadee, especially compared with just upstream.

Near the confluence with Rodeo-San Pasqual Channel, the habitat is less productive because the willow woodland on the banks is narrow and constrained by steep banks. Habitat condition improves about 0.5 miles upstream of Union Sugar Ave and continues to 13th Street Bridge with dense mature willow woodland on the banks and an open rive bottom. High numbers of riparian-breeding birds were observed in this reach in 2000: warbling vireos, tree swallows, chestnut-backed chickadees, Swainson's thrushes, yellow warblers, Wilson's warblers, as well as mallards, green herons, and black-crowned night-herons. The best willow flycatcher habitat may occur upstream and near 13th Street bridge. Downstream of the bridge on VAFB, excellent flycatcher habitat occurs. An isolated patch of willows is present at the Miguelito Wetlands. This patch of willows and the willow woodland on the river between 13th St. and the waterfowl management ponds have supported willow flycatchers in breeding season in the past.

Least Bell's Vireo

The least Bell's vireo is a state and federally endangered species that is a summer breeder in riparian woodlands along major drainages of southern California. They breed in the upper Santa Ynez River (above Gibraltar Reservoir) and lower Mono Creek, and have been recorded during breeding season on the lower Santa Ynez. There has been no confirmed nesting activity on the lower river. Nesting evidence exists along the river for the Solvang area until at least the late 1940s. Bell's vireos once nested in coastal locations in Santa Barbara County, suggesting there may be potential for this species to use coastal areas as its population expands. Suitable habitat is present along the river between Buellton and Lompoc. Portions of the project reach downstream of Rodeo-San Pasqual Channel contain low dense willow scrub suitable for this species. It was not detected during the 2000 surveys along the project reach.

<u>*Other Species*</u>

Other birds that are considered regionally rare, or Species of Special Concern by CDFG, that may use the riparian habitats of the project reach are listed below:

- *Tri-colored blackbird.* This resident species occurs in cattail and bulrush marshes along the Santa Ynez River, within and downstream of the project reach. A large population is present in the waterfowl ponds on VAFB.

- *Cooper's hawk.* This resident raptor uses mature oak and riparian woodlands in the Lompoc Valley, and is expected to nest along the lower Santa Ynez River, including the project reach. The resident populations are augmented in the fall and spring with migrants.

- *Warbling vireo, yellow warbler, Wilson's warbler, yellow-breasted chat, and Swainson's thrush.* These obligate riparian breeders use the dense willow woodland along the project reach.

The freshwater marsh, saltmarsh, lagoon, beach, and nearshore waters at the mouth of the Santa Ynez support various endangered or otherwise sensitive birds species, including the western snowy plover, California least tern, brown pelican, savannah sparrow, and western least bittern. None of these species would utilize the habitats along the project reach.

6.3.2 Potential Impacts

<u>General Impacts to Wildlife</u>

The District proposes to periodically mow up to 16 acres of immature willow scrub along a 4.5-mile-long reach about every 3 to 5 years. Mowing will occur on elevated sandbars and islands, and outside the low flow channels, open water, and freshwater marsh areas. A 25-foot wide buffer zone will be retained on either side of the low flow channels, around open water and ponds, and around freshwater marshes, except where necessary to connect mowed swaths. Mowing would essentially convert young willow scrub with emerging willow saplings to river wash habitat. Mowing would simulate the natural disturbance from flooding in which woody vegetation is periodically removed, and the vegetation is maintained in an early successional stage. The disturbance to the habitat would be temporary and reversible.

Mowing will temporarily displace wildlife that utilize immature willow scrub. Between mowing events, the habitat would recover and be recolonized by wildlife. The temporary displacement of wildlife and reduction in the quality of the affected areas is considered a potentially significant impact. However, this impact can be mitigated (Class II) by the following measures: restoration of

18 acres of riparian habitat along the lower Santa Ynez River (Mitigation Measures SY-B-1) which provides replacement habitat; measures to ensure that no more that 16 acres is affected at any time (Mitigation Measure SY-B-2); and, a measure to avoid more valuable wildlife habitat - wetlands (Mitigation Measure SY-B-5). It should be noted that mowing would occur in October through November (Mitigation Measure SY-B-8), a period of time when wildlife activity is low and breeding has ended.

Displace or Disturb Sensitive Wildlife

Mowing operations and accessing the river channel could displace or disturb the California red-legged frog and the southwestern pond turtle. These species are residents in ponds and wetland areas of the river channel. Impacts to these species would be avoided by observing the mowing limits (Mitigation Measure SY-B-2); avoiding all ponds and wetlands where the frog and turtle could be located (Mitigation Measure SY-B-5); conducting pre-construction surveys (Mitigation Measure SY-B-7) to identify potential conflicts; monitoring all work near sensitive species locations (Mitigation Measure SY-B-8); and temporarily relocating species, if necessary (Mitigation Measure SY-B-7).

The maintenance work would occur in the fall when the southwestern willow flycatcher, least Bell's vireo, and various regionally rare riparian breeding birds are absent (see Mitigation Measure SY-B-9). Periodic mowing of immature willow scrub would not adversely affect the quality of the habitat for these species in subsequent years because the mowing mimics natural disturbance process and it maintains a higher structural diversity in the channel that would not otherwise be present. Furthermore, the immature willow woodland does not represent nesting habitat for these species. The project reach continues to exhibit very high avian diversity and abundance, including the presence of the endangered willow flycatcher, despite three clearing events and two flood events since 1992. The resilience of the habitats in the project reach is clearly demonstrated by these observations. Mowing has not decreased the overall diversity and abundance of avifauna, nor has it resulted in the decrease of sensitive wildlife.

Disturbance to Steelhead

Mowing operations and accessing the river channel could displace or disturb steelhead if they are migrating through the project reach. The southern steelhead migrates upstream from December 1st through March 1st. Smolts migrate downstream to the lagoon or ocean during the period February through May. The mowing will be restricted to the period September through November, and as such, will avoid impacts to migrating steelhead (Mitigation Measure SY-B-9).

Facilitate Increased ORV Access

The access ramps to the river could be used by unauthorized ORV users and trespassers, which could adversely affect sensitive species in the river channel. This impact is considered remote, as the land on the south side of the river where the access points are located is private property and trespassing is prohibited. The District has not observed ORV use of the lower river, nor use of its access ramps by others. Hence, this impact is considered adverse, but not significant (Class III).

Nevertheless, the District will implement Mitigation Measure SY-B-10 to discourage use of the ramps for unauthorized access to the river.

Equipment Leaks and Spills

Accidental leakage or spill of fuel and/or oil from the mowing equipment working within the channel can cause discharge of pollutants and degrade water quality, and potentially affect sensitive species such as the red-legged frog. This impact is considered significant, but mitigable (Class II) by applying Mitigation Measure H-1.

6.3.3 Mitigation Measures

Mitigation Measure SY-H-1 is repeated from Section 6.1.3, and Mitigation Measures SY-B-1 through SY-B-7 are repeated from 6.2.3.

SY-H-1 - Prevent Equipment Leaks and Spills. Equipment fueling or maintenance shall not occur within the river channel. Spill containment and clean-up procedures for 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. ***Monitoring and Timing****: The District staff will conduct and/or oversee the maintenance work, and ensure that the appropriate spill avoidance and containment procedures are implemented.* ***Reporting****: Accidental spills or leaks, and the associated clean up, will be documented in a post-maintenance report.*

SY-B -1 – Compensatory Habitat Mitigation. The District has already initiated long-term compensatory habitat mitigation for the periodic disturbance of riparian habitats in the river channel, establishing 18 acres of various riparian habitats along the river upstream of the project site at three permanent mitigation sites, per the requirements of the California Department of Fish and Game. The creation, maintenance, and protection of these restoration sites represents full and complete mitigation for removal of up to 16 acres of riparian habitat at any time in the future as part of the project. However, subject to available resources, to further mitigate impacts of future periodic maintenance activities on riparian habitat, the District shall remove giant reed plants by the use of herbicides from the lower Santa Ynez River (Robinson Bridge to 13th Street Bridge) and prevent the colonization of this reach of the river for the life of the maintenance project. Stands of giant reed shall be removed, as needed in each reach maintained, in an on-going and proactive program to protect the lower river from this aggressive species. ***Monitoring and Timing:*** *The District staff will document occurrences of giant reed along the lower river at least every three years, independent of the maintenance project, and identify areas to be weeded. District staff will monitor the plant removal.* ***Reporting:*** *A summary of the survey and weeding will be documented in a post- maintenance report.*

SY-B-2 - Limits of Disturbance. Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers along the margins of the swaths to be cleared. No more than 16 acres of riparian woodland shall be mowed within the river channel. No clearing shall occur within 25 feet of the primary low-flow channel except when it is necessary to connect cleared swaths from one side of the low flow channel to the other side, or when it is necessary to clear a path across the low-flow channel for temporary equipment and crew access. *Monitoring and Timing: The District staff will conduct and/or oversee the mowing, and ensure that the appropriate limits of mowing are established and observed during the work. Reporting: Limits of mowing will be documented in a post-maintenance report.*

*SY-B-3 – **Minimize Surface Disturbance.*** Disturbance of the riverbed shall be avoided to the extent feasible. The riverbed shall not be scraped, pushed, excavated, filled, or otherwise directly manipulated by equipment. Vegetative material cut from the riverbed shall be less than six feet in length. Cut vegetative material shall be allowed to fall in place, and shall not be collected, stockpiled, and/or disposed in a directed and purposeful manner. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, and ensure that the appropriate mowing methods are observed during the work. Reporting: A summary of the mowing will be documented in a post-maintenance report.*

*SY-B-4 – **Training and Monitoring.*** Prior to clearing, the District biologist shall conduct a training session with construction personnel to instruct them on areas to avoid and other environmental protection measures. The District biologist shall be present at all times during clearing activities to: ensure that limits of work are observed. Monitoring activities shall be recorded daily. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, including field training and daily mowing activities. Reporting: A summary of the mowing will be documented in a post-maintenance report.*

*SY-B-5 – **Avoid Ponds and Wetlands.*** No clearing shall occur within 25 feet of ponds and wetlands. Prior to clearing, District personnel shall place flagging, stakes, or other readily visible markers around ponds and wetlands to be avoided. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, and ensure that ponds and wetlands are avoided during the work. Reporting: Avoidance will be documented in a post-maintenance report.*

*SY-B-6 – **Access Ramp Restoration.*** After each mowing event, the access ramps shall be seeded with low-growing native grasses, herbs, and shrubs common to the river banks of the project reach to restore habitat after the mowing event, but without dense woody plants that would preclude its use for the next maintenance event. *Monitoring and Timing: The District staff will reseed access ramps after mowing events. Reporting: A summary of the reseeding will be documented in a post-maintenance report.*

*SY-B-7 - **Pre-Construction Biological Surveys.*** The District biologist shall conduct a biological survey no later than five (5) days prior to the clearing to confirm the limits of the work area, the flagging of environmentally sensitive areas, and to search for: (1) Lompoc figwort at access points; and (2) the western pond turtles and California red-legged frog, both of which could occur in ponds or portions of the low flow channel. The latter species would be physically captured and removed if they occur in areas where clearing or equipment access must occur. They would not be removed from ponds that are protected from clearing or from the low flow channel that is protected by a 25-foot wide buffer zone. The District biologist has the requisite permits and authorizations to handle and relocate these species from CDFG and USFWS. If the Lompoc figwort is present, the District shall modify access routes, if feasible, to avoid removal or disturbance. If the plant cannot be avoided, the District shall relocate the plant by cultivation or seeding methods to a suitable nearby site. *Monitoring and Timing: The District staff will document occurrences of sensitive species in or near the work areas prior to the mowing event. Avoidance and impact minimization measures will developed. District staff will monitor the avoidance as part of the maintenance work. Reporting: A summary of the maintenance work and compliance with the avoidance measures will be documented in a post- maintenance report.*

SY-B-8 - Monitor for Sensitive Species. The District biologist shall monitor clearing events located at or near sensitive species locations, as determined during the pre-construction survey. The objective of the monitoring is to ensure that key habitat features or species locations are avoided, and to relocate species if they are unexpectedly encountered in a work area. The District biologist shall examine ponds and channels near the work areas for the presence of pond turtles and/or red-legged frogs; and move these species if it appears that they may be indirectly affected by the clearing activities. Results of the monitoring shall be documented in a post-maintenance report. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, and monitor to ensure that sensitive species are avoided during the mowing. Reporting: Avoidance will be documented in a post-maintenance report.*

SY-B-9 – Seasonal Avoidance. Clearing shall occur during the months of September 1st to December 1st, to prevent conflicts with the riparian breeding birds, southwestern willow flycatcher, least Bell's vireo, and southern steelhead. *Monitoring and Timing: The District staff will develop mowing plans prior to the work, and specify that appropriate work period. Reporting: Compliance with the seasonal restrictions will be documented in a post-maintenance report.*

SY-B-10 – Barriers on Access Ramps. Access to the riverbed shall occur from existing access points and ramps, used in previous clearing events. All access ramps to the riverbed shall be blocked after use with a barrier to prevent unauthorized entry, particularly off road vehicles and motorcycles. *Monitoring and Timing: The District staff will conduct and/or oversee the maintenance work, and ensure that previously used access points are used again, and that barriers are placed at then end of the mowing. Reporting: Compliance with these measures will be documented in a post-maintenance report.*

6.4 AIR QUALITY

6.4.1 Existing Conditions

Background information about air quality conditions, compliance with the state and federal air quality standards, and status of the County's Clean Air Plan are provided in Section 5.5.1.

6.4.2 Potential Impacts

The proposed clearing would be accomplished with a diesel-powered mower. A small portion of the clearing would be accomplished by hand crews using chain saws. It is anticipated that a typical clearing event would require about 10 days. Clearing is anticipated to occur every three to five years.

The mower and chain saws will generate reactive organic compounds (ROC), nitrogen oxides (NOx), and particulate matter (PM_{10}) emissions from the internal combustion engines. In addition, the action of mowing the vegetation will create PM_{10} emissions. Fugitive dust will not be generated by the mowing action because mower will not excavate or grade any soils, and it will travel over the riverbed which is moist. The total emissions for a typical mowing project are estimated as follows using EPA approved emissions factors: 0.8 pounds of PM_{10}, 80 pounds of NOx, and 16 pounds of ROC.

No thresholds of significance for evaluating maintenance-related emissions have been established by the County of Santa Barbara Air Pollution Control District (APCD). Construction emissions are similar to maintenance related emissions because they are short-term. However, the APCD has not established any short-term thresholds for NOx, PM_{10}, and ROC emissions for construction equipment. Construction-related emissions for the entire county have been estimated by the APCD and included in the county-wide inventory of emissions in the Clean Air Plan (Santa Barbara County APCD, 1998). They are generally considered insignificant because they are short-term in nature and comprise a very small fraction of the total county-wide emissions from all point, mobile, and area sources. Maintenance related emissions would be similar in nature, and as such, would be generally considered less than significant within the context of the county-wide emissions. Based on these considerations, the impacts of short-term maintenance emissions every 3 to 5 years on local and regional air quality conditions are considered adverse, but not significant (Class III).

Furthermore, the proposed maintenance project is considered consistent with the approved Clean Air Plan because the emissions would be very small, and similar to construction-related emissions (which are included in the CAP emissions inventory). In addition, the project will not induce growth and cause any new significant long-term traffic emissions.

6.4.3 Mitigation Measures

The following measures are based on standard equipment and dust control measures recommended by the Santa Barbara County APCD (1998). Implementation of appropriate measures from this list will reduce air quality impacts to less than significant levels. Implementation of these measures will be monitored and reported by District personnel during regular inspections of the site during construction.

AQ-1 To minimize NO_x emissions, the following measures shall be implemented for each piece of heavy-duty diesel construction equipment:

- The engine size of construction equipment shall be the minimum practical size.
- Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated clean diesel engines) should be utilized wherever feasible.
- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest number is operating at any one time.
- Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or precombustion chamber engines.
- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
- Diesel catalytic converters shall be installed, if available.
- Diesel powered equipment should be replaced by electrical equipment, whenever feasible

Monitoring and Timing: District personnel will conduct and/or oversee the maintenance work, and ensure that the above measures are being implemented. Reporting: A summary of maintenance work, including a statement on compliance with the above measures, will be documented in a post maintenance report.

6.5 NOISE

6.5.1 Existing Conditions

Potentially sensitive noise receptors are located within 0.5 miles of the project reach, consisting of the Federal Penitentiary north of the river, and several residences and farm laborer houses south of the river. These receptors are not considered typical noise sensitive receptors because they are used to heavy farm equipment noise, including the penitentiary which has a farming operation next to the river. No church, school, hospital, or rest home is located within 0.5 mile of the project reach.

The project reach is located in a rural environment where background noise levels are generally low, except for farm equipment and overhead aircraft associated with VAFB. Most of the roads near the project are private farm roads, or restricted roads on VAFB and the Federal Penitentiary. Hence, traffic volumes are low, resulting in low background traffic noise.

6.5.2 Potential Impacts

A noise attenuation model was used to evaluate noise impacts from the mowing operations. Noise levels were calculated at 100-foot intervals from the mower to 1000 feet from the river's edge, and at 200 foot intervals to a distance of 0.5 mile. The mower was assumed to be operating concurrent with 10 chainsaws at full load. The mower was assumed to generate 85 dBA at 50 feet from the work site. No sound reduction due to screening by the river banks or vegetation was applied in the model. The channel banks would be substantial barriers because the mowing activities would occur 10- 20 feet below the grade of the adjacent uplands. Hence, the predicted noise levels are likely to be much greater than actual levels.

Maximum predicted noise levels from the work area diminish from 96 dBA at 50 feet to 53 dBA at 0.5 mile. The nearest noise receptor along the project reach is a group of several unoccupied buildings on the Penitentiary at 700 feet from the river, which could experience a maximum noise level of 65 dBA when the mower is near the prison.

As described in Section 5.6, Santa Barbara County's threshold for significant noise impacts is noise levels in excess of 65 dB(A) CNEL at noise sensitive receptors, or when ambient noise levels affecting noise-sensitive receptors increase substantially, but remain less than 65 dB(A) CNEL. Noise sensitive receptors are absent from the project reach. In addition, noise levels at the nearest receptors would be less than 65 dBA. Hence, the temporary increase in ambient noise levels along the project reach during mowing would be considered an adverse, but not significant impacts (Class III). It should be noted that noise levels in adjacent farmlands during the 1992/93 and 1997/98 mowing events were often imperceptible due to the screening effects of vegetation, and were not considered a nuisance to the public.

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6.6 CULTURAL RESOURCES

6.6.1 Existing Conditions

Background information on the ethnography, archeology, and history of the Lompoc Valley based on cultural resources studies by Berry (1988, 1990) is available to the interested reader in the 1992 Final EIR by the District for the Santa Ynez River Channel Maintenance Program (on file at the District office). An archival search for recorded pre-historic and historic resources along the project reach was conducted for the 1992 Final EIR. In addition, an archeological field survey was conducted on each side of the project reach. The archival search indicated two archeological sites were located along the sides of the project reach, and that five other sites are located within 0.25 miles of the river. No new archeological sites were discovered during the 1992 field survey. One previously recorded site was re-located. The other previously recorded site was re-located, but did not exhibit any cultural material. Both sites are located on the north side of the river on uplands outside the river channel where no maintenance activities would be performed.

6.6.2 Potential Impacts

The proposed mowing would not affect the known archeological sites located on the north bank on VAFB. The probability of encountering a new buried archeological site is considered very remote based on the number of studies and surveys in the Lompoc Valley and along the river. Furthermore, the proposed mowing would not excavate or grade upland soils. The District would use the ramps previously established along the south bank, as described in Section 3.3.2 where no archeological sites are present.

6.6.3 Mitigation Measures

No mitigation measures are required because no impact to cultural resources is anticipated.

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6.7 VISUAL IMPACTS

6.7.1 Existing Conditions

The project reach contains dense willow woodland on the sides of the river channel. There is a complex mosaic of woodland, scrub, and river wash in the center of the channel. The vegetation within the channel is structurally diverse with different densities, textures, heights, and colors. This visual diversity of structure is only visible to a viewer in close proximity. From a distance, the visual effect of the river channel is one of a dense, solid mass of green vegetation that contrasts sharply with the adjacent uniform agricultural fields. In addition, the center of the channel where there is more vegetative diversity, is not visible to viewers on the adjacent farmlands because they are obscured by the mature woodland on the river banks,

There are limited opportunities for the public to view the river channel. The only viewing locations for the public are listed below:

- Penitentiary workers and contractors traveling across the Floradale Avenue Bridge. Pedestrians are not allowed.
- VAFB personnel crossing the 13th Street bridge or traveling along service roads parallel to the river on the north side
- Farm workers in the field south of the river

No sensitive public viewpoints are located near the project reach. There are no public parks or informal gathering spots along the river. Public access to the project reach is restricted because there is private property along the south side and federal property on the north side. As such, the primary viewpoints for the public are from vehicles traveling along Floradale Avenue or 13th Street. Such views would be brief and often ignored, as the travelers are almost exclusively workers.

In summary, the river channel has high visual qualities, but the opportunity for public view is negligible.

6.7.2 Potential Impacts

The mowing activities and cleared swaths would not be visible to most public viewers because the activities would occur below the river bank, out of view except for traffic across Floradale Avenue and 13th Street bridges. In addition, the clearing would occur in a patchy discontinuous manner, connecting existing open areas in the channel. Hence, it would be difficult to distinguish between natural open river wash and areas cleared by the mowing. It should also be noted that the affected viewers are not present along the project reach for recreational activities or to take advantage of its visual amenities. Finally, the visual effects of the clearing would be minor compared to the clearing effects of periodic major storms, such as in 1995 when significant portions of the river channel vegetation was removed. Based on these considerations, the visual effects of periodic mowing would be considered an adverse, but not significant impact (Class III).

6.7.3 Mitigation Measures

No mitigation measures are required because no significant visual impact is anticipated.

7.0 ALTERNATIVES

7.1 CEQA REQUIREMENTS

The identification and analysis of alternatives to the proposed project are discussed below pursuant to the following requirements for an Environmental Impact Report under the CEQA guidelines:

- 15126.6(a) states that "*An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*"

- 15126.6 (b) states that "*...the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.*"

- 15126.6(c) states "*The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects.*"

In the following sections, alternatives to the proposed project are described and their impacts evaluated relative to the impacts of the proposed maintenance program. Three types of alternatives are identified:

- No project alternative – as required under CEQA

- Alternatives that avoid or substantially reduce the magnitude of one or more significant and unmitigable impacts (Class I)

- Alternatives designed to reduce any significant, but mitigable impacts (Class II). Mitigation measures have been identified to reduce these impacts to less than significant levels. However, alternative approaches to the project are identified below (when feasible) that may also reduce the impacts to less than significant levels in a more effective and environmentally sound manner

- Alternatives that reflect previous maintenance approaches that were not as environmentally sensitive to provide historic context

7.2 ROUTINE MAINTENANCE PROGRAM

7.2.1 Description of Alternatives

No Maintenance Alternative

Under this alternative, the drainages and debris basins in the County would no longer be maintained on a routine basis. Instead, they would be repaired or reconstructed only after conditions arise in which there is an imminent and substantial threat to public facilities and infrastructure due to the following: (1) loss of channel conveyance because of debris dams, sediment accumulation, blocked culverts, bank failure, or landslides that will cause flood damage to public facilities and infrastructure; and (2) channel bed degradation or bank failure that threatens public facilities and infrastructure. No bank stabilization would occur after damaging floods unless public roads or infrastructure are threatened. No mowing would occur along the lower Santa Ynez River.

This alternative is included per the requirements of CEQA. It does not meet the project objectives, as described in Section 2.2.

Traditional Maintenance

Prior to 1992, the District conducted routine maintenance similar to the current program, except that the following procedures and actions were not included:

- The District generally cleared creek beds and banks with a dozer
- The District did not restore habitat to compensate for impacts to in-stream vegetation
- The District utilized a greater volume of herbicide and treated a larger area
- The District did not have a staff biologist assigned to conduct pre-maintenance surveys, to monitor certain maintenance work, to capture and relocate sensitive species at work sites, and to conduct habitat restoration. The District addressed biological issues in a more *ad hoc* manner rather than in a systematic manner.

This alternative is included for information purposes only. It does not meet the project objectives, as described in Section 2.2.

Current Maintenance (No Project Alternative)

The current program was approved in 1992. It represents the No Project Alternative because it would be continued if the proposed project is not approved. It includes environmental protection through the use of SMPs, and the preparation of Annual Plans for maintenance and their associated CEQA compliance. This program has been successfully implemented for nine years. It does not include the following key elements of the proposed updated program: (1) an off-site habitat restoration option at the Los Carneros Mitigation Bank; (2) full consideration of incidental hydraulic impacts when determining maintenance needs; (3) new analytic tools for assessing channel conditions; (4) inclusion of the Santa Ynez River maintenance project; (5) accounting for impact acreage, as well as habitat values and functions; and (6) consideration of alternative bank protection methods.

7.2.2 Comparison of Impacts

<u>Summary of Major Impacts - No Maintenance Alternative</u>

Without maintenance, channel capacities in all maintained drainage will decrease as vegetation aggrades in the channel bottom, debris dams form, and bank erosion creates new obstructions in the channel. These conditions represent natural fluvial processes as sediments are conveyed from the mountains to the ocean. During periods of low flow, in-channel vegetation will grow dense and sediments will not move through the system. However, during periodic major flood events, the channel vegetation will be removed and sediments will be mobilized. In addition, the accumulated debris in the channel will create obstructions, which in turn, will cause overbank flooding and bank erosion. Overbank flooding and bank erosion may remove riparian habitat on the floodplain. The result will be a new channel geometry along the affected reach, such as a realigned channel created by bank erosion on one side, or a wider or deeper channel caused by scouring. New stream terraces and low floodplains may be created.

Some of the above fluvial processes will occur under both the No Project Alternative and the proposed updated maintenance program. However, under the No Project Alternative, there would be more catastrophic effects. That is, there would be more frequent and damaging overbank flooding and bank failure. The primary environmental impacts of the hydraulic changes compared to the proposed project would include:

- There will be a greater variation in the amount and quality of riparian and wetland habitat along the drainages over time. This impact is not necessarily adverse, as riparian vegetation, fish, and wildlife are adapted to disturbance cycles. However, there is likely to be less dense mature woodlands along the banks of drainages, which could reduce the diversity and abundance of wildlife, particularly bird life.

- There will be greater damage to public infrastructure and private property, which is more likely to result in an emergency situation and require emergency measures. The latter include quick action responses to conduct repairs, reduce flooding, and stabilize banks. Under such conditions, environmentally sensitive solutions are more difficult to implement. Hence, there may be more "hard solutions" applied under the No Maintenance Alternative, such as levees, grouted rip-rap, and destructive desilting. These actions would degrade habitat and aesthetics to a greater degree than under the proposed maintenance program. Hence, over time, the drainages in the County would have less habitat than under the proposed maintenance program.

This alternative would result in several <u>new</u> significant impacts compared to the proposed project: (1) long-term net reduction in the amount and quality of well-developed riparian woodland due to the periodic catastrophic flooding that would remove bank vegetation; (2) potential increase in flood control facilities installed during emergency conditions that have incidental adverse hydraulic impacts; and (3) potentially greater disturbance to in-channel habitats and sensitive species due to emergency maintenance which has severe environmental impacts than planned and mitigated routine maintenance. There would be greater flooding under this alternative compared to the proposed project which would result in more damages to property, life, public infrastructure, and habitat.

Summary of Major Impacts – Traditional Maintenance Alternative

Under the traditional maintenance program, the same types of maintenance activities would occur as under the proposed project. However, there would be greater environmental impacts to many resources because the current and proposed environmental protection measures would not be applied. The following new significant impacts would likely occur that would not occur under the proposed project:

- Net loss of wetland and riparian habitat on individual drainages and in the county as a whole due to channel maintenance and installation of bank protection
- Periodic and widespread high concentrations of herbicide in surface waters that could adversely affect aquatic resources and the public
- Increased bank erosion (and concomitant loss of bank habitat) and channel degradation caused by excessive channel clearing
- Increased bank erosion due to lack of pre-emptive bank stabilization under the current and proposed on-site habitat restoration program
- Taking of sensitive fish and wildlife species due to habitat removal and long-term adverse hydraulic effects on in-stream habitats
- Increase in fish passage impediments

Summary of Major Impacts – Current Maintenance Alternative

The current maintenance program would not have any new significant environmental impacts compared to the proposed updated program. However, the magnitude of the following previously identified impacts would be greater under the current program compared to the proposed program:

- Reduction in potential biofiltering functions along drainages due to unnecessary vegetation thinning and removal
- Channel bed degradation and bank steepening due to excessive vegetation removal in the channel bottom, desilting, or channel shaping
- Loss of bank side riparian habitat due to use of "hard" bank protection methods
- Potential adverse effects on steelhead passage

Avoidance of Significant Impacts

The proposed project would result in four significant, unmitigable impacts (Class I) which are listed below. The extent to which the above three alternatives would avoid or lessen these impacts is noted below in Table 7-1. The analysis indicates that the No Maintenance Alternative may avoid the significant impacts of the proposed project because the No Maintenance Alternative does not include removal of vegetation from the channel bottom, or other habitat disturbing activities on the channel bottom. However, it should be noted that the No Project Alternative has several other significant unmitigable impacts (as described earlier) and does not meet the project objectives. The most important impacts of the No Maintenance Alternative are the destructive effects of uncontrolled flooding and bank erosion over time. In addition, the No Maintenance Alternative could result in more severe environmental impacts due to emergency maintenance work.

The other alternatives (Traditional and Current Maintenance) would not avoid or lessen the Class I impacts of the proposed project.

TABLE 7-1

COMPARISON OF CLASS I IMPACTS FOR THE MAINTENANCE PROGRAM ALTERNATIVES

Class I Impact (see Table S-1)	Is there Mitigation to Reduce the Magnitude of the Impact?	Will the Impacts of the Alternative be More or Less than the Proposed Project?		
		No Maint*	Traditional	Current
Temporarily reduce amount and quality of channel bottom habitat by brushing and spraying. This may reduce the bio-filtration effects of emergent wetlands (if present). This impact would contribute to an overall decrease in regional water quality.	Yes. Mitigation Measures H-1, B-2, and W-3 which result in minimizing area affected to the maximum extent feasible, consistent with maintenance needs	This alt. would have <u>same</u> or <u>less</u> impact because more bio-filtering emergent wetlands may be present over time in unmaintained drainages, but would be vulnerable during emergency maintenance work	This alt. would likely have <u>greater</u> impact because vegetation removal would be greater	This alt. would likely have a slightly <u>greater</u> impact because vegetation removal would be slightly more

TABLE 7-1
(Continued)

Class I Impact (see Table S-1)	Is there Mitigation to Reduce the Magnitude of the Impact?	Will the Impacts of the Alternative be More or Less than the Proposed Project?		
		No Maint*	Traditional	Current
Temporarily remove and/or thin vegetation from channel bottom by brushing, herbicide application, desilting, and channel shaping. Functions and values of the affected habitat would be replaced by habitat restoration. However, there is a potentially adverse cumulative effect.	Yes. Mitigation Measures B-1, B-2, and B-3 which include compensatory habitat mitigation, minimal habitat removal, and maintenance monitoring	This alt. would have same or less impact because more channel bottom vegetation may be present over time in unmaintained drainages, but would be vulnerable during emergency maintenance work	This alt. would likely have greater impact because vegetation removal would be greater, and there would be no habitat restoration	This alt. would likely have a slightly greater impact because vegetation removal would be slightly more
Temporarily displace wildlife due to vegetation removal in the bottoms of drainages and debris basins. Functions and values of affected habitat would be replaced by habitat, there will be a temporal impact to wildlife that cannot be fully mitigated.	Yes. Mitigation Measures B-1, B-2, and B-3 which include compensatory habitat mitigation, minimal habitat removal, and maintenance monitoring	This alt. would have same or less impact because more channel bottom vegetation may be present over time in unmaintained drainages, but would be vulnerable during emergency maintenance work	This alt. would likely have greater impact because vegetation removal would be greater, and there would be no habitat restoration	This alt. would likely have a slightly greater impact because vegetation removal would be slightly more
Reduce vegetation cover, pools and gravel beds, organic input from overhanging vegetation supporting aquatic productivity, and instream cover and debris providing micro-habitat. Displace fish and aquatic organisms.	Yes. Mitigation Measures H-1, B-1, and B-2 which include compensatory habitat mitigation and minimal habitat removal	This alt. would have same or less impact, as described above.	This alt. would likely have greater impact because channel work would be greater	This alt. would likely have a slightly greater impact because channel work would be slightly more

* Does not include environmental impacts of emergency maintenance activities, which can be more severe than routine, mitigated maintenance actions.

The proposed project would result in numerous significant, but mitigable impacts (Class II). The extent to which these impacts under the three alternatives would be greater or lesser than the proposed project is noted in Table 7-2.

TABLE 7-2
COMPARISON OF CLASS II IMPACTS FOR THE MAINTENANCE PROGRAM ALTERNATIVES

Class II Impacts (see Table S-1)	Will the Impacts of the Alternative be More (+) or Less (-) than the Proposed Project, or the Same (0)?		
	No Project*	Traditional	Current
Reduce channel resistance by removing channel vegetation, and potentially increase velocities to erosive levels.	-	+	+
Reduce bank stability due to giant reed removal from banks.	-	-	0
Unintended bank erosion due to hard bank protection	-	+	0
Modification of channel roughness	-	+	+
Potential for localized elevated concentrations of glyphosate in drainages due to excessive application of herbicides or poor application methods that result in overspray which would degrade water quality.	-	+	+
Remove bank habitat for "hard" bank protection (i.e., grouted rip-rap) to stabilize a severely eroded bank.	-	+	+
Reduce riparian habitat on the banks due to construction or maintenance of access ramps	-	0	0
Temporary, incidental habitat disturbance outside the work area during maintenance activities.	-	+	0
Displace or disturb sensitive plants (if present) during certain maintenance activities.	-	+	0
Displace wildlife when installing hard bank protection.	-	+	+
Displace wildlife when installing new access ramps.	-	0	0
Displace or remove sensitive fish and wildlife due to maintenance activities in drainages and debris basins.	-	+	0
Expose fish, aquatic organisms, and wildlife to potentially harmful herbicides.	-	+	+
Create possible fish passage impediments from new grade stabilizers	-	+	+
Temporary emissions from maintenance equipment	-	0	0
Temporary emissions of fugitive dust due to earth moving activities during maintenance.	-	0	0
Temporary increase in ambient noise levels during maintenance activities.	-	0	0
Potential disturbance of buried cultural resources.	-	0	0
Expose recreational users along creeks to herbicides.	-	+	+
Reduce sediment supply to local beaches	-	0	0

* Does not include environmental impacts of emergency maintenance activities, which can be more severe than routine, mitigated maintenance actions.

The No Maintenance Alternative would avoid the Class II impacts of the proposed project because the No Maintenance Alternative. However, as noted earlier, the No Maintenance Alternative has several other significant unmitigable impacts such as the destructive effects of uncontrolled flooding and bank erosion over time. In addition, the No Maintenance Alternative could result in more severe environmental impacts due to emergency maintenance work. Finally, the No Maintenance Alternative does not meet the project objectives.

The other alternatives (Traditional and Current Maintenance) would not substantially lessen the Class II impacts of the proposed project.

<u>Summary</u>

- The alternatives to the proposed maintenance program would not avoid or reduce the significant unmitigable impacts (Class I) associated with the proposed updated maintenance program, with the exception of the No Maintenance Alternative

- The Traditional Maintenance and the Current Maintenance alternatives would have new and additional significant impacts compared to the proposed project, resulting in an overall greater number and magnitude of environmental impacts.

- The No Maintenance Alternative would not meet the basic project objectives to reduce flooding hazards and protect public infrastructure through preventative maintenance, rather than through emergency responses. This alternative would also have severe environmental impacts of increased flooding and bank erosion.

- The No Maintenance Alternative would lessen most of the significant, but mitigable impacts (Class II) of the proposed project. The Traditional Maintenance and the Current Maintenance alternatives would not substantially lessen the Class II impacts of the proposed project.

- The No Maintenance Alternative is not considered feasible by the District because it would not meet the District's project objectives. The Traditional Maintenance Alternative is not considered feasible because it would have greater environmental impacts that can be avoided, and would most likely not be permitted by the state and federal resource agencies.

Based on the above analyses, the environmentally superior alternative is the proposed Updated Routine Maintenance Program.

7.3 SANTA YNEZ RIVER MAINTENANCE PROGRAM

7.3.1 Description of Alternatives

No Project Alternative

Under this alternative, maintenance mowing along the lower Santa Ynez River would not occur under any circumstances.

Minimum Mowing Alternative

Under this alternative, the District would mow vegetation in the river channel with the objective of creating a 50-foot wide cleared zone, using the same methods as the proposed project. However, the District would not mow more than 8 acres. All other elements of the proposed project would be the same, including the environmental protection measures (see Section 3.0), and the mitigation measures (see Section 6.0).

Minor Mowing Alternative

Under this alternative, the District would mow vegetation in the river channel with the objective of creating a 50-foot wide cleared zone, using the same methods as the proposed project. However, the District would not mow more than 12 acres. All other elements of the proposed project would be the same, including the environmental protection measures (see Section 3.0), and the mitigation measures (see Section 6.0).

Moderate Mowing (Proposed Project)

Under this alternative, the District would mow vegetation in the river channel with the objective of creating a 100-foot wide cleared zone, using the same methods as the proposed project. However, the District would mow no more than 16 acres, subject to limitations described in Section 3.3.2: (1) no more than 20 percent of the project reach would have a 100-foot wide mowed swath in any given maintenance year; and (2) after conducting maintenance along the river, no additional maintenance would occur along the same reaches for three years.

Original Mowing Alternative

Under this alternative, the District would mow up to 125 acres of riparian vegetation from the river channel and connect it to the current open areas (estimated to be about 38 acres) to establish a continuous 300-foot wide cleared zone. All other elements of the proposed project would be the same, including the environmental protection measures (see Section 3.0), and most of the mitigation measures (see Section 6.0). This alternative would not include restoration of offsite habitat that would fully mitigate for the periodic disturbance of 125 acres. The District first proposed a channel maintenance project on the lower Santa Ynez River in 1990. That project consisted of a 300-foot wide cleared zone. The District was unable to find suitable and available off site locations for full habitat mitigation. Despite repeated attempts from 1990-1994, the District could not develop a feasible and complete habitat mitigation proposal.

7.3.2 Comparison of Impacts

Summary of Major Impacts – No Project Alternative

Under this alternative, the probability of flooding would increase yearly as the density of riparian habitat continues to increase in the center of the channel. The flood hazard would continue to increase until there is a flood flow that effectively clears the riparian vegetation from the channel center. This flow would likely result in overbank flooding as vegetation and mobilized debris slow flows and raise the water surface elevations. As the water level increases, flows will spill over the banks into the adjacent farm fields, potentially causing damage to crops, private and public roads, and farm structures. After the flood flows, the channel will have a greater capacity due to the scouring effects of the flows. Hence, the flood hazard will be decreased for a period of time.

A natural cycle of varying vegetation density and flood hazard would occur. Under this alternative, there would be an irregular and varying level of flood protection compared to the compared to the proposed project in which the level of flood protection would be managed through periodic mowing.

The environmental impacts of more frequent flooding (that is, flooding at a lower discharge rate) include the following: (1) more frequent disturbance to mature riparian woodland on the sides of the channel due to flooding events; and (2) damage to, and possible loss of, prime farmlands.

Summary of Major Impacts – Minimum Clearing Alternative

This alternative would cause the same impacts as the proposed project, except that the magnitude of the impacts would be reduced because only half the acreage would be mowed (8 acres) compared to the proposed project. In addition, mowing would require half the effort and time as the proposed project. No new environmental impacts would occur under this alternative.

Maintaining a 50-foot wide swath along the project reach would provide less channel capacity than the proposed project, and therefore, the flood hazard would increase under this alternative. As a result, there would be more frequent flooding with the associated environmental impacts (i.e., damage to riparian woodland on the banks and prime farmlands on the floodplain).

A comparison of the capacity and flooding impacts of this alternative compared to the proposed project is provided in Table 7-3.

Summary of Major Impacts – Minor Clearing Alternative

This alternative would cause the same impacts as the proposed project, except that the magnitude of the impacts would be reduced because the acreage would be reduced to 12 acres. In addition, mowing would require less effort and time as the proposed project. No new environmental impacts would occur under this alternative.

Maintaining a 75-foot wide swath along the project reach would provide less channel capacity than the proposed project, and therefore, the flood hazard would increase under this alternative. As a result, there would be more frequent flooding with the associated environmental impacts (i.e., damage to riparian woodland on the banks and prime farmlands on the floodplain).

A comparison of the capacity and flooding impacts of this alternative compared to the proposed project is provided in Table 7-3.

Summary of Major Impacts - Original Mowing Alternative

This alternative would cause substantially more impacts than the proposed project because it would disturb up to 125 acres compared to 16 acres under the proposed project. Associated impacts include the following: (1) increased time and effort for clearing that could result in higher risk of accidental spills or leaks; (2) increased discharge of vegetation debris that could affect water quality; (3) increased potential for incidental impacts to wetlands along the river channel; (4) increased number of access points; and (5) potential to reduce the quality and amount of habitat for riparian breeding birds. The latter impact would occur because a greater amount of mature riparian woodland would be converted to river wash and immature willow scrub. This may reduce the number of riparian breeding birds along the project reach, including the endangered willow flycatcher.

Finally, this alternative would not include full offsite habitat mitigation. It is estimated that no more than an additional 10 acres of offsite mitigation would be feasibly acquired by the District. Hence, there would be an impact to 100 acres of riparian habitat that would not be mitigated.

This alternative would provide much greater flood protection than the proposed project, as shown in Table 7-3. These predictions of channel capacity were developed by Penfield & Smith (in-house files) using a HEC-RAS model. They represent the best approximations using available tools. The hydraulic characteristics of the Santa Ynez River are not amenable to conventional modeling due to the apparent change in bed elevation during flood flows.

TABLE 7-3
CHANNEL CAPACITY OF THE SANTA YNEZ RIVER ALTERNATIVES

Alternative	Capacity (cfs)
Unmaintained condition	9,000
50-foot cleared zone	13,000
75-foot cleared zone	15,000
100-foot cleared zone (proposed)	18,000+
300-foot cleared zone	35,000+

Source: Penfield & Smith.

Avoidance of Significant Impacts

The proposed lower Santa Ynez River maintenance project would not result in any significant, unmitigable impacts (Class I). However, the proposed project would cause many significant, but mitigable impacts (Class II). The extent to which these impacts under the four alternatives would be greater or lesser than the proposed project is noted in Table 7-4.

TABLE 7-4
COMPARISON OF CLASS II IMPACTS FOR THE SANTA YNEZ RIVER ALTERNATIVES

Class II Impacts (see Table S-2)	Will the Impacts of the Alternative be More (+) or Less (-) than the Proposed Project, or the Same (0) ?			
	No Maint.	Minimum	Minor	Original
Accidental leakage or spill of fuel and/or oil from the mowing equipment working within the channel.	-	0	0	+
Periodic disturbance to immature willow scrub due to mowing operations.	-	-	-	+
Inadvertently disturb ponds and wetlands during mowing.	-	0	0	+
Temporarily reduce the amount of riparian habitat on the banks for access ramp use.	-	0	0	+
Potentially affect the regionally rare black-flowered figwort by accessing the river for maintenance.	-	0	0	+
Temporarily displace wildlife that utilize immature willow scrub during mowing,	-	-	-	+
Displace or disturb sensitive wildlife due to mowing operations and accessing the river channel	-	-	-	+
Displace or disturb steelhead if they are migrating through the project reach during mowing	-	0	0	+
Facilitate increased ORV access to the river by access ramps	-	0	0	+
Accidental equipment leaks and spills in the river affect aquatic organisms and sensitive species	-	0	0	+

Summary

- The Minimum and Minor Mowing Alternatives would result in less environmental impacts than the proposed project. However, they would not provide a suitable level of flood protection deemed necessary and reasonable by the District, and established by recent, previous clearing events. Hence, they are considered undesirable, although they still represent feasible alternatives.

- The No Project Alternative would result in greater environmental impacts than the proposed project due to the damaging effects of flooding on prime farmlands and on mature riparian woodland on the riverbanks. This alternative would not meet the District's objectives, and is considered infeasible and undesirable.

- The Original Mowing Alternative would cause substantially greater impacts than the proposed project, including several potentially significant, unmitigable habitat impacts.

Based on the above analyses, the environmentally superior alternative is the Minor Mowing Alternative. However, it is not considered desirable as it does not substantially meet the project objectives.

7.3.3 Previous Alternatives Dismissed From Consideration

In a 1992 Final EIR, the District examined various alternative projects to increase conveyance along the Santa Ynez River. The preferred project was the 300-foot wide clearing, described above as the "Original Mowing Alternative." In the EIR, the District examined several other alternatives, including ones involving the purchase of land and construction of levees along the river. Three such alternatives were studied and determined to be infeasible: Full Length Levee, Set-Back Levee, and Partial Levee and Clearing alternatives. These alternatives were considered infeasible by the District in 1992 and remain so today for the following reasons: (1) the capital and maintenance costs of these structural alternatives are prohibitive to the District based on its funding authority; and (2) the availability of land for levees is highly uncertain. Equally important, all three alternatives would result in: (1) greater impacts to riparian habitat that could not be feasibly mitigated; and (2) significant unmitigable impacts that are avoided by the proposed project, including loss of prime farmlands and potential destruction of willow flycatcher habitat. While these alternatives may meet the basic project objectives, they are clearly infeasible and environmentally more damaging than the proposed project and other alternatives. A summary of the estimated construction costs from the 1992 Final EIR is provided below:

- Full Length Levee - $5 million
- Set-Back Levee - $1.3 million
- Partial Levee - $ 1.1 million

These estimates were based on land values in the Lompoc Valley of about $15,000 per acre. Current land cost estimates are similar, ranging form $12,000 to $18,000. The total annual assessment in the Lompoc Valley is only $126,000.

These alternatives were not considered in this EIR because they would result in greater impacts to farmlands and riparian habitat than the proposed project, and as such, are not acceptable under CEQA. In addition, they are fiscally infeasible based on land costs and the District's revenues in the Lompoc Valley.

7.4 ALTERNATIVES TO HERBICIDE APPLICATION

Based on the analyses in the 1991 Final EIR and the current EIR, the use of herbicide to manage vegetation in channels and debris basins would not result in any significant, unmitigated impacts to water quality, aquatic life, or public health. Despite the absence of a significant impact, there is often a concern expressed by the public about the availability of alternatives to the use of herbicide. If herbicides were not used, the District would conduct all vegetation thinning and removal by hand crews. Manual vegetation removal is much less efficient than herbicide treatment due to the greater physical effort involved with cutting individual stems, hauling and chipping downed stems, and maintaining chainsaws. For example, two people can treat an acre with herbicide in two hours. The same area would require 4 people one full day to treat using chainsaws. The cost would be more than 100 times greater. The District's operation is funded by a fixed assessment. Conducting all vegetation management with hand crews would not be affordable in most flood zones with the current assessment base. Increasing the assessment is not considered feasible in light of the recent failure of voters to increase the flood zone assessment rate.

Use of hand crews for all vegetation removal would substantial increase the time working in the drainages, cause greater noise and air pollution, and increase worker hazards associated with the use of chainsaws. Based on these considerations, the District does not believe that manual clearing is a feasible alternative to herbicide treatment.

8.0 CONSISTENCY WITH RELEVANT PLANS

CEQA requires an evaluation of a project's consistency with land use and environmental plans, goals, and policies. An assessment of consistency with applicable elements of the Santa Barbara Comprehensive Plan is provided below consistent with the CEQA Guidelines to identify consistency with local plans. Goals and policies that relate to the project are within Land Use Element, Conservation Element, Noise Element, Groundwater Element, Montecito Community Plan, Goleta Community Plan, Los Alamos Community Plan, Orcutt Community Plan, Santa Barbara County Coastal Plan, City of Carpinteria Local Coastal Plan, City of Santa Barbara Local Coastal Plan, Toro Canyon Community Plan and the Summerland Final Community Plan. The following consistency analysis is also required for the General Plan conformity determination (Government Code 65402) that must be made by the Santa Barbara County Planning Commission.

8.1 COUNTY COMPREHENSIVE PLAN - LAND USE ELEMENT

> <u>Hillside and Watershed Protection Policy #5</u>: *Temporary vegetation, seeding, mulching, or other suitable stabilization method shall be used to protect soils subject to erosion that have been disturbed during grading or development. All cut and fill slopes shall be stabilized as rapidly as possible with planting of native grasses and shrubs, appropriate non-native plants, or with accepted landscaping practices.*

<u>Potentially Consistent</u>. The District purposely stabilizes slopes and eroding banks as part of the maintenance program. In addition, the District will implement mitigation measures identified in Sections 5.1.3, 5.3.3, and 6.2.3 in order to stabilize slopes and soils that have been disturbed during other maintenance activities.

> <u>Hillside and Watershed Protection Policy #7:</u> *Degradation of the water quality of groundwater basins, nearby streams, or wetlands shall not result from development of the site. Pollutants, such as chemicals, fuels, lubricants, raw sewage, and other harmful waste, shall not be discharged into or alongside coastal streams or wetlands either during or after construction.*

<u>Potentially Consistent</u>. The District will implement mitigation measures in Sections 5.2.3 and 6.1.3 to prevent degradation of water quality from excessive sedimentation and accidental spills while performing the proposed maintenance activities.

> <u>Streams and Creeks Policy #1:</u> *All permitted construction and grading within stream corridors shall be carried out in such a manner as to minimize impacts from increased runoff, sedimentation, biochemical degradation, or thermal pollution.*

<u>Potentially Consistent</u>. The District will implement mitigation measures in Sections 5.2.3 and 6.1.3 to prevent degradation of water quality from excessive sedimentation and accidental spills while performing the proposed maintenance activities.

Historic and Archaeological Sites Policies 1 through 5 - These policies pertain to the avoidance, protection and, where avoidance is not possible, mitigation of impacts to significant historic and archaeological sites. Policy 5 also requires consultation with Native Americans regarding impacts to significant sites.

Potentially Consistent. The District will implement mitigation measures in Section 5.7.3 and Section 6.6.3 to prevent significant impacts to archeological sites while performing the proposed maintenance activities.

8.2 COMPREHENSIVE PLAN - NOISE ELEMENT

Noise Policy No. 1. In the planning of land use, 65 dBA day-night average sound level (l_{dn}) should be regarded as the maximum exterior noise exposure compatible with noise sensitive uses unless noise mitigation features are included in the project design.

Potentially Consistent. The District will implement mitigation measures in Sections 5.6.3 and 6.5.3 to avoid significant noise impacts associated with routine maintenance activities near sensitive receptors.

8.3 SUMMERLAND COMMUNITY PLAN

Policy BIO-S-4: Trimming or clearing of vegetation within 50' of the Monarch Butterfly Habitat located adjacent to Via Real and Lambert Road or along riparian habitats shall not occur without the review and the approval of the Resource Management Department.

Potentially Consistent. Mitigation measures have been developed to avoid sensitive habitats and species (including Monarch butterflies) while conducting maintenance activities (see Mitigation Measure B-5 in Section 5.4.3).

Policy BIO-S-6: To the maximum extent feasible, specimen trees shall be preserved and the planting of new trees shall be required. For the purposes of this policy, specimen trees are defined as those having unusual scenic or aesthetic quality, serving as known raptor nesting or key roosting sites, having important historical value, are unique due to species type or location or have been defined as a significant biological resource in a certified environmental document. Typically, non-native trees of less than 25 inches in diameter at breast height may not qualify as specimens.

Potentially Consistent. Large trees are not typically removed as part of the maintenance program unless the tree is about to fall into the channel and cause an obstruction to flow. In addition, bank vegetation, where large trees are generally located, is not removed under the maintenance program.

Policy BIO-S-7: Riparian habitat areas shall be protected from all new development and degraded riparian habitats shall be restored where appropriate.

Potentially Consistent. Most maintenance activities involve brushing and spraying, which result in temporary and reversible impacts to riparian habitat similar to natural disturbances from floods. "Development" in riparian areas would be restricted to installation of grade stabilizers and bank protection to prevent severe channel headcutting and bank erosion, respectively. These types of maintenance activities would occur infrequently, and only when there are no other feasible alternatives. All habitat impacts from maintenance activities, ranging from brushing to new bank protection, would be mitigated by habitat restoration as described in the District's updated restoration plan (see Section 4.5).

8.4 MONTECITO COMMUNITY PLAN

Policy BIO-M-1.1. Designate and provide protection to important sensitive environmental resources and habitats in the inland portion of the Montecito Planning Area.

Policy BIO-M-1.1. The following biological resources and habitats shall be identified as environmentally sensitive and shall be protected and preserved to the extent feasible through the Environmentally Sensitive Habitat (ESH) overlay: riparian woodland corridors, monarch butterfly roosts, sensitive native flora, and coastal sage scrub.

Policy BIO-M-1.3. Environmentally Sensitive Habitat (ESH) areas within the Montecito Planning Area shall be protected, and where appropriate, enhanced.

Potentially Consistent. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including Monarch butterfly trees, rare plants, riparian woodlands and ESH areas) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank.

Policy BIO-M-1.5. Trimming or clearing of vegetation within 50' of a known Monarch Butterfly Habitat or along riparian habitats shall not occur without the review and the approval of the Resource Management Department.

Policy BIO-M-1.6. Riparian vegetation shall be protected as a part of a stream or creek buffer. Where riparian vegetation has previously been removed, (except for channel clearing necessary for free-flowing conditions as determined by County Flood Control District), the buffer shall allow the establishment of riparian vegetation to its prior extent to the greatest degree possible. Restoration of degraded riparian areas to their former state shall be encouraged.

Potentially Consistent. Mitigation measures have been developed to avoid sensitive habitats and species (including Monarch butterflies) while conducting maintenance activities (see Mitigation Measure B-5 in Section 5.4.3). Mitigation measures have been developed to minimize impacts to riparian areas, and to provide long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank. Establishment of a buffer during maintenance work is not feasible. However, it should be noted that bank vegetation, which functions as a natural buffer for creeks, is generally not removed during maintenance activities.

> *Policy BIO-M-1.7. No structures shall be located within a riparian corridor except: public trails that would not adversely affect existing habitat; dams necessary for water supply projects; 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; other development where the primary function is for the improvement of fish and wildlife habitat and where this policy would preclude reasonable development of a parcel. Culverts, fences, pipelines, and bridges (when support structures are located outside the critical habitat) may be permitted when no alternative route/location is feasible. All development shall incorporate the best mitigation measures feasible to minimize the impacts to the greatest extent.*

Potentially Consistent. The proposed project would be consistent with this policy because the maintenance activities, such as installation of bank protection, are allowable uses under the policy, when protecting existing structures.

> *Policy BIO-M-1.9. Wetland areas and surrounding habitats that have been damaged by pollution and artificial stream channelization shall be restored to their natural conditions whenever feasible.*

Not Applicable. The objectives of the maintenance program do not include water quality - the program is designed to reduce flood hazards only. The objectives also do not removal of existing channel improvements and conversion to natural creek conditions. However, the District may remove damaged and ineffective flood control devices, and to the extent feasible, restore natural channel conditions, if such devices are no longer necessary.

> *Policy BIO-M-1.10. All development, including dredging, filling, and grading within stream corridors, shall be limited to activities necessary for the construction of uses specified in Policy B-1.7. When such activities would require removal of riparian plant species, revegetation with local native plants shall be required on both banks and extending outward 25 feet from each top of bank, except where it would preclude reasonable development of a parcel.*

Potentially Consistent. The proposed project would be consistent with this policy because it is an allowable use under the policy, and because local native plants will be used in the habitat restoration. See mitigation measures in Section 5.3.3.

Policy BIO-1.15. To the maximum extent feasible, specimen trees shall be preserved. Specimen trees are defined for the purpose of this policy as mature trees that are healthy and structurally sound and have grown into the natural stature particular to the species. Native and non-native trees have unusual scenic or aesthetic quality, have important historic value, or are unique due to species type or location shall be preserved to the maximum extent feasible.

Policy BIO-M-1.16. All existing native trees regardless of size that have biological value shall be preserved to the maximum extent feasible.

Potentially Consistent. Large trees are not typically removed as part of the maintenance program unless the tree is about to fall into the channel and cause an obstruction to flow. In addition, bank vegetation, where large trees are generally located, is not removed under the maintenance program.

Policy BIO-M-1.20. Pollution of streams, sloughs, drainage channels, underground water basins, estuaries, the ocean and areas adjacent to such waters shall be minimized.

Potentially Consistent. The District will implement mitigation measures in Section 5.2.3 to prevent degradation of water quality during maintenance activities due to post-maintenance sedimentation, herbicide application, and accidental spills.

Policy FD-M-4.1. Flood control activities shall protect lives and property while being conducted according to the least environmentally damaging methods.

Potentially Consistent. The proposed maintenance program has been specifically designed to protect lives and property from flood hazards in the most environmentally sensitive manner.

Policy FD-M-4.2. Major brushing, desilting and shaping shall be justified by appropriate technical engineering analysis.

Potentially Consistent. The District will conduct a thorough "Maintenance Need Analysis" for each maintenance action, justifying the need for the action and determining least environmentally damaging method.

Policy FD-M-4.3. Canopies of riparian vegetation shall be protected and enhanced during flood control activities.

Potentially Consistent. The District would not remove canopy trees as part of the maintenance program. Bank vegetation is not affected by in-channel brushing and spraying.

Policy FD-M-4.4. When flood control maintenance is required, a maintenance access road shall be limited to one side only and to the minimum width feasible. An emergency access *road may be permitted on the opposite side when the riparian habitat is maintained to the greatest degree feasible.*

Potentially Consistent. Access roads and ramps to the maintained drainages have mostly been established throughout the County. However, in the event a new one is required, the District will implement mitigation measures in Sections 5.3.3 and 5.4.3 to reduce habitat and erosion impacts of a new ramp.

Policy FD-M-4.6. Other than projects that are currently approved and/or funded, no further concrete channelization or major alteration of streams shall be permitted.

Potentially Consistent. The proposed maintenance program is primarily designed to maintain existing facilities, not to construct new ones. As such, construction of a new concrete lined channel is not part of the program and would be considered a new and separate project. In addition, the program does not include major alteration of streams - only minor changes in the pilot channel alignment to prevent bank erosion.

Policy CR-M-2.1. Significant cultural, archeological, and historic resources in the Montecito area shall be protected and preserved to the extent feasible.

Potentially Consistent. The District will implement mitigation measures in Section 5.7.3 to prevent impacts to archeological sites while performing the proposed maintenance activities.

Policy N-M-1.1. Noise sensitive uses (i.e., residential and lodging facilities, educational facilities, public meeting places and others specified in the Noise Element) shall be protected from significant noise impacts.

Potentially Consistent. The District will implement mitigation measures in Section 5.6.3 to avoid significant noise impacts associated with routine maintenance activities near sensitive receptors.

8.5 TORO CANYON PLAN POLICIES (DRAFT POLICIES - NOT YET APPROVED)

Policy BIO-TC-1: Environmentally Sensitive Habitat (ESH) areas shall be protected and, where appropriate, enhanced.

Policy BIO-TC-7: Development shall avoid ESH and ESH buffer areas to the maximum extent feasible.

Potentially Consistent. Maintenance work necessarily occurs in drainages, most of which are ESH areas if they contain intact riparian and/or wetland habitat. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including ESH areas) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank.

> Policy BIO-TC-11: *Natural stream channels shall be maintained in an undisturbed state to the maximum extent feasible in order to protect banks from erosion, enhance wildlife passageways, and provide natural greenbelts. "Hardbank" channelization (e.g., use of concrete, riprap, gabion baskets) of stream channels shall be prohibited, except where needed to protect existing structures. Where hardbank channelization is required, the material and design used shall be the least environmentally damaging alternative and site restoration on or adjacent to the stream channel shall be required, subject to a Restoration Plan.*

Potentially Consistent. The proposed maintenance program is designed to minimize the use of traditional flood control methods such as channelization. Hence, most of the maintenance activities involve brushing and spraying the channel bottom, while protecting the native habitat on the banks and avoiding sensitive habitats and species. New bank protection is rarely installed under the program. However, when it is required, "bio-technical" slope that incorporates native vegetation would be used in preference to "hard" protection such as rip-rap.

> Policy BIO-TC-15: *Southern California steelhead trout is a federally listed endangered species which, if identified in the Plan area, shall be protected.*

Potentially Consistent. The proposed maintenance program includes mitigation measures to avoid impacts to the steelhead, including pre-construction surveys to detect their presence, avoidance of occupied pools, post-restoration of channel bed conditions in steelhead habitat areas, and a restriction on the vertical height of new or repaired grade stabilizers (see Section 5.4.3).

> *Policy FLD-TC-2: Short-term and long-term erosion associated with development shall be minimized.*

Potentially Consistent. The District will implement mitigation measures identified in Section 5.1.3 in order to stabilize slopes and soils that have been disturbed during all maintenance activities.

> *Policy FLD-TC-3: Flood control maintenance activities shall seek to minimize disturbance to riparian/wetland habitats, consistent with the primary need to protect public safety. Additional guidance for public maintenance work is provided by the Flood Control District's current certified Maintenance Program EIR and current approved Standard Maintenance Practices. Work should be conducted in a manner that attempts to maintain coastal sand supply where feasible.*

Potentially Consistent. The proposed updated maintenance activities will continue to protect lives and property in the most environmentally sensitive manner, and in accordance with the new Maintenance Program EIR. Mitigation measures to reduce impacts to beach sand supply are provided in Sections 5.1.3 and 5.8.3.

Policy FLD-TC-4: Proposed development, other than Flood Control District activities, shall be designed to maintain creek banks, channel inverts, and channel bottoms in their natural state. Revegetation to restore a riparian habitat is encouraged and may be permitted, subject to the provisions of DevStd FLD-TC-4.1 and any other applicable policies or standards.

Not Applicable. The proposed maintenance activities are for flood control purposes and therefore, this policy is not applicable.

Policy GEO-TC-5: Grading shall be carried out in a manner that minimizes air pollution.

Potentially Consistent. The District will implement mitigation measures in Section 5.5.3 to conserve energy and minimize pollution. Standard Santa Barbara County APCD measures will be implemented to reduce air quality impacts.

Policy WW-TC-2: Pollution of surface, ground and ocean waters shall be avoided. Where avoidance is not feasible, pollution shall be minimized.

Potentially Consistent. The District will implement mitigation measures in Section 5.2.3 to prevent degradation of water quality while performing the proposed maintenance activities.

8.6 GOLETA COMMUNITY PLAN

Policy WAT-GV-10: Creek channelization, which reduces groundwater recharge shall be discouraged.

Not Applicable. The proposed maintenance program does not include construction of new, lined flood control channels.

Policy BIO-GV-1: The County shall designate and provide protection to important or sensitive environmental resources and habitats in the Goleta Planning Area.

Policy BIO-GV-2: Environmentally Sensitive Habitat (ESH) areas and Riparian Corridors within the Goleta Planning Area shall be protected and where feasible and appropriate, enhanced.

Potentially Consistent. Maintenance work necessarily occurs in drainages, most of which are ESH areas if they contain intact riparian and/or wetland habitat. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including ESH areas) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank. The proposed maintenance activities are also consistent with Policies BIO-GV-1 and -2 because the project is consistent with applicable Habitat Protection Policies in the Goleta Community Plan (i.e., Policy BIO-GV-7; DevStd BIO-7.1; Policy BIO-GV-10; DevStd BIO-GV-10.1, -10.2; and Policy BIO-GV-11). These policies allow impacts to riparian and aquatic habitats when there are no other feasible alternatives and when appropriate mitigation measures are incorporated into the project.

> *Policy BIO-GV-3: Development within areas designated as ESH or Riparian Corridor shall comply with the applicable habitat protection policies.*

Potentially Consistent. Policy BIO-GV-3 requires that development within Riparian Corridors or Environmentally Sensitive Habitats must follow the Habitat Protection Policies in the Goleta Community Plan. Applicable Habitat Protection Policies include Policy BIO-GV-7; DevStd BIO-7.1; Policy BIO-GV-10; DevStd BIO-GV-10.1, -10.2; and Policy BIO-GV-11. As described in the Program EIR, the proposed project would be consistent with these policies, and therefore, consistent with Policy BIO-GV-3.

> *Policy BIO-GV-7: Riparian vegetation shall be protected and shall not be removed except where clearing is necessary for the maintenance of free flowing channel conditions, the provision of essential public services, or where protection would preclude the reasonable use of a parcel. Degraded riparian areas shall be restored.*

Potentially Consistent. The proposed maintenance activities would be consistent with this policy because, they are an allowable use in order to maintain free flowing channel conditions. Mitigation measures in Section 5.3.3 would reduce impacts to riparian vegetation, and provide for compensatory habitat mitigation.

> *Policy BIO-GV-10: To the greatest extent feasible, natural stream channels shall be maintained in an undisturbed state in order to protect banks from erosion, enhance wildlife passageways, and provide natural greenbelts.*

Potentially Consistent. The proposed maintenance program is designed to minimize the use of traditional flood control methods such as channelization. Hence, most of the maintenance activities involve brushing and spraying the channel bottom, while protecting the native habitat on the banks and avoiding sensitive habitats and species.

> *Policy BIO-GV-11: Wetland areas and surrounding habitats that have been damaged by pollution and artificial stream channelization shall be restored to their natural condition to the maximum extent feasible.*

Potentially Consistent. The objectives of the maintenance program do not include enhancement of water quality – the program is designed to reduce flood hazards only. The objectives also do not removal of existing channel improvements and conversion to natural creek conditions for restoration purposes only. However, the District may remove damaged and ineffective flood control devices, and to the extent feasible, restore natural channel conditions, if such devices are no longer necessary, or if there is an opportunity to restore the channel and use the restoration as mitigation for other maintenance activities.

> *Policy BIO-GV-12: All development, including dredging, filling, and grading within stream corridors, shall be limited to activities necessary for the construction of uses specified in DevStd BIO-GV-10.1.*

Potentially Consistent. The proposed maintenance activities are consistent with uses specified in DevStd BIO-GV-10.1, resulting in consistency with BIO-GV-12.

> *Policy BIO-GV-19: Pollution of streams, sloughs, drainage channels, underground water basins, estuaries, the ocean, and areas adjacent to such waters shall be minimized.*

Potentially Consistent. The District will implement mitigation measures in Section 5.2.3 to prevent degradation of water quality during maintenance activities due to post-maintenance sedimentation, herbicide application, and accidental spills.

> *Policy HA-GV-1: Significant cultural, archaeological, and historical resources in the Goleta area shall be protected and preserved to the maximum extent feasible.*

Potentially Consistent. The District will implement mitigation measures in Section 5.7.3 to prevent impacts to archeological sites while performing the proposed maintenance activities.

> *Policy RISK-GV-1: Safety measures shall be required as part of project review to minimize the potential for risk of upset and public safety impacts within the Goleta Community Planning area.*

Potentially Consistent. Impacts associated with upset conditions (i.e. accidental discharge of fuel, lubricants, antifreeze, or other such products) are reduced due to the measures that will be taken to prevent these conditions. The District will implement mitigation measures in Section 5.2.3 to prevent degradation of water quality from accidental spills. The proposed maintenance program will reduce public safety hazards associated with flooding.

8.7 ORCUTT COMMUNITY PLAN

> *Policy BIO-O-1: Important natural resources in Orcutt, including sandhill chaparral, coastal dune scrub, wetlands, oak trees, and woodland, Bishop pine forest, specimen trees, and coastal sage scrub shall be protected, consistent with the Open Space Plan and standards below, unless this would prevent reasonable development of a property.*

Potentially Consistent. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including wetlands) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term on-site habitat replacement.

> *Policy BIO-O-2: Consistent with necessary flood control practices, natural stream channels and riparian vegetation in Orcutt shall be maintained in an undisturbed state in order to protect banks from erosion, enhance wildlife passageways, and provide natural greenbelts, unless this would prevent reasonable development of a property.*

Potentially Consistent. The proposed maintenance program is designed to minimize the use of traditional flood control methods such as channelization. Hence, most of the maintenance activities involve brushing and spraying the channel bottom, while protecting the native habitat on the banks and avoiding sensitive habitats and species.

> *Policy FLD-O-1: Flood risks in Orcutt planning area shall be minimized through appropriate design and land use controls.*

Potentially Consistent. The proposed maintenance activities will maintain existing approved flood control facilities and decrease flood risks, and therefore would be consistent with this policy.

8.8 LOMPOC AREA PLAN

> *Goal: Unique ecological areas should be identified and preserved*

Potentially Consistent. The District will avoid sensitive wetland areas and habitat for endangered species (e.g., black-flowered figwort and southern steelhead) when conducting maintenance work in the valley, as described in Sections 5.3.3, 5.4.3, 6.2.3, and 6.3.3.

> *Goal: Changes in natural or re-established topography, vegetation, biological communities should be minimized in an attempt to avoid the destruction of natural habitats*

Potentially Consistent. The maintenance program includes various mitigation measures to minimize maintenance activities, and therefore, minimize impacts to natural habitats. The proposed maintenance program is designed to minimize changes to the natural channel geometry. Most of the maintenance activities involve brushing and spraying the channel bottom, while protecting the native habitat on the banks.

8.9 LOS ALAMOS COMMUNITY PLAN

> *Policy BIO-LA-1.1: Riparian habitat on San Antonio Creek and local drainages shall be preserved and restored to the maximum extent feasible.*

Potentially Consistent. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including wetlands) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term on-site habitat replacement.

> *Policy BIO-LA-1.3: To the maximum extent feasible, all existing "protected" trees shall be preserved. Protected trees are defined for the purposes of this policy as mature trees that are healthy and structurally sound and have grown into the natural stature particular to the species. Native or non-native trees that have unusual scenic or aesthetic quality, have important historic value, or are unique due to species type or location shall be preserved to the maximum extent feasible.*

Potentially Consistent. Large trees are not typically removed as part of the maintenance program unless the tree is about to fall into the channel and cause an obstruction to flow. In addition, bank vegetation, where large trees are generally located, is not removed under the maintenance program.

> *Policy FLD-LA-1.1: Drainage systems shall be designed to accommodate full buildout of the urban area as defined by the Community Plan.*

Potentially Consistent. The proposed maintenance activities will maintained approved flood control facilities and decrease flood risks, and therefore would be consistent with this policy.

8.10 SANTA BARBARA COUNTY - COASTAL PLAN

> *Policy 3-13. Plans for development shall minimize cut and fill operations. Plans requiring excessive cutting and filling may be denied if it is determined that the development could be carried out with less alteration of the natural terrain.*

Potentially Consistent. The proposed updated maintenance program primarily involves brushing and spraying which do not disturb the channel substrate, and as such, are not considered grading. In addition, the program does not include removal of bank vegetation or grading of banks. However, cut and fill operations may occur in the channel bottom due to pilot channel reconstruction, channel shaping, desilting, and access ramp construction. These activities would be minimized to the extent feasible under the proposed program, and as specified in Mitigation Measures H-1, H-2, and H-8 (Section 5.1.3) and Measures B-2 and B-4 (Section 5.3.3).

> *Policy 3-15. For necessary grading operations, the smallest practical area of land shall be exposed at any one time during the development phase, and the length of exposure shall be kept to the shortest practicable amount of time. The clearing of land shall be avoided during the winter rainy season and all measures for removing sediments and stabilizing slopes shall be in place before the beginning of the rainy season.*

Potentially Consistent. Under Mitigation Measures H-1 and H-2 (Section 5.1.3) and Measure B-2 (Section 5.3.3), the District will minimize the area affected by channel shaping, desilting, and pilot channel reconstruction to reduce post-construction sedimentation. In addition, affected areas will be stabilized under Mitigation Measure H-3 (Section 5.1.3) and Measure W-1 (Section 5.2.3). Maintenance work occurs in the fall prior to the rainy season.

> *Policy 3-17. Temporary vegetation, seeding, mulching, or other suitable stabilization method shall be used to protect soils subject to erosion that have been disturbed during grading or development. All cut and fill slopes in a completed development shall be stabilized immediately with planting of native annual grasses and shrubs, or appropriate non-native plants with accepted landscaping practices.*

Potentially Consistent. The District will implement Mitigation Measure H-3 (Section 5.1.3) and Measure W-1 (Section 5.2.3) to reduce post maintenance erosion and sedimentation. All temporarily disturbed banks would be stabilized under Mitigation Measure B-4 (Section 5.3.3).

> *Policy 3-19. Degradation of the water quality of groundwater basins nearby streams or wetlands shall not result from development of the site. Pollutants such as chemicals, fuels, lubricants, raw sewage, and other harmful waste shall not be discharged into or alongside coastal streams or wetlands during or after construction.*

Potentially Consistent. The District will implement mitigation measures in Sections 5.2.3 and 6.1.3 to prevent degradation of water quality from excessive sedimentation and accidental spills while performing the proposed maintenance activities.

> *Policy 9-1. Prior to the issuance of a development permit, all projects on parcels shown on the land use plan and/or resource maps with a Habitat Area Overlay designation or within 250 feet of such a designation or projects affecting an environmentally sensitive habitat area shall be found to be in conformity with the applicable habitat protection policies of the land use plan. All development plans, grading plans, etc., shall show the precise location of the habitat(s) potentially affected by the proposed project. Projects which could adversely impact an environmentally sensitive habitat area, may be subject to a site inspection by a qualified biologist to be selected jointly by the County and the applicant.*

Potentially Consistent. Maintenance work necessarily occurs in drainages, most of which are ESH areas if they contain intact riparian and/or wetland habitat. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including ESH areas) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3, 6.2.3, 6.3.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank.

> *Policy 9-9. A buffer strip, a minimum of 100 feet in width, shall be maintained in a natural condition along the periphery of all wetlands. No permanent structures shall be permitted,*

within the wetland or buffer area except structures of a minor nature, i.e., fences, or structures necessary to support the uses in Policy 9-10.

Potentially Consistent. Establishment of a buffer during maintenance work is not feasible, as the work primarily occurs in the center of a channel or debris basin, and must necessarily affect the habitat present in these areas. However, it should be noted that bank vegetation, which functions as a natural buffer for creeks, is generally not removed during maintenance activities.

Policy 9-14. New development adjacent to or in close proximity to wetlands shall be compatible with the continuance of the habitat area and shall not result in a reduction in the biological productivity or water quality of the wetland due to runoff (carrying additional sediment or contaminants), noise, thermal pollution, or other disturbances.

Potentially Consistent. The proposed maintenance program necessarily occurs within channels and debris basins where wetlands may be located. The program has been designed to minimize impacts to biological resources and water quality through standard environmental protection measures. In addition, compensatory habitat mitigation is included in the program to avoid long term impacts to biological productivity of the County's wetlands.

Policy 9-36. When sites are graded or developed, areas with significant amounts of native vegetation shall be preserved. All development shall be sited, designed, and constructed to minimize impacts of grading, paving, construction of roads or structures, runoff, and erosion on native vegetation. In particular, grading and paving shall not adversely affect root zone aeration and stability of native trees.

Potentially Consistent. Under Mitigation Measures H-1, H-2, u (Section 5.1.3) and Measure B-2 (Section 5.3.3), the District will minimize the area affected by channel shaping, desilting, pilot channel reconstruction, and access ramp construction to reduce vegetation removal and grading effects.

Policy 9-37. The minimum buffer strip for major streams in rural areas, as defined by the land use plan, shall be presumptively 100 feet, and for streams in urban areas, 50 feet. These minimum buffers may be adjusted upward or downward on a case by case basis. The buffer shall be established based on an investigation of the following and Regional Water Quality Control Board in order to protect the biological productivity and water quality of streams...

Potentially Consistent. Establishment of a buffer during maintenance work is not feasible, as the work primarily occurs in the center of a channel or debris basin, and must necessarily affect the habitat present in these areas. However, it should be noted that bank vegetation, which functions as a natural buffer for creeks, is generally not removed during maintenance activities. It should also be noted that the program does not include paving or construction of structures for which buffer zones are typically applied. Most maintenance activities also include post-maintenance habitat restoration.

Policy 9-38. No structures shall be located within the stream corridor except: public trails; dams for necessary for water supply projects; flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development; and other development where the primary function is for the improvement of fish and wildlife habitat. Culverts, fences, pipelines, and bridges (when support structures are located outside the critical habitat) may be permitted when no alternative route/location is feasible. All development shall incorporate the best mitigation measure feasible.

Potentially Consistent. The proposed project would be consistent with this policy because maintenance activities that involve new structures, such as installation of a new grade stabilizer or bank protection, are allowable under the policy. New structures are only rarely installed under the program, and only in cases where it is necessary to protect existing public (and sometimes private) infrastructure.

Policy 9-39. Dams or other structures that would prevent upstream migration of the anadromous fish shall not be allowed in streams targeted by the California Department of Fish and Game unless other measures are used to allow fish to bypass obstacles. These streams include: San Antonio Creek (Los Alamos area), Santa Ynez River, Jalama Creek, Santa Anita Creek, Gaviota Creek and Tecolote Creek.

Potentially Consistent. The proposed maintenance program includes the repair and installation of grade stabilizers, as necessary. Mitigation Measure H-7 (Section 5.4.3) would ensure that a passage barrier for anadromous fish would not be created.

Policy 9-38. When such activities would require removal of riparian plant species, revegetation with local native plants shall be required except where undesirable for flood control purposes. Minor clearing of vegetation for hiking, biking, and equestrian trails shall be permitted.

Potentially Consistent. The proposed maintenance program would be consistent with this policy because it is an allowable use under the policy, and because local native plants will be used in the habitat restoration, as described in the District's updated restoration plan (Section 4.5).

Policy 9-40. All permitted construction and grading within stream corridors shall be carried out in such a manner as to minimize impacts from increased runoff, sedimentation, biochemical degradation, or thermal pollution.

Potentially Consistent. The District will implement mitigation measures in Sections 5.2.3 and 6.1.3 to prevent degradation of water quality from excessive sedimentation and accidental spills while performing the proposed maintenance activities.

Policy 9-42. The following activities shall be prohibited within stream corridors: cultivated agriculture, pesticide application, except by mosquito abatement or flood control district, and installation of septic tanks.

Potentially Consistent. The proposed maintenance activities are an allowable use under this policy; hence, the application of herbicides (a form of pesticides, as generally defined by the State) is not prohibited.

Policy 9-43. Other than projects that are currently approved and/or funded, no further concrete channelization or other major alterations of streams in the coastal zone shall be permitted unless consistent with the provisions of Section 30236 of the Coastal Act.

Potentially Consistent. The proposed maintenance program is primarily designed to maintain existing facilities, not to construct new ones. As such, construction of a new concrete lined channel is not part of the program and would be considered a new and separate project. In addition, the program does not include major alteration of streams - only minor changes in the pilot channel alignment to prevent bank erosion.

Policy 10-5. Native Americans shall be consulted when development proposals are submitted which impact significant archaeological or cultural sites.

Potentially Consistent. The District will implement mitigation measures in Sections 5.7.3 and 6.6.3 to prevent impacts to archeological or cultural sites while performing the proposed maintenance activities.

8.11 CITY OF SANTA BARBARA - COASTAL PLAN

Policy 6.1. The City, through ordinance, resolutions, and development controls, shall protect, preserve, and, where feasible, restore the biotic communities designated in the City's Conservation Element of the General Plan and any future annexations to the City, consistent with PRC Section 30240.

Potentially Consistent. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive biological habitats and species due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3, 6.2.3, 6.3.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank.

Policy 6.8. The riparian resources, biological productivity, and water quality of the City's coastal zone creeks shall be maintained, preserved, enhanced, and, where feasible, restored.

Potentially Consistent. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive biological habitats and species (including riparian resources) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3, 6.2.3, 6.3.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank. The District will also implement mitigation measures in Sections 5.2.3 and 6.1.3 to prevent degradation of water quality from excessive sedimentation and accidental spills while performing the proposed maintenance activities.

> *Policy 6.11. 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 flood plain 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.*

Potentially Consistent. The proposed maintenance program is an allowable use under this policy.

8.12 CITY OF CARPINTERIA - COASTAL PLAN

> *Policy 3-13. Plans for development shall minimize cut and fill operations. Plans requiring excessive cutting and filling may be denied if it is determined that the development could be carried out with less alteration of the natural terrain.*

Potentially Consistent. The proposed updated maintenance program primarily involves brushing and spraying which do not disturb the channel substrate, and as such, are not considered grading. In addition, the program does not include removal of bank vegetation or grading of banks. However, cut and fill operations may occur in the channel bottom due to pilot channel reconstruction, channel shaping, and desilting. These activities would be minimized to the extent feasible under the proposed program, and as specified in Mitigation Measures H-1 and H-2 (Section 5.1.3) and Measure B-2 (Section 5.3.3).

> *Policy 3-15. For necessary grading operations, the smallest practical area of land shall be exposed at any one time during the development phase, and the length of exposure shall be kept to the shortest practicable amount of time. The clearing of land shall be avoided during the winter rainy season and all measures for removing sediments and stabilizing slopes shall be in place before the beginning of the rainy season.*

Potentially Consistent. Under Mitigation Measures H-1 and H-2 (Section 5.1.3) and Measure B-2 (Section 5.3.3), the District will minimize the area affected by channel shaping, desilting, and pilot channel reconstruction to reduce post-construction sedimentation. In addition, affected areas will be stabilized under Mitigation Measure H-3 (Section 5.1.3) and Measure W-1 (Section 5.2.3). Maintenance work occurs in the fall prior to the rainy season.

Policy 3-17. Temporary vegetation, seeding, mulching, or other suitable stabilization method shall be used to protect soils subject to erosion that have been disturbed during grading or development. All cut and fill slopes in a completed development shall be stabilized immediately with planting of native annual grasses and shrubs, or appropriate non-native plants with accepted landscaping practices.

Potentially Consistent. The District will implement Mitigation Measure H-3 (Section 5.1.3) and Measure W-1 (Section 5.2.3) to reduce post maintenance erosion and sedimentation. All temporarily disturbed banks would be stabilized under Mitigation Measure B-4 (Section 5.3.3).

Policy 3-19. Degradation of the water quality of groundwater basins nearby streams or wetlands shall not result from development of the site. Pollutants such as chemicals, fuels, lubricants, raw sewage, and other harmful waste shall not be discharged into or alongside coastal streams or wetlands during or after construction.

Potentially Consistent. The District will implement mitigation measures in Sections 5.2.3 and 6.1.3 to prevent degradation of water quality from excessive sedimentation and accidental spills while performing the proposed maintenance activities.

Policy 9-4. A buffer strip, 100 feet in width, shall be maintained in a natural condition along the upland limits of all wetlands. No structures other than those required to support light recreational, scientific and educational uses shall be permitted, where such structures are consistent with all other wetland development policies and where all possible measures have been taken to prevent adverse impacts.

Potentially Consistent. Establishment of a buffer during maintenance work is not feasible, as the work primarily occurs in the center of a channel or debris basin, and must necessarily affect the habitat present in these areas. However, it should be noted that bank vegetation, which functions as a natural buffer for creeks, is generally not removed during maintenance activities. In addition, the District often plants the banks for restoration purposes.

Policy 9-13. When sites are graded or developed, areas with significant amounts of native vegetation shall be preserved. All development shall be sited, designed, and constructed to minimize impacts of grading, paving, construction of roads or structures, runoff, and erosion on native vegetation. In particular, grading and paving shall not adversely affect root zone aeration and stability of native trees.

Potentially Consistent. Under Mitigation Measures H-1 and H-2 (Section 5.1.3) and Measure B-2 (Section 5.3.3), the District will minimize the area affected by channel shaping, desilting, and pilot channel reconstruction to reduce vegetation removal and grading effects.

Policy 9-21. No development or substantial alteration of natural stream corridors shall be permitted unless the City finds that such action is necessary to protect existing structures *and that there are no less environmentally damaging alternatives. Where development or alteration is permitted, best mitigations feasible shall be a condition of project approval.*

Potentially Consistent. The proposed maintenance program is designed to protect existing public infrastructure in the most environmentally sensitive manner. The District will implement various mitigation measures to minimize impacts.

8.13 COASTAL ACT

Section 30230. Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Potentially Consistent. The proposed maintenance program does not include work in estuarine or marine habitats. The program could indirectly affect coastal waters through a reduction in beach sand supply. It could also affect water quality, and therefore marine organisms, due to the application of herbicides, the removal of vegetation that provides a bio-filtering function, post-maintenance sedimentation, and accidental spills of petroleum products and herbicides. These effects would be mitigated to the maximum extent feasible under the updated program by inclusion of the mitigation measures developed in the EIR.

Section 30231. 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 groundwater supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintain natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Potentially Consistent. The proposed maintenance program directly affects riparian habitats, including wetlands, in portions of the Coastal Zone. The productivity of riparian habitats and species is protected through the various mitigation measures to be implemented as part of the program, including to avoid or reduce significant impacts to sensitive biological habitats and species (including wetlands and riparian habitat) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3, 6.2.3, 6.3.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank.

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.*

Potentially Consistent. The proposed maintenance program is an allowable use under this policy.

> Section 30240. *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.*

Potentially Consistent. Maintenance work necessarily occurs in drainages, most of which are ESH areas if they contain intact riparian and/or wetland habitat. Mitigation measures have been developed to avoid or reduce significant impacts to sensitive habitats and species (including ESH areas) due to the proposed maintenance activities (see Sections 5.3.3, 5.4.3, 6.2.3, 6.3.3), to the extent feasible and consistent with objectives of the maintenance program. Measures include avoidance of sensitive species and key habitat areas to the extent feasible, minimization of the impact area, post-maintenance restoration for sediment control, and long-term habitat replacement either on-site or off-site at the Los Carneros Mitigation Bank.

> 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 the following: [list of uses] (5) Incidental public services purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

Potentially Consistent. The proposed maintenance program includes all feasible mitigation measures, as described in the EIR. No other feasible, less damaging alternative is available. Maintenance of flood control channels, basins, and other facilities represents an allowable use - incidental public services. In no cases, are wetlands filled or diked. However, there are occasional needs to dredge channels to maintain capacity and prevent flooding. Work in estuaries is not included in the program.

> Section 30233. *(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.*

Potentially Consistent. The proposed maintenance program does not include dredging in estuarine or marine environments. However, dredge spoils from debris basin maintenance will be deposited on the beach for beach sand replenishment, if the spoils are deemed suitable by regulatory agencies.

> Section 30233. *(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional*

capacity of the wetland or estuary. Any alteration of coastal wetland identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of South San Diego Bay, if otherwise in accordance with this division.

Potentially Consistent. The proposed routine maintenance program does not include work in any of the 19 coastal wetlands referenced in the Coastal Act.

Section 30253. *New development shall: (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard. (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. (3) Be consistent with requirements imposed by an air pollution control district or the State Resources Control Board as to each particular development. (4) Minimize energy consumption and vehicle miles traveled. (5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.*

Potentially Consistent. The proposed program will reduce flood hazard, and therefore, provide protection for life and property. Channel shaping, desilting, and bank protection shall be accomplished in such a manner to reduce bank erosion and enhance bank stability. Finally, emissions from maintenance equipment shall be minimized in accordance with SB County APCD requirements.

8.14 POLICY STATEMENT FOR RIPARIAN CORRIDOR MANAGEMENT

The following goals and policies were developed by the District during the preparation of the 1991 Final EIR for the routine maintenance program. They provide overall guidance on the program, emphasizing protection of key environmental resources and public involvement. They also clarify the District's role relative to work on private property. The proposed updated program is consistent with the following goals and policies.

General Goals

Goal 1: Within riparian corridors, the following shall be protected, preserved, and whenever feasible, enhanced and restored: (1) biological resources including rare and sensitive species and terrestrial and aquatic habitat, (2) the geomorphologically stable form of streams, (3) water quality (4) visual quality, (5) open space, (6) recreational value, (7) archaeological and historical resources. Where feasible recovery plans shall be prepared, implemented, monitored, and maintained for each of the above resources that are at risk.

Goal 2: All flood control maintenance activities within riparian corridors shall be conducted according to the least environmentally damaging methods while providing the historic level of flood *protection, and according to the Standard Flood Control Maintenance Practices adopted by the County and in compliance with applicable state and federal laws. Selection of the least environmentally damaging flood control method for a given site shall include evaluation of the positive and negative impacts of; (1) no maintenance (vs. routine maintenance) at that site, (2) channel restoration (3) modification of bridges and culverts where applicable, (4) changes in surrounding and upstream land use, and (5) maintaining or establishing a geomorphic equilibrium.*

Goal 3: Prior to any maintenance activity, pre-project documentation of existing conditions shall be accomplished for all resources including biological, geomorphic, hydrologic, aesthetic, open space, recreational and cultural. Following maintenance, monitoring shall establish:(1) whether required mitigations were performed, (2) whether they were effective, (3) whether residual impacts arise or persist, and (4) whether further mitigation is needed.

Goal 4: Only those flood control maintenance techniques that account for and work within the geomorphic behavior of streams shall be employed. To minimize erosion, deposition, and frequent disruption, these maintenance techniques shall be selected on the basis of analysis of the existing physical processes (including sediment load and hydraulic conditions during flooding), and shall foster a stable geomorphic regime.

Goal 5: Within riparian corridors, canopies of riparian vegetation are essential for wildlife and aquatic habitat and shall not be degraded. Any alteration of existing canopies shall be consistent with Standard Flood Control Practices adopted by the County.

Goal 6: Where removal of native vegetation for flood control or other maintenance purposes is necessary within riparian corridors, on-site vegetation shall be re-established where feasible. Where on-site revegetation is infeasible, off-site revegetation shall be provided as close to the disturbed site as possible. In all cases: (1) like-kind vegetation shall be restored; (2) only native plant material shall be used; (3) this material shall be obtained at, or as near as possible, to the site being revegetated; and (4) there shall be no net loss of habitat value, significant vegetated area, or other significant corridor resource.

Goal 7: The biological and geomorphic linkage between marine, estuary, and stream environments shall be protected, preserved, and whenever feasible enhanced and restored. An emphasis shall be placed on maximum habitat richness and potential for anadromous fish habitat and mitigation routes.

Goal 8: Flood Control activities shall supplement and are integrated with other watershed management goals designed to reduce soil instability, erosion, and sedimentation.

Balancing Flood Protection and Environmental Goals

The District Board of Directors has adopted goals, policies and standard practices for routine flood control maintenance in order to provide historic levels of flood control while enhancing environmental protection for creeks, rivers, riparian corridors, and estuaries.

It is the District's Board of Directors intent to comply with federal, state and local laws, recognizing that permitting agencies require a higher level of planning, environmental review and mitigation for flood control work than has occurred in the past. The District intends to rely on the standard maintenance practices and standard or site-specific mitigation measures adopted by the Board in its future maintenance activities.

The feasibility of using particular practices or mitigation measures for specific projects will be evaluated by District staff and the Board in light of other relevant factors. Such factors include but are not limited to:

- *Applicable state and federal mandates for flood protection;*
- *Adequacy of funding available to complete projects and provide historic levels of flood protection from year to year;*
- *Specific social, legal, engineering or other conditions, which may make infeasible proposed mitigation measures or identified project alternatives.*

It is especially important that the District develop an improved capability to assess the long-term costs of its routine maintenance and environmental mitigation activities. The District Board should consider these costs and the long-term maintenance budget, and act to ensure that an environmentally responsible maintenance program which provides a historic level of flood protection is adequately funded.

Public Participation and Education

The District will provide regular access to information about its planned maintenance activities, and will solicit and consider input from affected property owners and the general public.

The annual plan and project approval process provides for public workshops, environmental hearings and Board of Directors hearings at which public input is encouraged.

District personnel will be trained to inform interested residents who inquire about their activities, and to advise people how to get information from or convey concerns to the District.

When flood control work on private property is proposed by the District or believed to be occurring by the landowners, the District shall make information explaining the benefits of habitat management as a flood control technique available to landowners and/or tenants.

The District will maintain a mailing list of county residents and organizations interested in being notified about upcoming studies, workshops and hearings. Planning timelines for maintenance *projects should ensure that environmental documents and staff reports are available for public review for a reasonable time before decision-making hearings.*

Within the limits of available staff time, the District will endeavor to educate community groups, businesses and residents living near creeks and rivers about how they can support District flood control and resource protection efforts. Voluntary efforts by private citizens can enhance the effectiveness of District flood control projects and resource protection efforts.

Herbicide Application

The District uses herbicides (1) To keep access roads clear of brush so that vehicular use is possible and fire hazards are minimized; (2) To control non-native vegetation, particularly species that are invasive and compete with beneficial species; and (3) To control vegetation in creek inverts where such vegetation could be uprooted and cause blockages downstream, or trap silt and thus decrease the capacity of the creek and increase the potential for flooding.

According to the recommendations of the Program EIR (EIR 90-5), the decision regarding the use of herbicides will be based on the comparison of feasibility and long-term adverse environmental impacts of alternative methods. Alternative methods are removal of vegetation by hand or heavy equipment. These alternatives are generally required at more frequent intervals and may involve disturbance of the soil.

The District may often prefer the use of herbicides where bank erosion is of concern. The roots of the treated plants stay in place and act as an erosion control blanket as well as protection against invasive plants during the establishment phase of vegetation planted by the District.

The District's herbicide program is performed and monitored by qualified and licensed applicators under the guidelines of the "Standard Maintenance Practices".

Work on Private Property

The District has authority for maintenance of major creeks, rivers, channels, and storm drains which convey significant offsite drainage. The District is not responsible for maintaining minor drainage features on private property, unless in the opinion of the District they are regional in nature, are in a condition which poses a potential threat to a large number of properties, or for which maintenance otherwise in the public interest.

A considerable amount of maintenance and mitigation activities occur on private property. Prior to any activity on private property, District personnel will attempt to obtain the consent of the owner. The consent may involve purchase of an easement. If the activity is related to surveying or data gathering, such a consent is not required.

If the owner's consent can not be obtained, the District may invoke its right of eminent domain. In activities involving condemnation, as in any other activity, the District will follow the principle of maximizing public benefit while minimizing private injury.

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9.0 CUMULATIVE AND GROWTH INDUCING IMPACTS

9.1 CUMULATIVE IMPACTS

Under CEQA Guidelines Section 15130, an EIR must discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," which means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Section 15065). Section 15355 of the CEQA Guidelines defines cumulative impacts as two or more individual effects, that when considered together, are either considerable or compound other environmental impacts. These cumulative impacts are changes in the environment that result from the incremental impact of the proposed project and other nearby related projects.

To address potential cumulative impacts of the proposed routine maintenance program (including the Santa Ynez River project) and other projects, a three-step analysis was conducted. First, a description of other types of projects which could affect similar resources along drainages in the County is provided. Second, the extent to which the impacts of the proposed maintenance program would be considered cumulatively considerable in the context of these other projects is evaluated. Finally, the significance of any potential cumulative impact is assessed.

The key environmental resources and/or conditions that would be affected by the proposed maintenance program include the following:

- Channel bed and bank stability
- Stormwater quality
- In-channel wetland and riparian vegetation
- Fish and aquatic species and their habitats
- Riparian dependent wildlife species and their habitats
- Sensitive plant, fish, and wildlife species

The key potentially significant impacts associated with the program include:

1. Potential unintended adverse hydraulic effects such as channel bed degradation
2. Loss of channel bottom wetland and riparian habitat due to direct disturbance
3. Degradation of stormwater quality from maintenance related to sedimentation and turbidity; application of herbicides; removal of wetland vegetation from the channel bottom
4. Direct disturbance to fish and wildlife species, including sensitive species
5. Indirect disturbance to fish and wildlife species from channel bed modifications, herbicide applications
6. Temporary increase in noise and air pollution emissions from heavy equipment
7. Degradation of visual quality of riparian vegetation
8. Direct disturbance to buried cultural resources
9. Decrease in sediment supply to local beaches

The general types of projects that could affect the same resources and involve similar impacts are described below.

- **Land Development Projects.** Development of residential, commercial, and industrial projects involves the conversion of vacant, agricultural, or native lands. Land development in the County is regulated through Comprehensive Plan and Coastal Plan policies and land use designations, zoning, and a land use permitting process. Development within a creek or removal of a creek is generally not allowed under the County's Comprehensive Plan, Coastal Plan, and Zoning Ordinances. In addition, the County has policies that require some type of setback from drainages, particularly watercourses that are undisturbed and contain native riparian habitat. The amount, type, and location of land development are guided by the County's Comprehensive Plan, including area plans for Montecito, Summerland, Toro Canyon, and Los Alamos. Land development in Lompoc, Buellton, Santa Maria, Solvang, Guadalupe, Santa Barbara, and Carpinteria is governed by the general plans of these cities. Soon, land development in the Goleta Valley will be directed by the new City of Goleta.

  Land development projects located adjacent to a creek or river can result in adverse impacts. For example, construction of a residential development adjacent to a creek could remove native upland habitat that is occasionally used by riparian species. The project could also degrade the quality of the riparian habitat due to the increased noise and lighting from the houses, disturbances to the creek from children and pets, and introduction of non-native plants from residential landscaping.

  Land development in a watershed can also have an indirect adverse effect on creek resources, even if the projects are located at a distance from the drainage. For example, the increased impervious surface associated with land development generally increases the volume of runoff and the peak discharge rates compared to pre-development conditions. These hydraulic changes can result in channel bed degradation and bank oversteepening along creeks in the watershed, often resulting in bank erosion. In addition, the land development introduces various pollutants into stormwater (including nutrients, metals, pathogens, and pesticides), which directly affect aquatic organisms and fish in the creeks and rivers of the watershed. Finally, natural sediment yield from a developed watershed can be substantially reduced, causing a reduction in sand supply for beaches.

- **Road Maintenance Projects.** The County Public Works Department and Caltrans conduct routine and emergency maintenance on roads throughout the County. One of the primary maintenance activities is cleaning and repairing culverts under roadways to ensure adequate conveyance of flood flows. The maintenance activities are similar to those performed by the District in drainages – that is, clearing obstructive vegetation, removing accumulated sediments, and removing debris dams. These actions can affect aquatic, riparian, and wetland resources located at or near the culvert or bridge, as described generally in Section 5.0.

- **Agricultural Activities**. Various agricultural activities in a watershed can affect the natural resources of creeks. For example, agricultural fields often exhibit higher erosion rates than native lands, causing increased sedimentation and turbidity in downstream reaches. Runoff from agricultural fields often has higher nutrient (due to fertilizers) and pesticide levels.

The proposed maintenance program would contribute to the above impacts to natural resources in the creeks and rivers of the County. In several instances, this contribution is considered cumulatively considerable. Significant cumulative impacts are listed below:

1. Increased land development will result in a greater need to perform maintenance activities due to the increase in public infrastructure and structures at or near drainages. Hence, the extent and frequency of the maintenance program will increase as land development increases in portions of the County in accordance with the Comprehensive Plan, and in local municipalities. A similar effect would occur as the public infrastructure system increases (i.e., roads, pipelines, utilities). In essence, most of the impacts described in Section 5.0 for the proposed program would intensify over time as new reaches are included in the routine maintenance program. This effect is considered a significant and unmitigable cumulative impact (Class I).

2. The impacts of the proposed maintenance program on water quality, wetland and riparian habitat, fish and wildlife, and sensitive species are considered cumulatively considerable in the context of the impacts of ongoing and future land development, agriculture, and roadway maintenance. All of these activities would combine to cause a cumulative degradation of riparian resources throughout the County. Significant effects may not be exhibited at any one location along a creek or river. However, the effect would be widespread and regional in nature as the County reaches full build out in accordance with the Comprehensive Plan. This impact is considered a significant and unmitigable (Class I).

There are several specific projects where the above cumulative impacts could be exhibited, as listed below:

- **Lower Mission Creek Flood Control Project**. This project is jointly sponsored by the City of Santa Barbara, County Flood Control District, and Corps of Engineers. The project consists of improvements to a 1.2-mile reach of lower Mission Creek, from Canon Perdido Street to Cabrillo Boulevard. The project would increase channel capacity and thereby reduce the frequency of flooding. A joint Environmental Impact Statement/Report (EIS/EIR) was prepared by the Corps and City and issued for public review in 1999. A Final EIS/EIR was completed in September 2000. The District would conduct routine maintenance of the project reach to ensure adequate channel capacity is present, and to remove any major flow obstructions. Each year the project reach will be inspected. Channel maintenance would occur at locations where more than 15 percent of the design capacity has been reduced. Vegetation would be removed or thinned using the least damaging method practical, beginning with herbicide treatment by hand crews, thinning by hand crews, and mowing with equipment. Only one half of the channel would be treated at any one time to preserve habitat in the affected areas. Sediments would be removed as necessary from the channel bed, including around fish ledges and baffles to maintain their functions. Work would occur in the fall after bird breeding and fish rearing seasons, and when flows are minimal. A biologist will conduct pre-maintenance surveys to identify sensitive resources and to implement standard species avoidance and relocation measures. Maintenance activities for this project would be governed by the conditions of approval issued by the City, Corps, and County.

- **Cachuma Project Biological Opinion and Fish Management Plan**. In 2000, the National Marine Fisheries Services (NMFS) issued a Biological Opinion to the Bureau of Reclamation, which operates the Cachuma Project on the Santa Ynez River, which requires Reclamation to implement various actions to protect the endangered southern steelhead below the dam. In the same year, Reclamation and the Cachuma Operation and Maintenance Board (COMB), representing the local water purveyors using the Cachuma Project, adopted a Fish Management Plan which includes the same actions in the Biological Opinion, developed as a parallel voluntary program. One of the key enhancements is to release water from the dam to provide rearing habitat along the mainstem. The amount, duration, and extent of downstream flows will vary based on the amount of water in the reservoir, runoff conditions, and presence of fish. However, under certain circumstances, flows up to 5 cfs may extend in the summer from Bradbury Dam to Alisal Bridge. These flows are likely to cause an increase in riparian growth, which in turn could potentially create channel obstructions. The District has not historically performed channel maintenance along the Santa Ynez River outside the Lompoc Valley. However, long-term implementation of this project may cause a need for new channel clearing under the proposed routine maintenance program.

- **Atascadero Creek Maintenance Program**. The District has adopted a separate maintenance program for lower Atascadero Creek. The proposed maintenance program would affect resources upstream of the reach maintained under the separate program. Both programs would affect similar resources (e.g., water quality, riparian habitat, aquatic species), and as such, could result in the cumulative impacts noted above.

- **Corps of Engineers Lower Santa Ynez River Feasibility Project**. In July 2001, the Corps of Engineers completed a Section 905(b) Study to determine if there is a federal interest in addressing flooding and environmental issues along the Lower Santa Ynez River, including the reach maintained by the District under the proposed project. The study recommended that the Corps proceed to the next level of study, called a Feasibility Study, to develop and assess the feasibility, costs, and environmental consequences of a permanent solution to flooding and habitat issues along the lower river. The study has not been funded, and would require many years to complete. However, it would provide an opportunity for a long-term solution to flooding issues, and possibly, modification or termination of the District's proposed maintenance program.

9.2 GROWTH INDUCING IMPACTS

CEQA Guidelines Section 15126(g) requires a discussion of the ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The discussion should also include project characteristics which encourage and/or facilitate other activities that, individually or cumulatively, could have a significant environmental impact. CEQA emphasizes that growth in an area should not be considered beneficial, detrimental, or of little significance.

In general, a project may be considered growth inducing if it meets one or more of the following criteria: (1) removes an impediment to growth; (2) induces population growth; (3) induces economic expansion; (4) establishes a precedent setting actions; and (6) results in the development or encroachment in an isolated or adjacent area of open space

The proposed maintenance program is designed to maintain existing channel capacity and flood hazard conditions. It is not designed to reduce flood hazard conditions in selected areas to allow development, nor to construct new flood control facilities. The latter would be pursued as separate projects subject to a different environmental review process.

The program would not alter floodplain boundaries or create opportunities for new development or increased economic activity in the downstream areas. It would not result in "development" in an isolated area. That is, it would not cause an undeveloped or farmed area to become developed in a manner that would create growth. Based on these considerations, the proposed maintenance program is not considered growth inducing.

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10.0 REFERENCES

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11.0 PREPARERS

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Appendix A

Figures 1-9

Appendix B

Exempt Facilities in the North County

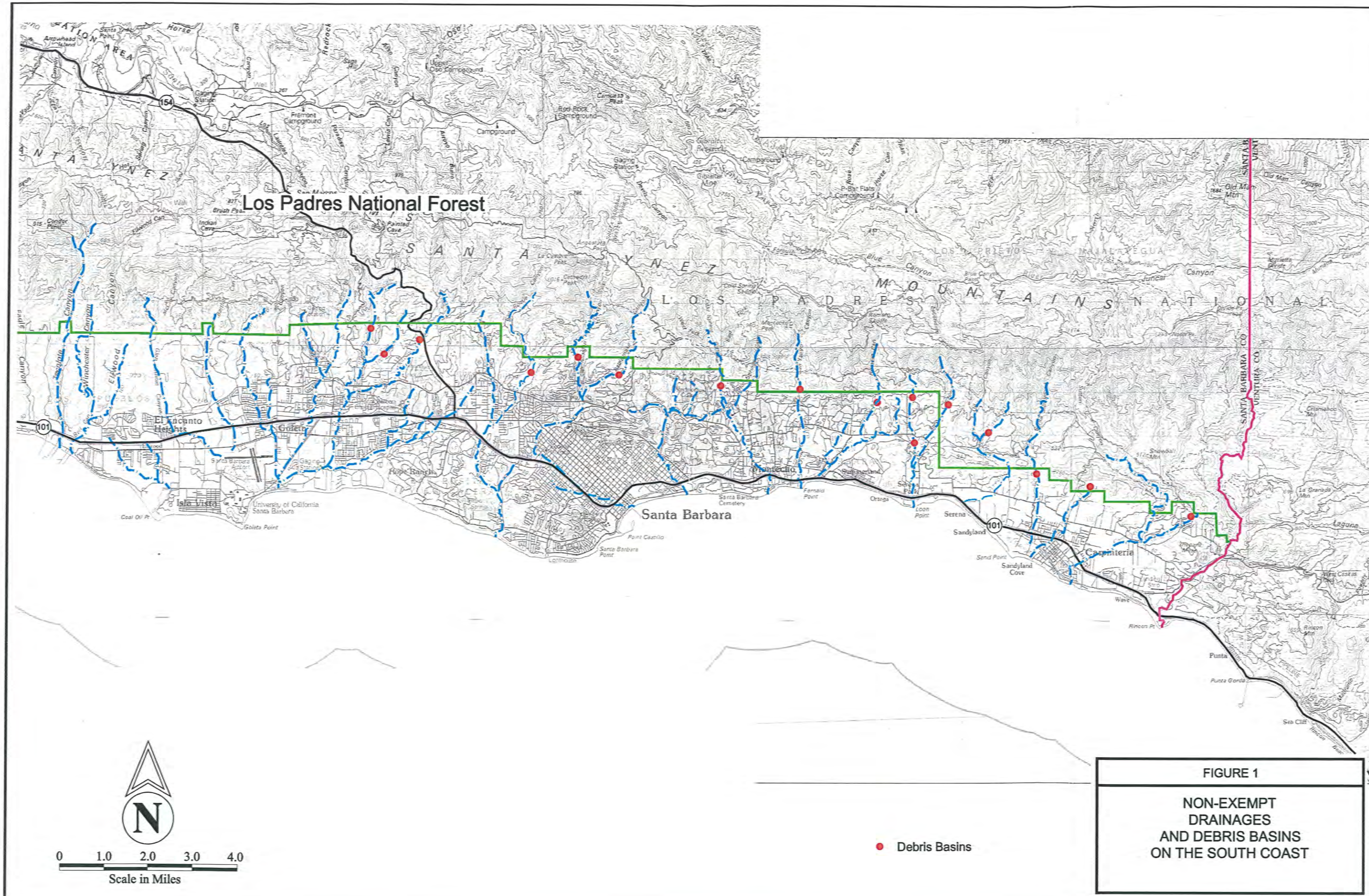

FIGURE 1

NON-EXEMPT DRAINAGES AND DEBRIS BASINS ON THE SOUTH COAST

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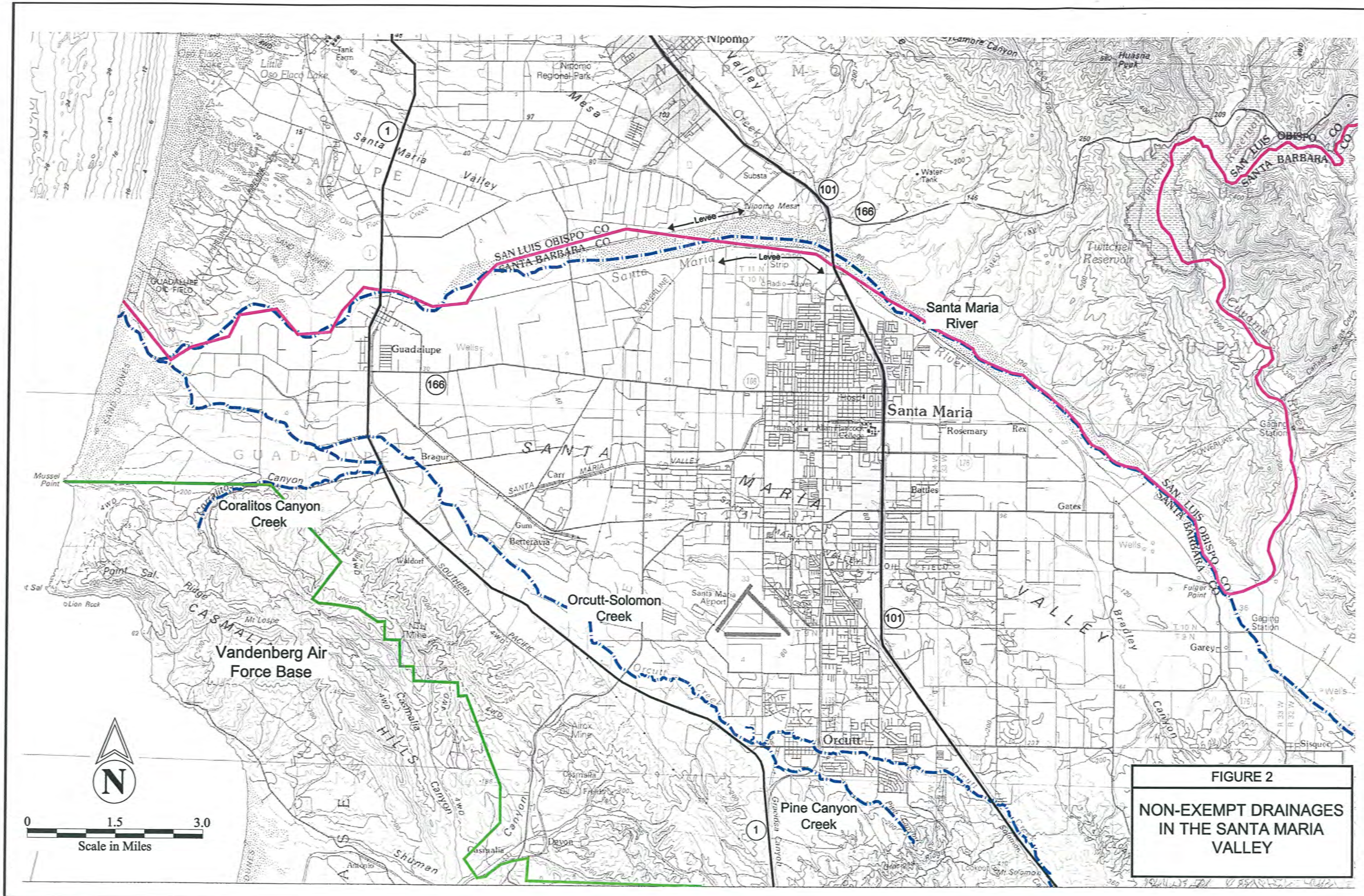

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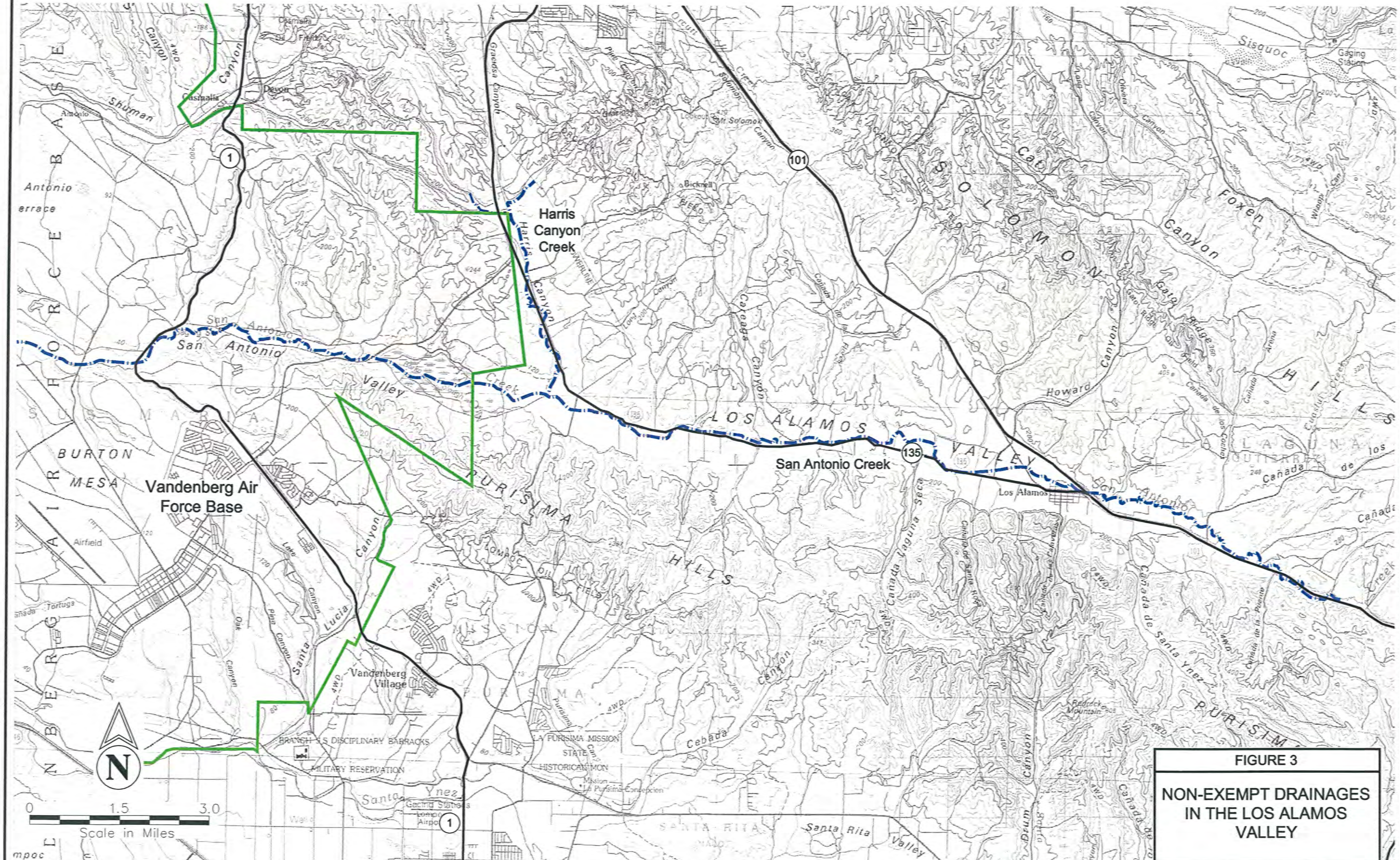

FIGURE 3

NON-EXEMPT DRAINAGES IN THE LOS ALAMOS VALLEY

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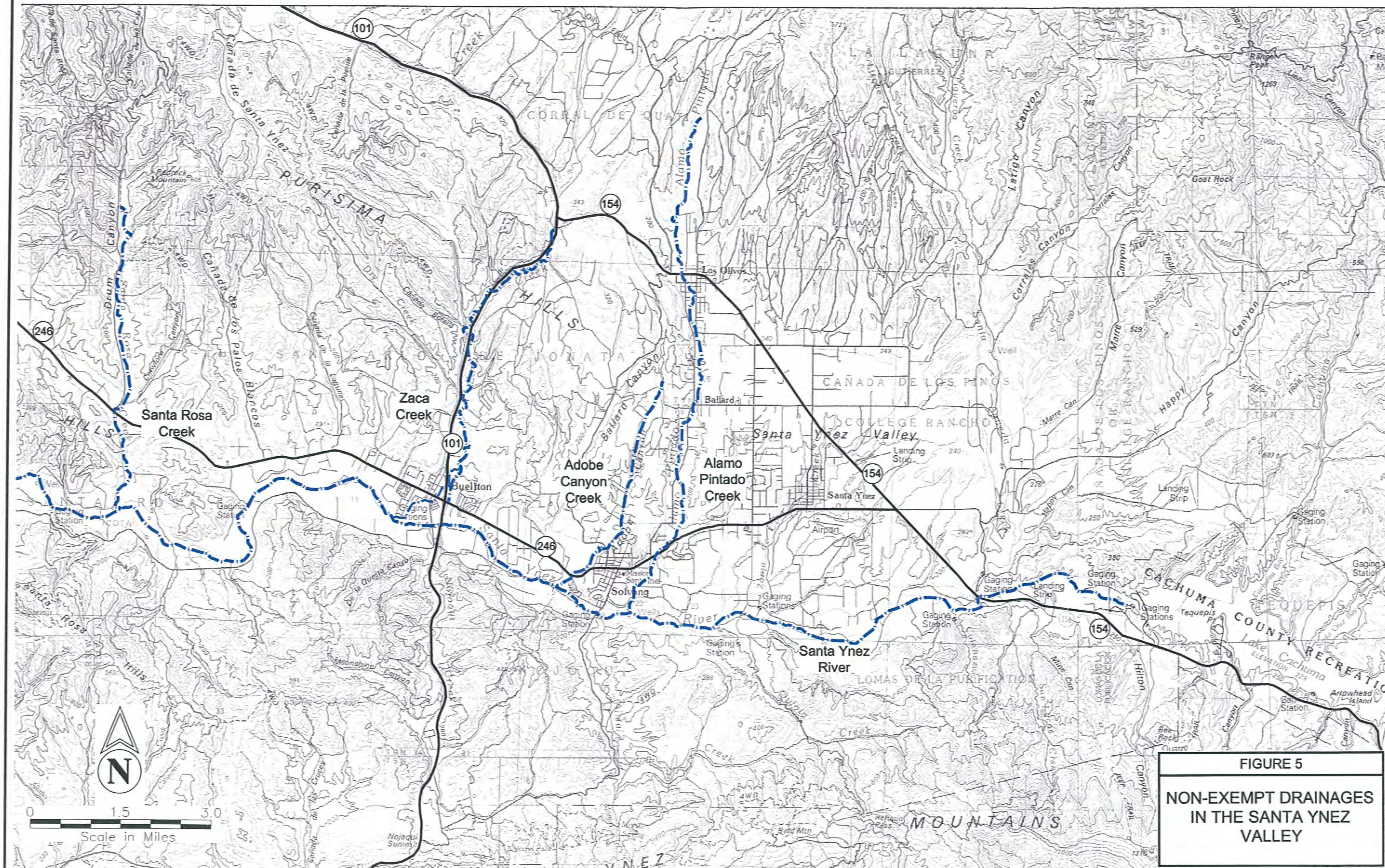

FIGURE 5

NON-EXEMPT DRAINAGES IN THE SANTA YNEZ VALLEY

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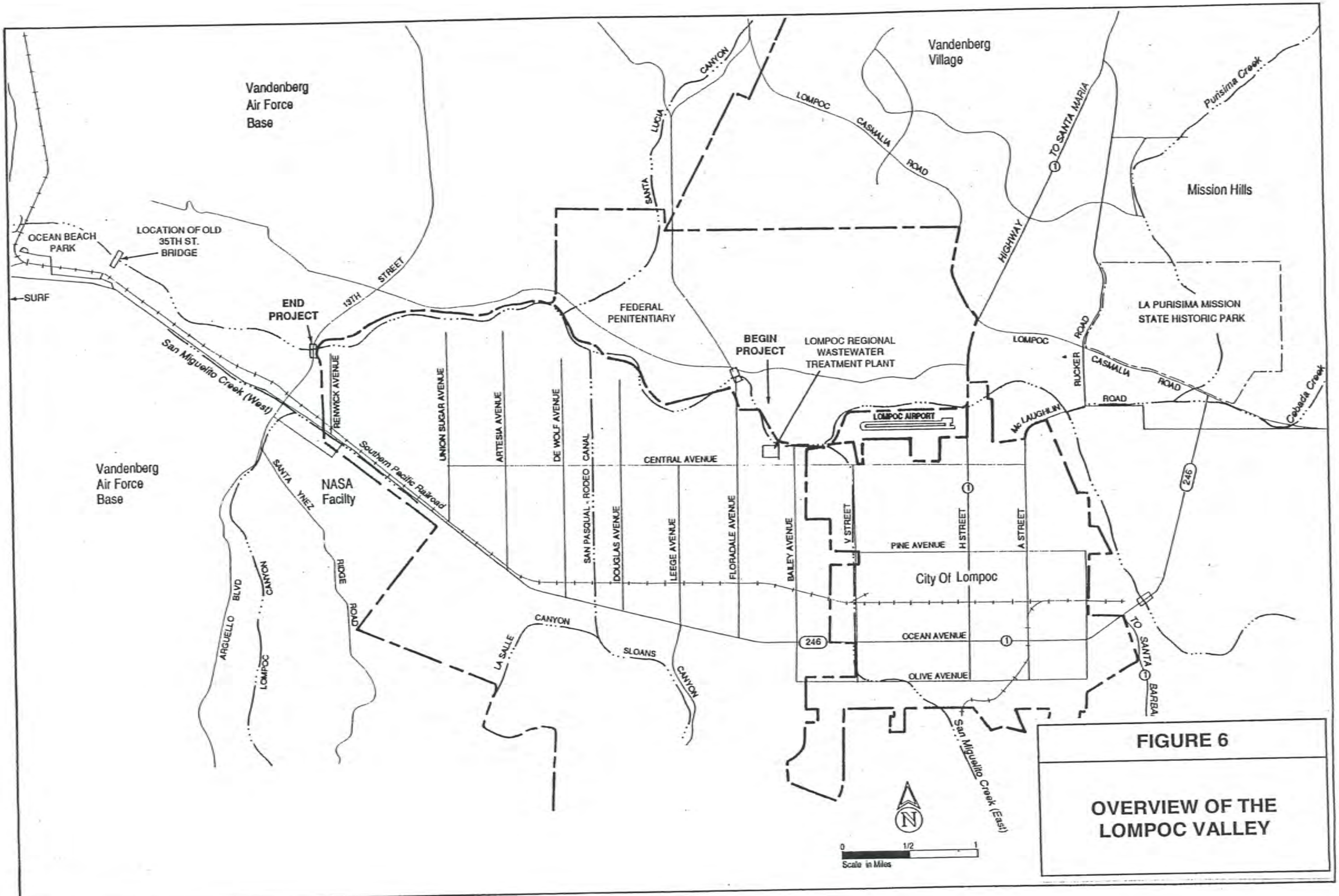

FIGURE 6

OVERVIEW OF THE LOMPOC VALLEY

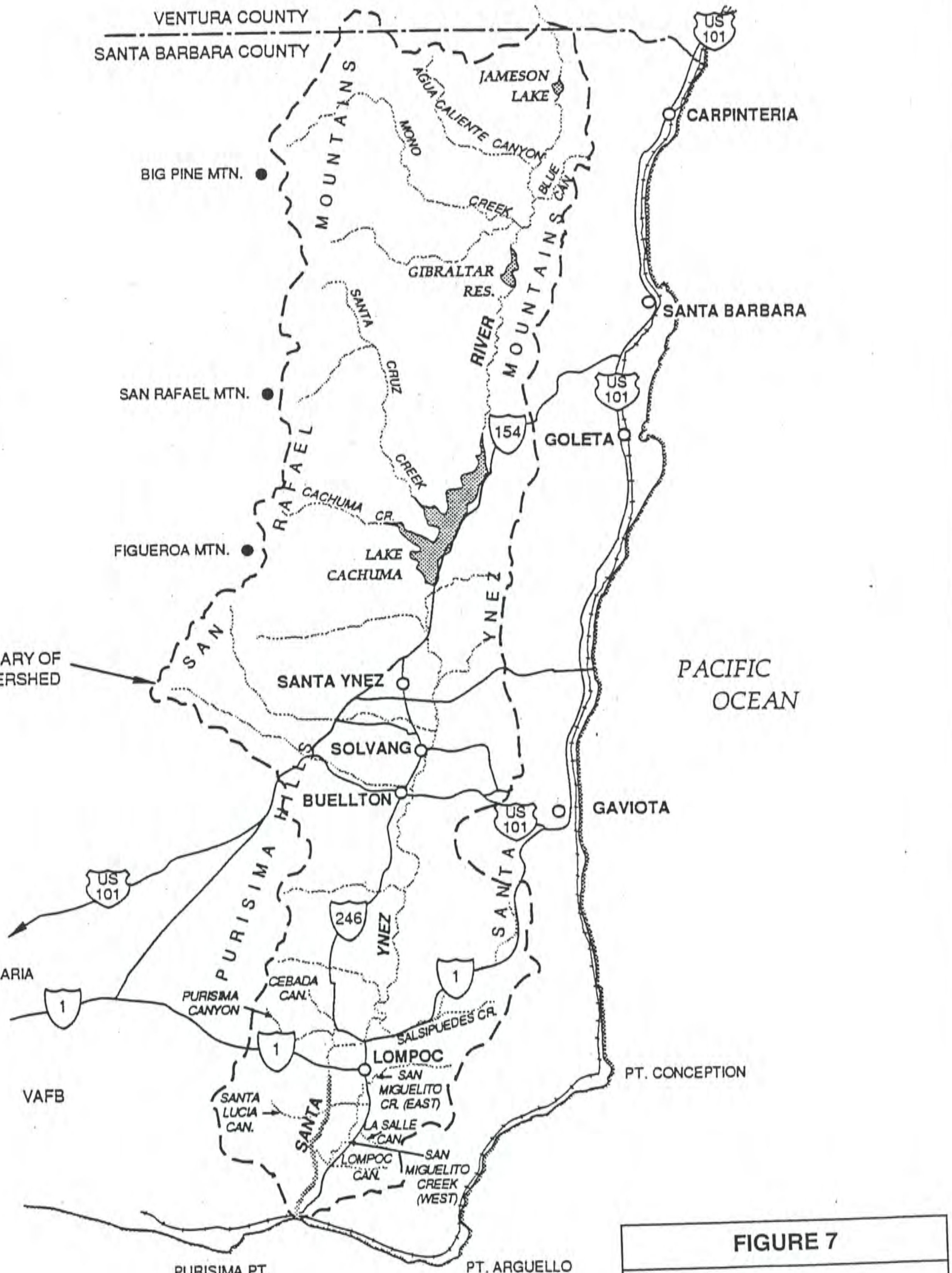

FIGURE 7

SANTA YNEZ RIVER WATERSHED

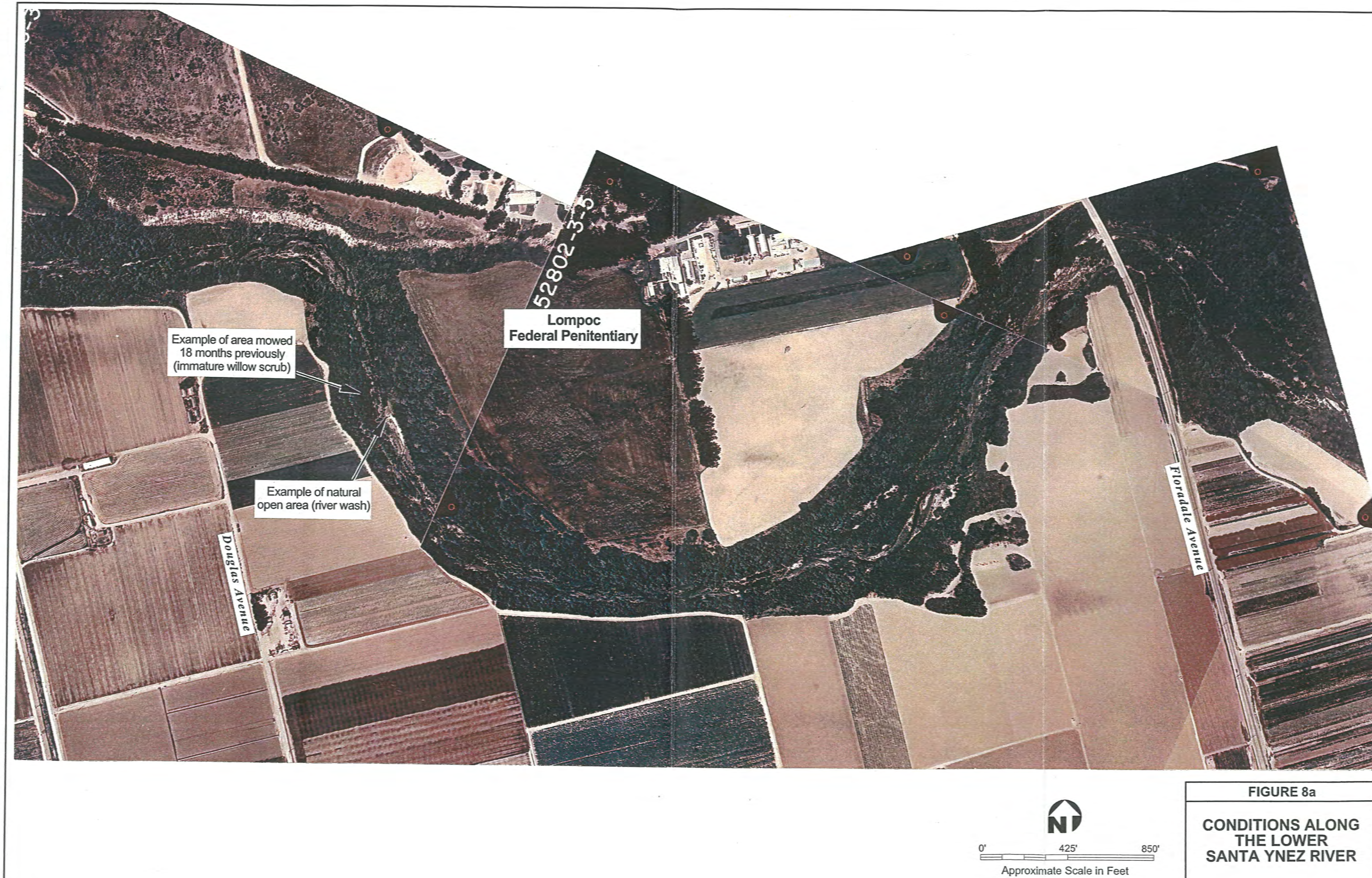

FIGURE 8a

CONDITIONS ALONG THE LOWER SANTA YNEZ RIVER

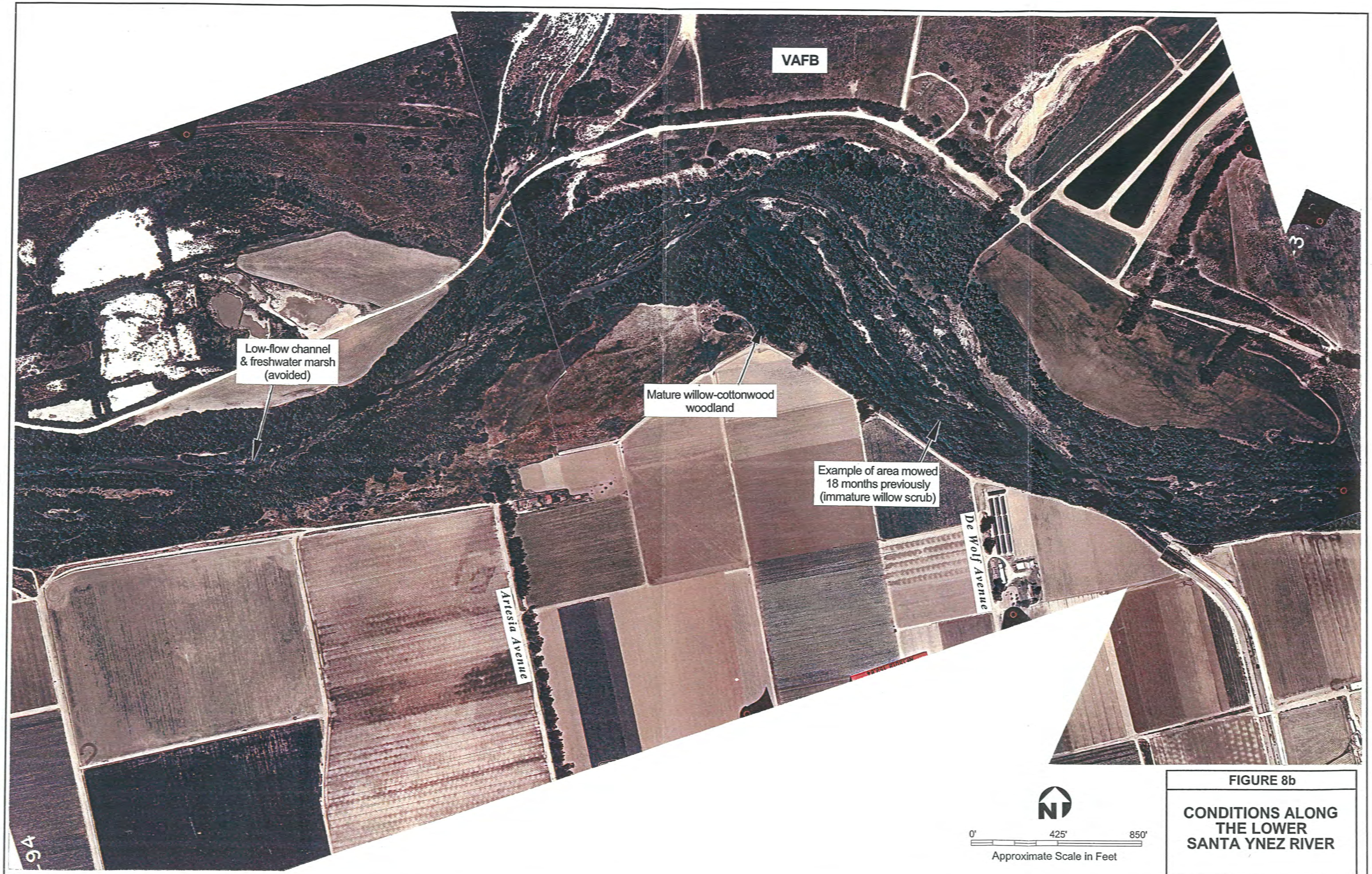

FIGURE 8b

CONDITIONS ALONG THE LOWER SANTA YNEZ RIVER

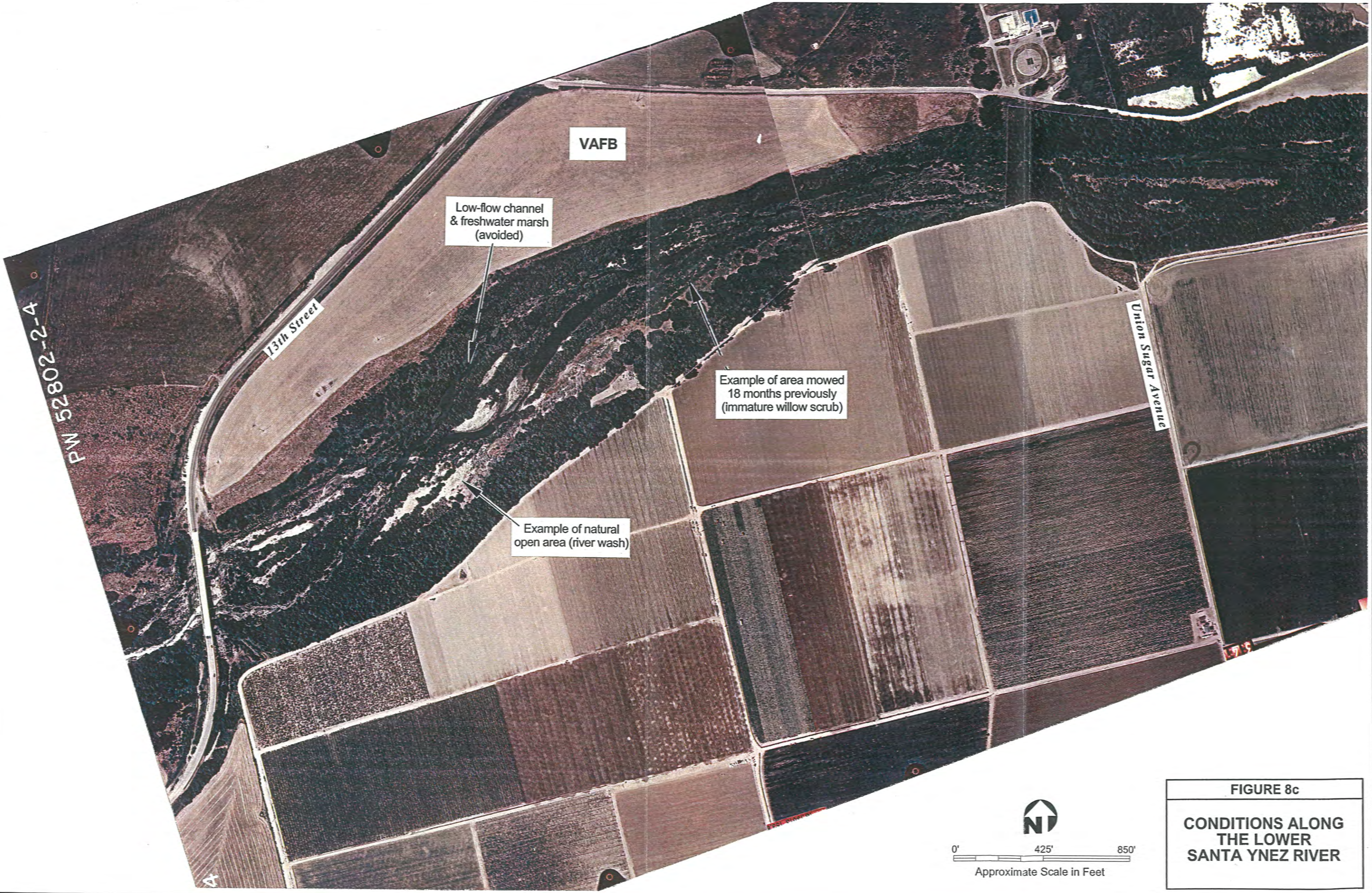

FIGURE 8c

CONDITIONS ALONG THE LOWER SANTA YNEZ RIVER

FIGURE 9a

HABITAT TYPES ALONG THE PROJECT REACH

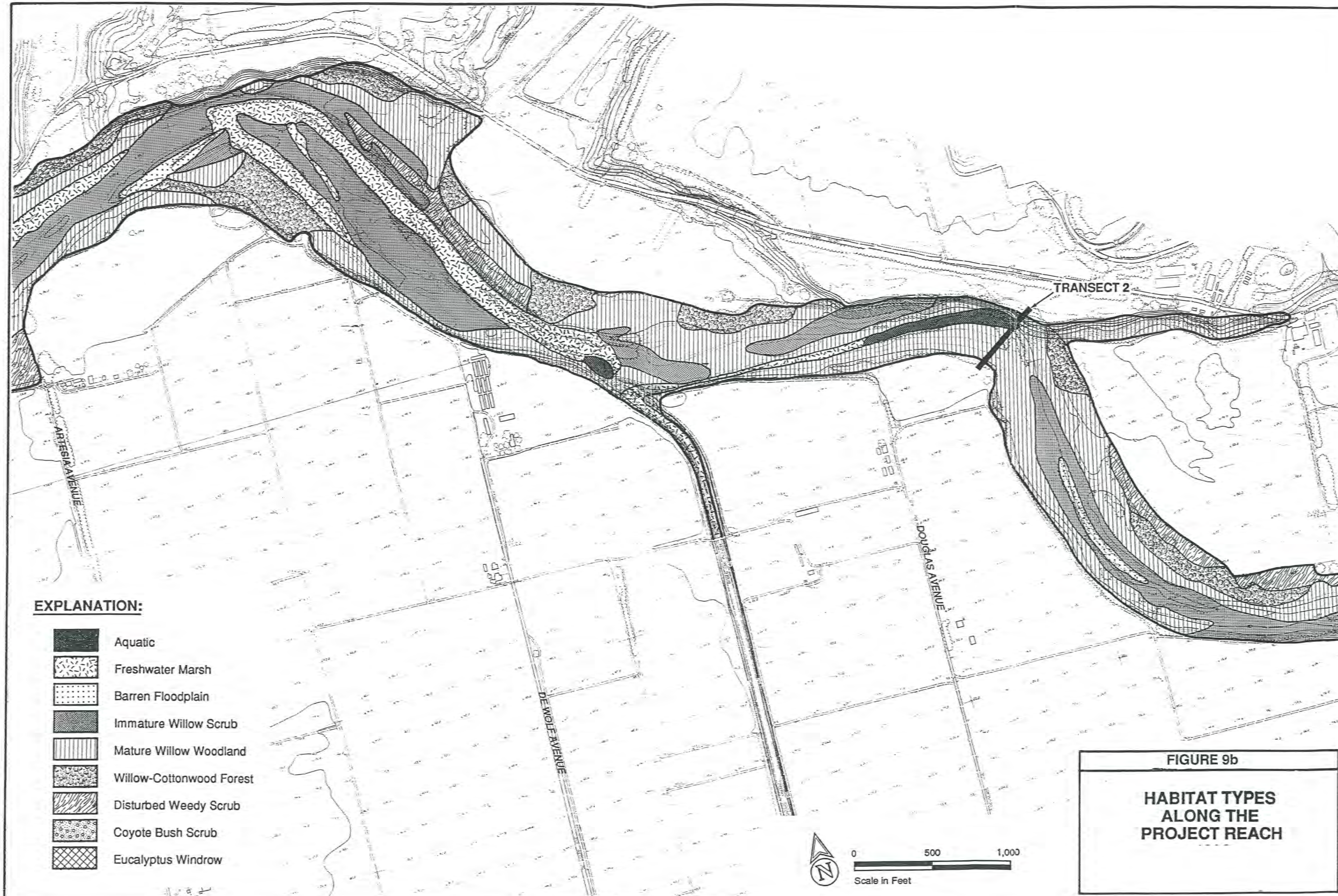

FIGURE 9b

HABITAT TYPES ALONG THE PROJECT REACH

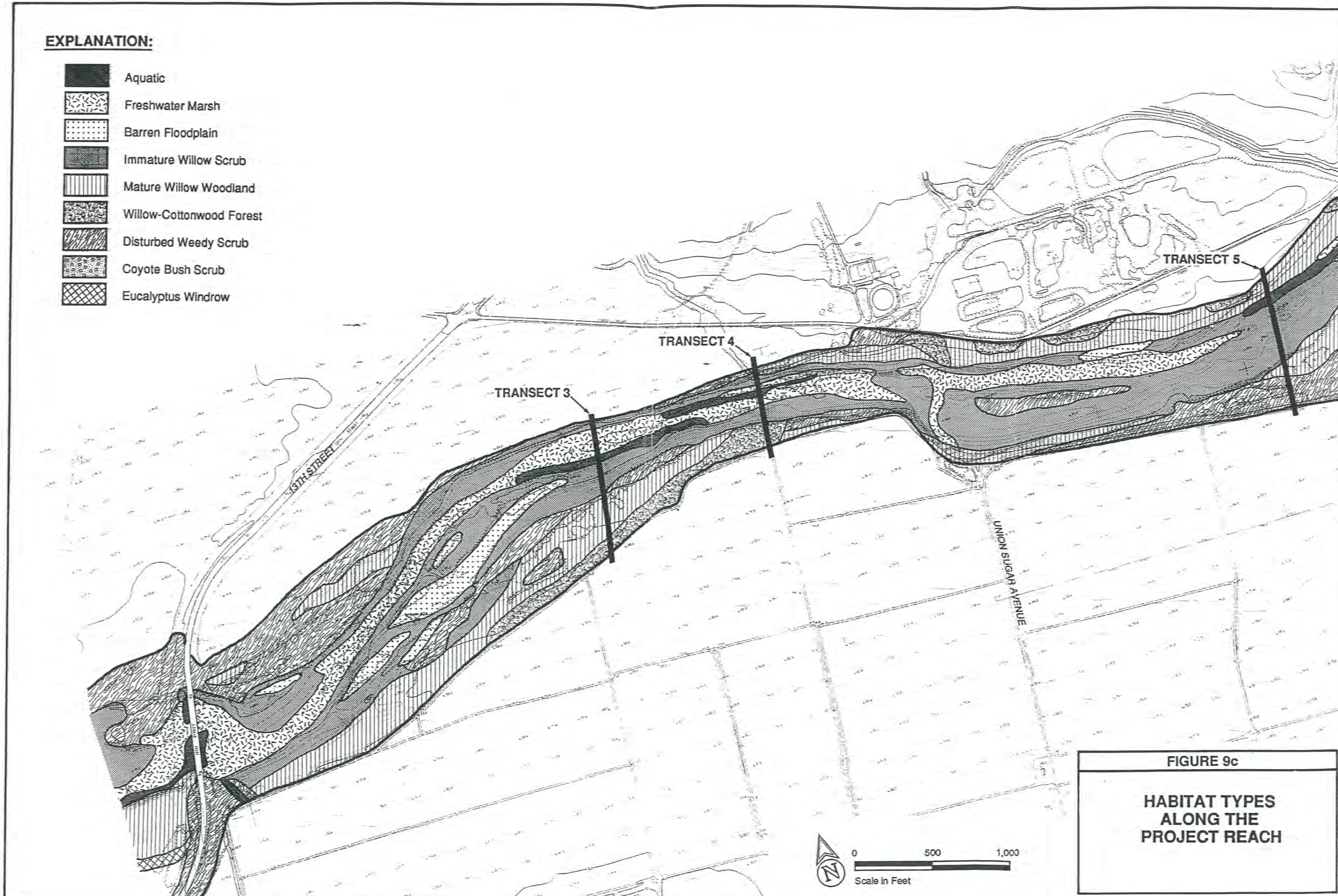

FIGURE 9c

HABITAT TYPES ALONG THE PROJECT REACH

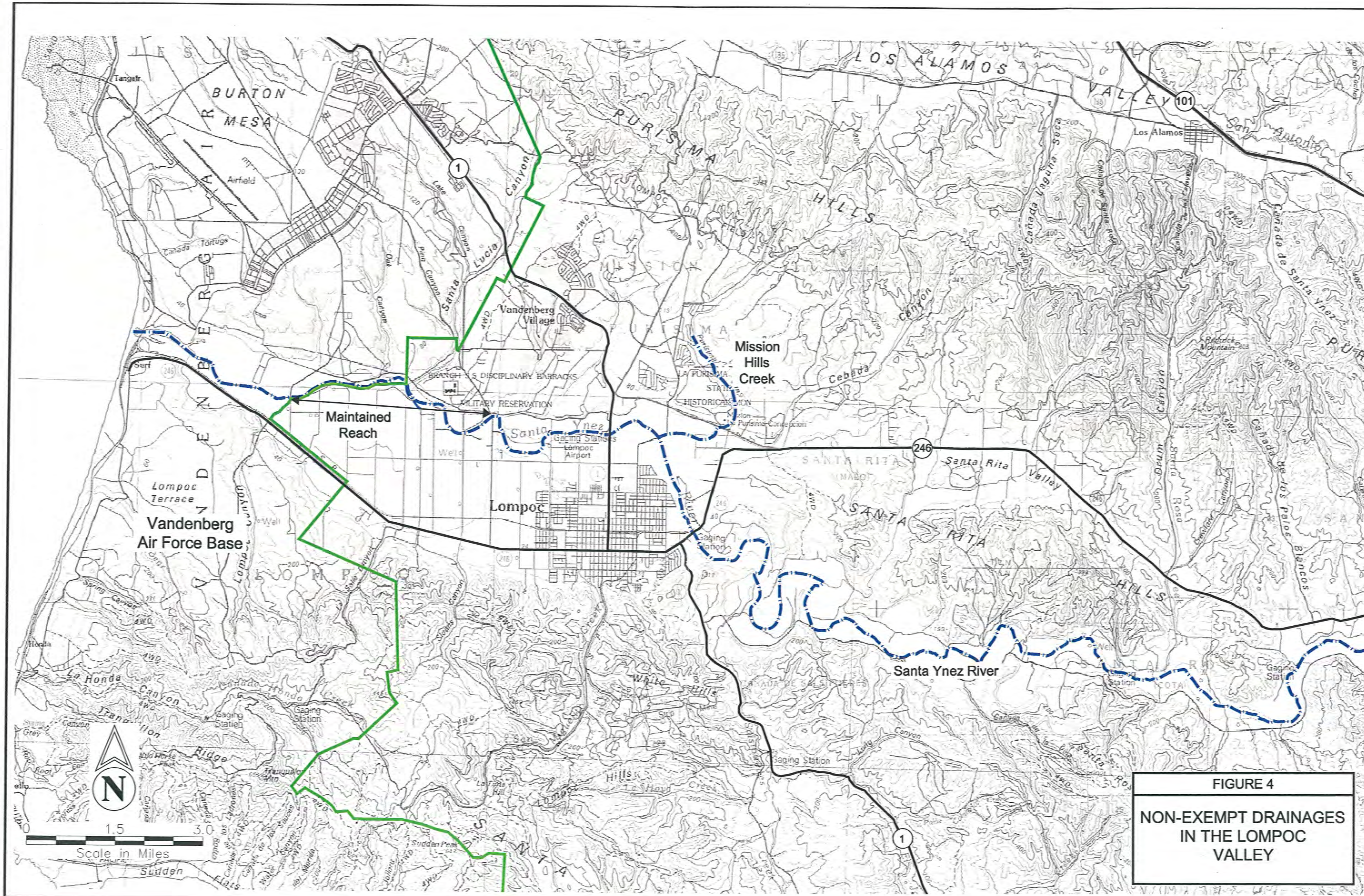

FIGURE 4

NON-EXEMPT DRAINAGES IN THE LOMPOC VALLEY

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Santa Barbara County Flood Control District
Routine Maintenance of North County Facilities

The following facilities are maintained by the District on a routine basis. Most facilities are maintained in the summer and fall to prepare them for the winter rains though all facilities occasionally need to be desilted after large storms to restore capacity lost to siltation. All spoils are either deposited on adjacent farm fields, nearby erosion holes, used on flood control access roads, or made available to the public. The District only uses Rodeo, Roundup, and Karmex herbicides. Notices of Exemption will be filed for all these facilities with the approval of the Santa Barbara County Planning and Development Department. Locations of the projects are either included in the description or refer to a map.

<u>Santa Maria/Guadalupe:</u>

<u>Ditches:</u>

1- California St. Ditch
This ditch has a concrete "v" bottom with earth sides. On an annual basis the District clears the channel bottom of silt and debris with a Gradall. The earth banks are mowed with the Gradall and sprayed to keep the weeds down for fire control. Along California St. upstream from Bradley Rd.

2- Crescent Ave. Ditch
This ditch has a concrete "v" bottom with earth sides for .75 miles and approximately 200' is an earthen channel. After every rain the District clears the channel bottom of silt and debris with a Gradall and/or a dozer, spoils are used to improve flood control access roads. There are some eucalyptus trees adjacent to the ditch which can damage the concrete channel, these occasionally have to be removed. From Crescent Ave. to Solomon Creek.

3- Toppie Reese Ditch
This ditch has a concrete "v" bottom with earth sides. On an annual basis the District clears the channel bottom of silt and debris with a Gradall. The earth banks are mowed with the Gradall and sprayed to keep the weeds down for fire control.

4- Industrial Parkway Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

5- Santa Maria Airport Ditch
This ditch is half concrete lined and half earthen. On an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The earth banks are mowed with the Gradall and sprayed to keep the weeds down for fire control the channel bottom of the earthen section is sprayed to reduce silt trapping vegetation.

6- Unit Two Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

7- Unit Two Tailwater Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

8- Blosser Ditch
This is an asphalt ditch with some earthen sections. On an annual basis silt and debris is removed with a Gradall and/or a dozer. The earthen sections are sprayed to control silt trapping vegetation and for fire control.

9- Bradley Ditch
Approximately 75 % of this ditch is concrete with the remaining 25% earthen. The entire ditch requires desilting depending on the flows. The earthen section is sprayed to control weeds.

10- Thornberg Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

11- Sonya St. Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation..

12- Tanglewood Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

13- Battles Union Oil Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

14- Adams Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

15- Diaz Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

16- Dutra Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

17- Kaiser Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

18- Lake Marie Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

19- Texaco Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

20- Bradley Canyon Channel
The Corps of Engineers constructed this channel as part of the Santa Maria Levee project. On an annual basis the District discs the low bench areas and desilts the low flow channel with a gradall. The levee along the west bank of the channel is sprayed for weeds and a rodenticide is applied. Just east of Fugler Pt. on the Santa Maria River continuing upstream approximately 2 miles.

21- Santa Maria Levee
The Corps of Engineers constructed this levee and the District is mandated to maintain it. On an annual basis the levee is sprayed for weeds and a rodenticide is applied. Maintenance also consists of resurfacing the face of the levee with rock, adding base to the top of the levee and desilting the culverts that run through the levee. From Guadalupe to Fugler Point approximately 26 miles.

22 - Green Canyon Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

23- Upper Green Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

24- Upper Upper Green Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

25- Guadalupe City Ditch
This is an earthen ditch that runs through the city of Guadalupe and on an annual basis, the District clears the ditch of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

Basins:

26- Foxen Woods Basin #3
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. In the Foxenwoods Subdivision.

27- Deerfield Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. In the Deerfield subdivision.

28- Foxen Woods Basin #2
This basin is a county park and the District maintains the inlet and outlet pipes annually. After high flows it is sometimes necessary to remove the silt with a loader and a dozer. In the Foxenwoods subdivision.

29- Orcutt-Solomon Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control..

30- Getty Basin
This is a recharge basin and it is very important to remove all the silt after the winter rains to assure good percolation. Silt is removed with dozers, loaders and scrapers. The inlet structures are repaired on an as-needed basis..

31- Bradley Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control..

32- K-Mart Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. Behind K-Mart in Santa Maria.

33- Mud Lake Basins 1,2 and 3
On an annual basis these basins is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control.

34- Oak Knoll Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. In the Oak Knoll Subdivision.

35- Tanglewood Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control.

36- Blosser Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control.

37- Kovar Basin
This is a recharge basin and it is very important to remove all the silt after the winter rains to assure good percolation. Silt is removed with dozers, loaders and scrapers. The inlet structures are repaired on an as-needed basis.

Santa Ynez/Lompoc:

Ditches

1- Amby Channel
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

2- Airy-Skytt Channel
Half of this channel is concrete lined and the other half is earthen. Both sections of the creek have to be desilted after high flows with a Gradall and/or a dozer. An application of herbicide is made in the earthen channel to reduce silt trapping vegetation.

3- Thumbelina Ditch
Most of this channel is concrete lined and requires desilting annually. A short reach of the ditch is earthen and typically requires very little desilting. The earthen portion of the ditch is sprayed annually to control the weeds.

4- Zanja de Cota Tributary
The reach of this tributary to Zanja de Cota creek is located between Meadowvale and Tiivola Streets in Santa Ynez. Several check structures are located in this area that occasionally need to be cleared of vegetation and debris or require repair. The check structures are made of concrete and are approximately 2' high. This area is susceptible to downcutting and subsequent bank erosion. Therefore, the check structures must be repaired when damaged.

5- Cebada Cyn. Creek/Channel
Approximately 1/3 of this channel is concrete lined and the rest is earthen. The concrete section and approximately 500' of the earthen channel upstream is desilted after high flows. The channel bottom of the earthen section is sprayed to reduce silt trapping vegetation. Upstream of Highway 246 the District shapes portions of the creek just upstream of the SCS drop structures with a dozer for approximately 100'. It is necessary to shape a pilot channel to each drop structure so that the flows aren't redirected around them causing sever erosion.

6- East-West Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

7- Miguelito Channel
On an annual basis this concrete lined channel is cleared of garbage and other debris with a loader. An application of herbicide is made to sterilize the expansion joints. There is some dirt above the concrete channel where the weeds are either burned or sprayed for fire control.

8- Rodeo-San Pascual Channel
On an annual basis this concrete lined channel is cleared of garbage and other debris with a loader. An application of herbicide is made to sterilize the expansion joints. Several pannels were destroyed during the floods of 1998 and will be replaced using Natural Resource Conservation funds.

9- Bob Hunt Ditch
On an annual basis the District shapes the channel just upstream of the 20 SCS check structures. The work is done with a D-4 dozer and keeps the water directed at the check structures so that the water doesn't bypass them and cause severe erosion. The ditch begins at Veiera Farms on Highway 246 and terminates at the confluence with Santa Rosa Creek approximately 1 mile.

10- Hoag-Santa Rita Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation. On the Hoag property approximately 5 miles east of Lompoc, the ditch begins approximately 1.5 miles upstream of Highway 246 and terminates at the Santa Ynez River. Four check structures were repaired/replaced in 1998 and will be maintained as necessary.

11- Lilley-Hayes Ditch
There is a 42" culvert from this ditch to Cebada Channel that was constructed by the SCS. The District maintains the channel just upstream of the culvert by shaping the channel with a D-4 dozer. This keeps the water directed at the culvert so that no erosion or flooding occurs on the adjacent fields.

12- Mercury Ditch
This ditch takes runoff from the Vandenburg Village subdivision. The ditch runs along the side of a hill and eventually drains into Davis Creek. Using a D-4 dozer the ditch is aligned such that the east bank does not experience erosion. If the east bank erodes the water floods on to the Lompoc-Casmalia Highway.

13- Mission Hills Channel
This channel run through the Mission Hills Subdivision. There are several SCS check structures that are maintained by the District. Using a D-4 dozer the channel is directed at the check structures to reduce the potential for erosion.

14- Calvert Ditch
This ditch runs parallel to Lompoc-Casmalia Road for approximately 1000' and then turns to the south and flows through cultivated fields to the Santa Ynez River. The District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

<u>Basins:</u>

15- Cemetery Debris Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. The basin is located off "C" St. just south of the entrance to the cemetery.

16- Buellton Basins 1 & 2
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. Located just north of the subdivision to the west of Ave. of the Flags in Buellton.

17- Miguelito Basin
This is a very large debris basin that fills after high flows. The material in the basin is mostly diatomaceous earth and is deposited at the Cellite Corporation's "No.9" disposal site. Loaders and dozers are used in this operation.

18- Mission Hills Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control.

19- Rodeo-San Pascual Basin
On an annual basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control.

20- "R" St. Basin
This basin is located in the city of Lompoc and is periodically desilted using a loader and sometimes a gradall. The spoils are made available to the public. Approximately 2,000 c.y. need to be removed at this time. At the end of "R" St. upstream of Willow Ave.

21- Fault Canyon Basin
On an as needed basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. The basin is located behind 6 Santa Clara Street in Lompoc.

22- Mormon Canyon Basin
On an as needed basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. The basin is located behind 625 University Drive in Lompoc.

23- Rudolph Basin
On an as needed basis this basin is desilted with a Gradall and/or a dozer and loader. The banks of the basin are sprayed and/or mowed for fire and weed control. The basin is located on the opposite side of the street from 1007 Olive Avenue.

<u>Los Alamos:</u>

1- Hopkins Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

2- Howard Canyon Ditch
This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

3- Lompoc Grade Ditch

This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation. This is a small ditch that begins just east of where San Antonio Rd. crosses San Antonio Creek and continues upstream 1000 yard.

4- Los Alamos East Side Ditch

This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

5- Roy Smith Ditch

This is an earthen ditch and on an annual basis the District clears the channel bottom of silt and debris with a Gradall and/or a dozer. The channel bottom is sprayed to reduce silt trapping vegetation.

Appendix C

1992 Standard Maintenance Practices

Santa Barbara County Flood Control and Water Conservation District
STANDARD MAINTENANCE PRACTICES

I. AVOIDANCE OF SIGNIFICANT RESOURCES

1. Any Federally, State or locally listed species along with its supporting habitat shall be protected and avoided.

2. Canopy vegetation shall be preserved and enhanced as a biological and flood control resource.

3. Bank vegetation and buffer zones shall be protected and enhanced; this includes native and beneficial non-native trees of all age classes, shrubs and herbs.

4. River pilot channels shall be narrow enough for shading by adjacent vegetation. Any significant shading vegetation that is removed shall be replaced.

5. Wherever feasible, vegetation shall be removed in a selective pattern with significant segments of rivers, streams, and estuaries free from maintenance activity.

6. Shallow and deep aquatic habitats, including pools, plunge pools and riffles shall be retained and restored and wherever feasible established; where feasible, natural stream flow shall be maintained during flood control activities.

7. Wherever feasible and desirable, certain sensitive animals should be relocated prior to flood control activities. Relocation shall be to nearby appropriate habitat within the same watershed.

8. Unless otherwise permitted, spoil, piles and dewatering activities shall be located outside of estuaries and riparian corridors.

9. Wherever possible, significant cultural resources shall be avoided and protected.

10. Where significant cultural resources cannot be avoided, appropriate data recovery programs pursuant to Santa Barbara County Cultural Resource Guidelines shall be implemented.

II. MODIFIED PRACTICES

A) General

11. Flood control activities that would impact fish shall not occur on creek or river reaches that are known to support fish during spawning and rearing season. Activities that would impact birds shall not occur on reaches of creeks, rivers or estuaries that are known to support sensitive riparian-dependent and estuary-dependent birds if nesting and/or breeding activity has been identified. A pre-project survey to identify nesting and/or breeding activity shall be required for flood control activities during nesting season.

12. Major brushing, desilting, and shaping shall be justified by a needs analysis and appropriate technical engineering analysis.

13. Desilting and shaping shall be limited to the period of lowest flow in intermittent and ephemeral streams. Where winter erosion is a factor, the early part of the dry season should be utilized.

14. Where flood control activities involve earth movement requiring an individual 404 permit within the stream channel and where appropriate for preservation of seed bank and soil nutrients, the top two feet of soil shall be stockpiled in a location that does not impact riparian corridor resources, including cultural resources, and then redistributed over original site after work is finished.

15. Vehicle emissions shall be reduced by ensuring proper vehicle maintenance and by minimizing simultaneous-vehicle use.

16. All possible vehicle use shall be curtailed during periods of expected poor air quality.

17. Field personnel shall be informed of pertinent flood control and environmental objectives and policies, and they shall feedback field observations to their supervisors.

18. Field personnel shall be trained to recognize and avoid negatively affecting important plants, animals, and cultural resources.

19. All on-site and adjacent landowners and current occupants shall be noticed and informed of and invited to comment on, flood control activities in their area.

20. Invasive exotic or other undesirable plants shall be controlled by removal of seeds or other reproductive parts, by brushing or, if hand removal is not feasible spraying; however, impact to adjacent resources shall be minimized.

B) Modified Brushing

21. Whenever feasible, the use of heavy earth-moving equipment for brushing shall be avoided. Bank vegetation shall be preserved during brushing.

22. Overhanging vegetation shall encouraged consistent with the riparian corridor goals for canopy creation. Flood control shall minimize removal based on the need for heavy equipment passage along the creek inverts.

23. The use of cut vegetation or woody debris as revetment and biological habitat shall be tested.

24. Where feasible, herbaceous vegetation and smaller woody vegetation should be hand cleared rather than mowed and should be mowed rather than brushed by a more disruptive means.

25. Adjacent residents shall be notified prior to brushing activities; and where feasible, chainsaws and dozers shall only be used between 8 a.m. and 5 p.m.

26. Brushing equipment shall be maintained so that noise is as low as possible.

27. Significant brushing in river channels shall be limited to establishment and maintenance of low-flow pilot channels and control of invasive exotic or other undesirable plants.

28. Brushing shall be minimized in stream channels composed of fine-grained unconsolidated sediment.

C) Modified Spraying

29. The least environmentally damaging herbicides and techniques shall be used. Presently, the least environmentally damaging herbicides are Rodeo (Glyphosate), Roundup (Glyphosate), and Karmex (Diuron).

30. Krovar I, Oust, and Telar shall not be used.

31. Other licensed herbicides shall be used only upon a showing that the least environmentally damaging herbicide will be ineffective or infeasible, and that the selected herbicide minimizes environmental impacts including but not limited to: (1) damage to non-target vegetation through surface runoff, leaching, drift from wind, or contamination from relocated soil; (2) toxicity to birds, aquatic organisms, terrestrial organisms; and (3) upset of ecological balance. Preference should be given to herbicides that have been most thoroughly documented as being safe in independent scientific literature.

32. Weedar Emulsamine E-3 or similar 214-D formulations shall be used only-with appropriate permits and in compliance with all special local need registration requirements.

33. Aerial application of herbicides shall not be used.

34. Hand-held sprayers, rather than boom sprayers, shall be used wherever feasible.

35. Application of all herbicides shall be made in accordance with label recommendations, with all required and reasonable safety measures, and, where applicable, with appropriate permits and with special local need registration requirements.

36. Herbicides shall not be applied when wind speeds are in excess of 5 miles per hour.

37. Herbicides shall not be applied when rain is expected within 6 hours of application.

38. Workers mixing herbicides shall wear eye protection and gloves. When pouring herbicides, workers shall keep containers below eye level.

39. Herbicides, fuels, lubricants or equipment shall be stored, poured or refilled only outside of riparian corridors, channels, and estuaries.

40. Guidelines shall be adopted and implemented for herbicide, fuel, and lubricant spills, spill prevention, containment, monitoring, and clean-up.

41. Roundup, Karmax, or other herbicides of similar formulation shall never be applied on or near open water-surfaces.

42. Rodeo, or any subsequently licensed herbicide of similar formulation, shall not be applied within one-half mile upstream of potable water intakes.

43. If significant plants are present in or around estuaries or f lowing stream channels, then Rodeo or similar herbicides shall not be used.

44. Only a recommended surfactant, such as Agridex, shall be used in combination with Rodeo, when needed.

45. One liter random water samples from stream channels or estuaries treated with Rodeo shall be taken within ten hours of application. These samples shall be analyzed for glyphosate acid levels to verify that levels do not exceed the aquatic safety standard of 130 parts per billion. Monitoring shall be performed initially on two representative streams and shall involve worst-case scenarios of shallow water depth and slow water movement in areas not subject to significant tidal flow. The worst-case scenario shall be described and documented by video or still photographs. Reasonable precautions shall be taken to preserve the integrity of the monitoring and sampling process. Further monitoring of Rodeo will be based on test results. Any violation of the aquatic safety standard shall require immediate cessation of herbicide application until appropriate corrective action is taken.

46. Significant spraying in river channels shall be limited to the establishment and maintenance of pilot channels and control of invasive exotics or other undesirable plants.

47. Spraying should be confined to the channel bed except where necessary for invasive weed control on channel banks.

48. Spraying shall be minimized in channels composed of fine grained unconsolidated sediment.

49. If herbicides are applied in areas open to public use, temporary, symbolic, and herbicide-specific; warning signs shall be posted prior to the application and remain until 48 hours after the application.

D) Modified Desilting

50. Where appropriate, silt fences, settling basins, and other sediment traps shall be temporarily used down-stream from desilting in perennial streams.

51. Mechanical equipm2nt which minimizes impacts to channel beds shall be used whenever feasible.

52. Farmers should be encouraged to minimize soil erosion and to trap tail-water sediments in settling basins before discharging into stream channels or estuaries.

53. Hydraulic dredges should be used, where feasible, in place of gradalls and draglines, especially to avoid spoil-piling and dawatering at ditches, streams, and estuaries.

54. For unvegetated earthen streams and ditches, wider channel corridors and less steep banks shall be encouraged to promote a stable channel geometry. Vegetation shall be permitted to remain or become established on the banks. The elimination of tail-water runoff shall be scheduled so equipment can work in the channel bed during maintenance operations.

55. Where feasible, dragline desilting shall be limited to specific sediment basins.

56. Gradall desilting shall not remove vegetation from more than the lower three feet of the bank.

57. Specific sediment retention basins shall be established and maintained in tidal portions of streams immediately upstream from saltmarsh habitat of estuaries. These desilting basins shall encompass only a fraction of reach susceptible to sedimentation, and shall be coordinated with management plans and specific approvals of appropriate agencies. Basin location and construction shall minimize impacts.

58. Natural tidal inundation by seawater shall be encouraged in accordance with agency-approved plans.

E) Modified Shaping

59. Shaping and other methods of channel realignment shall be minimized.

60. Where feasible, coarse material removed during shaping shall be spread on the channel bottom so that the natural protective armor layer of channel beds can be reestablished by stream flow. Shaping shall consider stream geomorphology and shall as much as feasible create a stable channel by protecting against rather than attempting to change hydrodynamic forces.

61. Where appropriate, silt fences, settling basins, and other sediment traps shall be temporarily used downstream from shaping in perennial streams.

F) Modified Flood Control Devices

62. Where appropriate, vegetated revetment (in connection with rip-rap or gabions if needed) or log weirs shall be used for channel bank protection or grade control in streams.

63. Wherever feasible, vegetated revetments, in conjunction with jetties or groins, shall be used to decrease flow velocities where other channel.bank armor affects local and downstream hydraulics.

64. Where appropriate, property owners should be encouraged to improve the design and/or location of any drainage or irrigation device causing excessive erosion or sedimentation.

G) Modified Use of Access Ways

65. The distance between access ramps shall be determined by the relative site-specific environmental significance of: (1) driving equipment on the channel bed, versus (2) creating extra access points. Significant access needs of other agencies should also be considered.

66. Unneeded or infrequently used access ramps shall be removed and restored to a natural condition.

67. Permanent or annually constructed access ramps shall be placed in areas with minimum potential for erosion and adverse environmental impacts. Permanent ramps shall be armored, where possible, with protective rock and/or vegetated revetment and designed to minimize unauthorized vehicle access.

68. All access ways, even those outside of the riparian corridor or estuary, shall be sited, constructed, and maintained in a manner that minimizes disturbance and siltation impacts to native vegetation, wildlife, and aquatic organisms.

III. MONITORING

69. Pre-project surveys, performed by an independent or county staff specialist approved by Resource Management and Flood Control, shall document all existing sensitive and/or significant resources. This document shall be provided to all appropriate agencies.

70. On-site monitoring shall protect and preserve all sensitive and/or significant resources, especially biological, geomorphic, and cultural, during desilting, shaping, and other maintenance activities.

71. Following project implementation, it shall be documented whether required mitigations were performed, whether they were effective, and whether further mitigation is needed. monitoring records, shall be kept and made available to the public upon request.

72. Rodeo application shall be monitored according to standard maintenance practice. Any violation of the aquatic safety standard shall require immediate cessation of Rodeo application.

73. Field personnel shall be required to immediately report failures and adverse impacts of flood control devices to the on-site monitor, who shall document and initiate appropriate corrective action.

IV. REVEGETATION

74. Where native or biologically beneficial vegetation is removed within riparian corridors or other wetlands, on-site vegetation shall be re-established, where feasible, to ensure no net loss of habitat value, other biological resource, or significant vegetated area.

75. Where on-site revegetation is infeasible, off-site revegetation shall mitigate vegetation loss at a site that is as close to the disturbed site as possible; there shall be no net loss of habitat value, other biological resource, or significant vegetated area. Approved and successful revegetation shall be considered mitigation for repetitive removal of vegetation from the disturbed site in perpetuity.

76. Only native plant material shall be used; and this shall be obtained at or as near as possible to, the site being revegetated.

V. RECOVERY PLANS FOR SENSITIVE RESOURCES

77. Where recovery plans exist, Flood Control shall work with other appropriate agencies in the implementation, monitoring, and maintenance.

Appendix D

Los Carneros Mitigation Bank

LOS CARNEROS MITIGATION BANK
Goleta, California

Prepared by:
Santa Barbara County Flood Control District
June, 2000

LOS CARNEROS MITIGATION BANK
June 2000

I. INTRODUCTION

The Santa Barbara County Flood Control and Water Conservation District (District) is proposing to create a mitigation bank on a portion of the 153 acre Lake Los Carneros County Park located in Goleta, Ca. (Figure 1). The property is bounded by La Patera Lane on the east, Calle Real and U.S. Highway 101 on the south, Los Carneros Road to the west and Covington Way on the north. Credits from the Los Carneros Mitigation Bank (LCMB) will be used primarily for District maintenance projects included in the Annual Routine Maintenance Plan. Additional credits may be used for other projects that are not covered in the yearly maintenance plan, however no projects falling into this category have been identified to date.

Since 1992 when the District's first Annual Routine Maintenance Plan was written, the District has mitigated maintenance impacts on the individual drainages by implementing small restoration projects along the creek banks where the banks are denuded, eroded or overgrown with invasive weed species. The District has approximately 90 small revegetation sites along the south coast creeks with the average size of the sites being 75' x 20'.

This mitigation bank will allow for the establishment of up to 28 acres of high quality habitat adjacent to Lake Los Carneros (Figure 2). Because of its natural beauty and resource value, its large size and its historical associations, Lake Los Carneros Preserve is one of the most important natural and cultural resources in the region (Penfield and Smith et al., 1987). The restoration will include approximately 4.5 acres of pampas grass (*Cortaderia selloana*) removal, construction of a biofilter and associated planting of wetland vegetation, restoration of a seasonal wetland, and expansion and enhancement of existing upland-type habitats that transition into the wetland areas. The 28 acres does not include the areas below the dam that are well vegetated such as the over flow pond, surrounding willow woodland, *Baccharis* scrub and similar areas at the base of the dam.

It is well known that the development of large wildlife habitat areas is much more beneficial than smaller fragmented habitat pieces. Larger habitat areas allow for numerous habitat types to exist together creating a biologically richer environment that will attract and sustain a wider number of wildlife species which are able to move within and between the habitat patches. This can be critical to long term viability and persistence of wildlife populations.

By consolidating compensation requirements, the mitigation bank can more effectively mitigate impacts as well as provide economics of scale related to planning, implementation, monitoring and management of mitigation projects. The District will still implement some revegetation along individual drainages where it is most important for bank protection or non-native eradication projects, however the large acreage within the bank will maximize the opportunities for contributing to biodiversity and increase the overall ecological functions of the bank.

Riparian and Upland species

Salix sp.	*Platanus racemosa*
Populus trichocarpa	*Quercus agrifolia*
Umbellularia californica	*Sambucus californica*
Rhus integrifolia	*Rhus ovata*
Rhus laurina	*Heteromeles arbutifolia*
Prunus illicifolia	*Rhamnus californica*
Artemesia californica	*Artemesia douglasiana*
Baccharis pilularis	*Baccharis doulasii*
Ribes speciosum	*Solanum douglasii*
Lotus scopaius	*Lupinus sp.*
Salvia mellifera	*Salvia spathacea*
Rosa californica	*Rubus ursinus*

Biofilter species

Juncas patens	*Juncas bufonius*
Eleocaris macrostachya	*Scirpus maritimus*
Scirpus americanus	*Scirpus robustus*
Alisma plantago aquatica	*Cyperus eragrostis*
Typha sp.	

VII. RESTORATION SCHEDULE

Once the District receives concurrence from the resources agencies, the appropriate environmental document will be written and restoration within the mitigation bank will begin. The District is currently conducting seed collection so that locally collected plants can be used for the restoration. The time of year that the plan becomes finalized will also determine what phase of the Mitigation Bank Plan occurs first. In general the first job at the mitigation bank site is the removal of the 4.5 acres of pampas grass and the construction of the biofilter. If the pampas grass removal begins during the late summer of 2001, additional site preparation and planting will occur within the following six months. Once that is completed, work on the other non-native removal, planting and implementation of the management recommendations will follow. Because many aspects of the mitigation bank creation can occur concurrently all the restoration components as described in Section V should be in place by Summer 2002. The District may also phase portions of the plantings to introduce age diversity into the created habitats.

Creation of the Mitigation Bank will generally adhere to the following sequence:

- Pampas grass removal
- Biofilter construction
- Non-native removal
- Polygon A planting
- Begin long term maintenance and watering of newly planted areas
- Interpretive sign and observation platform for Polygon A
- Swallow roost installation

- Plant installation in Polygons B through G
- Ripping and planting abandoned trails
- Fencing seasonal wetland in Polygon G
- Bat roost installation
- Interpretive sign in Polygon G and observation platform and interpretive sign at overflow pond

VIII. SUCCESS CRITERIA

The District has used the following success criteria on two other large restoration projects and feels that they create a good measurement of progress towards a successful restoration site.

Biofilter:

- The vegetation shows recruitment of enough young plants to represent a system that will sustain itself.
- 85% of representative plant species diversity is to be demonstrated after three years with at least 85% plant cover.

Other Habitats:

- 80% representative plant species diversity to be demonstrated after five years.
- No more than 30% mortality rate of all plants combined which are planted as part of the revegetation effort. The plant numbers calculated for the revegetation take into consideration the 30% mortality.
- Annual measurement of tree height for at least three years demonstrates healthy growth.
- Trees measured at 3 and 5 years after the planting date meet the following height requirements:

Species	**Size at Planting**	**Height**	
		3 years	5 years
Willow	I gal	10 ft	15 ft
Cottonwood	1 gal	7 ft	12 ft
Sycamore	1 gal	5 ft	9 ft

- Wildlife known to us the adjacent areas are recorded using the mitigation bank for at least foraging and cover.

IX. MONITORING AND REPORTING

The monitoring and reporting will occur at two levels. The first level will involve the general monitoring and reporting of the plant survivability relating to percent survival, healthy growth showing a trend toward meeting 3 and 5 year height criteria for the trees, percent cover, and biofilter success. Additional monitoring will relate directly to the overall success of the mitigation bank as a whole and the functions and values of the individual habitats and their interrelationships. This second level of monitoring will relate directly to the amount of credits available in the bank that can be debited when mitigation is needed for the Annual Routine Maintenance Plan.

A. Monitoring and Reporting of Vegetation Success
Intensive monitoring of the site preparation and planting will be conducted. Once the plants are installed, long-term monitoring will be conducted every two weeks during the first year following planting. During the second year, the sites will be monitored once a month. During years three through five, monitoring will occur every 4 months.

Regular monitoring evaluation during the first year will consist of a qualitative survey of general health, irrigation and weeding needs and predation problems. Once every three months a more extensive quantitative survey will be conducted. At that time, data will be collected to record the species, health and height of approximately 30% of the population. All data will be analyzed and reported in the Annual Restoration Report due at the end of each monitoring year. The report will also contain replanting requirements if survival falls below 70%.

Photo points will be established during the plant installation phase. Photographs will be taken from these locations every two months during the first year and every four months during the second year. During years three through five photographs will be taken once a year. Representative photographs will be included in the Annual Restoration Report.

Bird and wildlife surveys will be conducted to document use of the site as the vegetation and habitats mature. This information and updates on the implementation and success of the management recommendations will also be included in the annual report.

B. Calculations and Accounting of Mitigation Bank Credits
A functional assessment methodology such as Habitat Evaluations Procedure (HEP) or the hydrogeomorphic (HGM) approach to wetlands functional assessment will be used to assess restoration, creation and enhancement activities within the mitigation bank and to quantify the amount of available credits. An assessment will be conducted to establish the baseline conditions prior to any restoration activity at the site. Once the biofilter is constructed and the polygons planted assessments will occur annually for the first five years of the site and then every two years until ten years after planting. Because the mitigation bank has the potential to be debited for over twenty years, future assessment intervals to calculate available credits will be determined after the bank has been in place for ten years.

Each time an assessment is completed a report will be provided to the resource agencies documenting the resources at the mitigation site and the credits and debits applied to the bank. The District will establish and maintain an accounting system which documents the activity of all the mitigation bank accounts.

X. MITIGATION CREDIT USE

LCMB credits will be used for mitigation required on south coast creeks included in the Annual Routine Maintenance Plan. The geographic service area covered by the mitigation bank will include Refugio Creek at the western boundary to Lagunitas Creek at the eastern boundary (Figure 7). The District is preparing to implement the ninth Annual Routine Maintenance Plan. In association with the eight previous Annual

Routine Maintenance Plans, since 1992, the District has planted eighty-two revegetation sites in the south coast totaling approximately 4.2 acres. The average size of an Annual Plan revegetation site is 70' x 15'. While these small revegetation sites have utilized the best available mitigation, have added plants to the creek corridors and have helped slow bank erosion in many places, use of the mitigation bank is environmentally preferable to most of the on-site mitigation. As described in Section IX Monitoring and Reporting, bank credits will be calculated and debited as mitigation is needed from the Annual Routine Maintenance Plans. The District will coordinate with the resource agencies to establish the accounting procedures for the bank.

The District will continue implementation of some revegetation along individual creek banks as part of the Annual Routine Maintenance Plan where restoration of the creek banks are cost effective from an erosion standpoint or to remove large areas of non-native species. Decisions for individual restoration opportunities will be made during the annual creek walks.

XI. SUMMARY

Establishment of the Los Carneros Mitigation Bank is an excellent opportunity to create and restore a mosaic of habitats along the south coast in Santa Barbara County. Creation of wetlands combined with the restoration of upland areas and implementation of management recommendations will reduce the threat of degradation to these areas and will result in an environmentally superior system than that created by the small individual revegetation sites. The District has gained valuable experience over the last several years designing and implementing large restoration projects on the south coast and is very confident in the success of the Los Carneros Mitigation Bank.

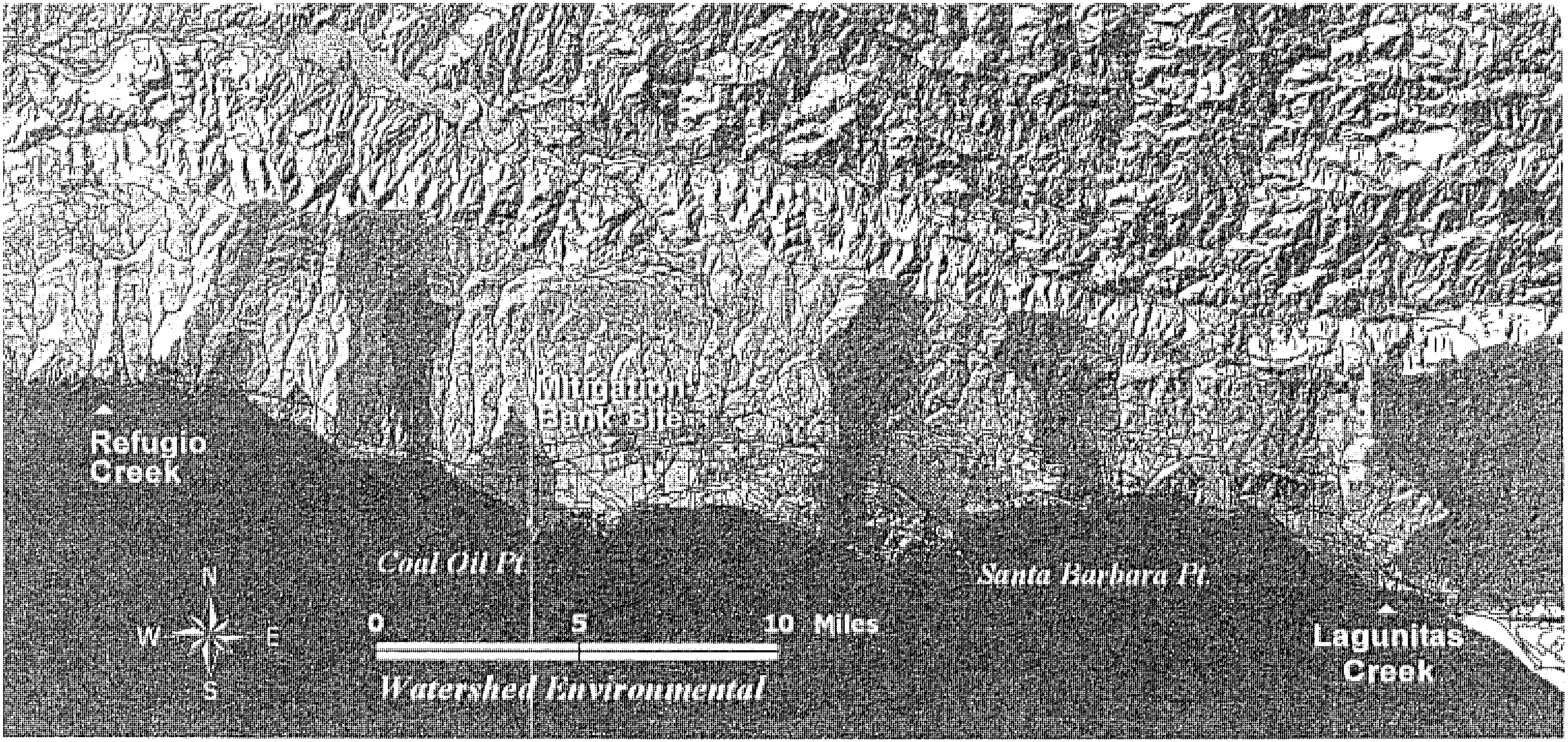

Figure 7:

Los Carneros Mitigation Bank
Mitigation Credit Boundary

Appendix E

Comments on the Draft EIR

CITY OF SANTA BARBARA

COMMUNITY DEVELOPMENT DEPT.

Planning Division 564-5470
Housing & Redevelopment Division .. 564-5461
Building & Safety Division 564-5485
Director's Office 564-5502
Fax Number 564-5477

630 GARDEN STREET
POST OFFICE BOX 1990
SANTA BARBARA, CA 93102-1990

April 27, 2001

Karl Triberg
Santa Barbara County Flood Control District
123 East Anapamu Street
Santa Barbara, CA 93101

SUBJECT: Flood Control Routine Maintenance DEIR Comments

Dear ~~Mr. Triberg~~ Karl:

Thank you for the opportunity to comment on the Draft EIR for County Flood Control Routine Maintenance Program. The City of Santa Barbara Community Development Department/ Planning Division offers the following comments:

Overall. The document provides some excellent analysis. We appreciate the proposed County approach of refining of maintenance activities in consideration of various biological and fluvial geomorphological issues. We expect that this document will be a valuable resource document for considering management and mitigation approaches for creek maintenance work.

Policy Analysis. The initial analysis of policy consistency with City of Santa Barbara General Plan and Coastal Plan policies (Section 8.11) is incomplete. The City Planning Division would be pleased to assist you with this analysis to include relevant City policies in Open space, Conservation, Park and Recreation, and Seismic Safety/ Safety Elements. 1-1

Lower Mission Creek Flood Control Project. We suggest that the document include reference to this major flood control project in Section 5.1 in order to clarify the relationship between the project and the routine maintenance program. Upon completion of the Lower Mission Creek project, the County Flood Control District will take over its maintenance. The project will be subject to its own set of specific maintenance and mitigation measures, which will however be similar to measures identified for the routine maintenance program. Also, should the Section 9 cumulative projects discussion include the Mission Creek project. 1-2

Executive Summary/ Impact Summary Tables

Impact from Facilitating Weed Colonization. This analysis indicates no feasible mitigation. What about weed removal? 1-3

Impact from Reduced Beach Sand Supply. This analysis indicates no feasible mitigation. What about Mitigation R-2, Disposal of Sediments at Beaches. 1-4

Mitigation H-5. It is suggested that this measure include a requirement for design analysis for impacts on banks up and down stream on the same or opposite banks. 1-5

Section 1. Introduction.

It is suggested that the various references to the District's "County" jurisdiction and responsibilities be clarified to indicate whether they refer to countywide (including cities) or unincorporated County areas. 1-6

Section 2. Current Maintenance.

Objectives. The existing maintenance program and project objectives refer to damage to public infrastructure. Please clarify the relationship of the project to private property. 1-7

It is suggested that criteria be identified for when disking is used. 1-8

Table 2-1. What about Rattlesnake Creek? Mission Creek should be U.S. 101 to debris basin. The rest is covered under Table 2-2: Exempt Lined Channels. 1-9

Section 3. Proposed SY River Maintenance Program.

Permit Approvals Required. While a Coastal Development Permit may not be needed, you may still need a Coastal Consistency Determination under CZMA because the project may have an effect on coastal resources. 1-10

Section 4. Proposed Updated Program

Bank Protection Methods. #10 – Geotextiles. How long does the jute or coconut fiber last? 1-11

Habitat restoration discussion. It is noted that even small areas are useful if they reconnect areas that have been disconnected in the past. 1-12

Tree Protection and Replacement. It is suggested that County practices be listed. It could also be identified that if a particular jurisdiction has higher standards, they would be used. 1-13

Herbicide Use. It is suggested that methods for applying herbicides and types used be described. 1-14

Section 5. Impacts and Mitigation Analysis.

It would be helpful if the document impact analysis text clarified for each identified impact the potential impact classification and residual impact classification after mitigation. 1-15

p. 5-65, #14: Clarify if desilting is Class I or II impact. #15: Why are lower Tecolotito and Carneros Creeks south of Hollister not included? 1-16

p. 5-70 Mitigation B-2. It is suggested to include a discussion of the "mosaic" approach. 1-17

p. 5-74 Tidewater gobies are found throughout the Mission Creek lagoon, but apparently breed/ burrow at lower end near sandbar where substrate is best (Swift 2000). 1-18

p.5-77 Most urban creeks along the South coast are too deeply incised to provide appropriate habitat for the SW pond turtle. 1-19

p. 5-96 2nd paragraph, last line. "unmitigable" should read "mitigable". 1-20

p. 5-98 Mitigation B-2. Should the presence of affected fauna species on site over time be identified as 1-21 a criterion for habitat restoration success.

p. 5-188 Mitigation R-2. Suggest should also include sediments from drainages if suitably sized. 1-21a

Section 7. Alternatives.

The document identifies a "No Maintenance" alternative as the "no project" alternative. The State CEQA Guidelines § 15126.6 (e) provides that, when the project is the revision of an existing ongoing operation, the "no project" alternative is the continuation of the existing operation into the future, and the projected impacts of the proposed plan are compared to the impacts under the existing plan as the baseline. 1-22

The primary purpose of alternatives analysis is to identify any possible alternative actions that could reduce one or more significant effects. All of the alternatives analyzed have greater impacts than the proposed project. Are there any alternatives that should be analyzed that could reduce any of the Class I project or cumulative impacts identified? 1-23

Please contact me or Jan Hubbell at (805) 564-5470 with any questions. Thank you for the opportunity to comment.

Sincerely,

Barbara R. Shelton

Barbara Shelton, Environmental Analyst
Planning Division

cc: Jill Zachary, Parks and Recreation Department

CITY of CARPINTERIA, CALIFORNIA

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2001 MAY 14 AM 10: 21

SANTA BARBARA COUNTY
WATER RESOURCES

May 26, 2001

Mr. Karl Treiberg
Santa Barbara County Flood Control District
123 E. Anapamu Street
Santa Barbara, CA 93101

RE: Comments on Draft Program Environmental Impact Report for the Flood Control District's Updated Routine Maintenance Program

Dear Mr. Treiberg,

Thank you for the opportunity to comment on the above referenced environmental impact report. Our comments are as follows:

Section 4.5.2 "Mitigation Objectives" page 4-6

The final paragraph in this section states: "It should be noted that habitat restoration will not be implemented for maintenance activities that affect areas devoid of vegetation, nor for maintenance activities that remove vegetation dominated by giant reed (*Arundo donax*)." This appears to be in conflict with the overall restoration goal and primary objective stated in the first paragraph on page 4-5. Some clarification on this issue is necessary. 2-1

For temporary work such as placing fill at the base of eroding banks or flattening eroded banks some level of restoration should be included whether it was barren or had giant reed. The restoration would assist in stabilizing the area and help prevent the colonization of invasive non-native weeds. 2-2

Similarly, some level of restoration should be required for the construction of permanent features such as new access ramps or hard bank protection regardless of the existing stream bank condition. Table S-1 on page ES-23 states: "Use of hard bank protection would permanently reduce the amount of existing and future bank riparian vegetation." We agree with this statement. However, the document seems to allow a determination of "no impact" (and therefore no mitigation) if the location selected for construction of a permanent feature currently supports giant reed or is devoid of vegetation. Since construction of a permanent feature eliminates the potential for future restoration of the 2-3 affected section of creek bank, some form of mitigation should be required regardless of the current bank condition.

Section 5.1 Water Resources – Hydrology and Hydraulics
Page 5-5 states: "Most of these debris basins were constructed after major wildfires to prevent post-fire damages." This may lead the reader to believe that there is no need for the debris basins after a burnt watershed recovers. Some explanation regarding the ongoing need and benefit of the debris basins should be included. If any are truly no longer necessary, then the document should discuss the potential for their future removal. 2-4

Table 5-2, page 5-4
This table lists the drainage areas in acres for several south coast creeks. These figures are not the same as the figures in the following text. For example, in Table 5-2 the Carpinteria Creek watershed is listed as having 8,395 acres, while in the text it is described as having 9,700 acres. 2-5

Page 5-76 Southern Steelhead Trout
Carpinteria Creek is listed as one of the south coast streams having documented records of Steelhead Trout. The text states: "The upstream limit of migration would be dependent upon available flows and the presence of passable impediments and barriers." The City of Carpinteria is pursuing grant funding to restore Carpinteria Creek for Steelhead Trout. One of the primary objectives of the restoration plan includes the removal and/or modification of all existing impediments to fish passage. The Gobernador Debris Basin may be one of the limiting factors in establishing a viable Steelhead run on Carpinteria Creek. The City encourages the District to modify this Basin's outlet to accommodate fish passage and looks forward to working with the District to this end. 2-6

Sincerely,

Dave Durflinger
Community Development Director

Cc: Browning Allen, City Manager
Vince Semonsen, Consulting Biologist
Carpinteria Creek Committee

Santa Barbara Audubon Society, Inc.
A Chapter of the National Audubon Society

5679 Hollister Avenue, Suite 5B, Goleta, CA 93117 (805) 964-1468

SANTA BARBARA COUNTY
WATER RESOURCES

April 12, 2001

Karl Treiberg
Santa Barbara County Flood Control District
123 E. Anapamu Street
Santa Barbara, CA 93101

Dear Mr. Treiberg:

RE: Draft EIR Updated Routine Maintenance Program

Santa Barbara Audubon has been an active participant in Project Clean Water, creek protection, and habitat restoration in our community. We were among those advocating for the update of the Flood Control Routine Maintenance Program, and are thus commenting on the adequacy of the draft EIR for this program.

Two primary reasons for the updated Routine Maintenance Program and the environmental analysis of the program are the listing of endangered species since the 1991 EIR, and water quality concerns. Project Clean Water goals of satisfying the Clean Water Act Mandate–the NPDES stormwater quality permits and the community concern for safe beaches and streams need to be considered. The mission of Flood Control is the reduction of flood hazards. The dEIR states that the Class I cumulative impacts of brushing and spraying, temporarily removing channel bottom habitat and biofiltration function of in-channel vegetation. Thus, mitigation that will reduce these impacts is required by CEQA.

Recovery of steelhead is a community goal as well as an ESA mandate, and the program has a Class I impact to fish and aquatic organisms by "reducing vegetation cover, pools and gravel beds, and instream cover and debris providing micro-habitat". Thus any measures that can reduce these impacts must be considered.

We recognize that the Flood Control District is not the cause of our creek pollution and declining steelhead populations. We have intensive development in the creek corridors and floodplains, which both tax the streams ecological functions to filter pollutants, and demand increased flood control protection. However, Flood Control must insure that necessary flood hazard reduction measures minimize the impacts of its necessary channel clearing and other maintenance activities "to the maximum extent feasible". That requires looking beyond maintenance of the status-quo.

Given our chapter's limited knowledge of the Santa Ynez River and North county, which are outside of our chapter boundaries, our comments are primarily directed to the South Coast streams.

Audubon proposes that an "Environmentally Superior Alternative" be constructed and components evaluated for modification of the Updated Maintenance Plan, and assessed for environmental impact–see below.

Watershed Land Use Policy Review and Revision. The 1991 Program Environmental Impact Report for Flood Control Routine Maintenance Activities reviewed the Comprehensive Plan and Local Coastal Plan policies and made recommendations for policy changes in that would reduce the sediment and pollutant load entering the streams, and reduce the flash inputs of storm water. The present EIR could and should review those recommendations, determine what policy changes have been instituted, and which recommendations which were not instituted would be appropriate for current conditions. Such changes in land use could reduce the Flood Control maintenance needs over the long term, and improve the health of our creeks. Alternatively, Project Clean Water staff and consultants currently reviewing watershed policies, or county planners, could be directed to undertake this task, as it does not directly relate to the Flood Control Maintenance Program. 3-1

Evaluation of all Flood Control Access Roads and Ramps. The HGM analysis suggests that any road or path along the top of the bank disrupts the function of the riparian corridor. It would be appropriate to re-evaluate all Flood Control access roads and ramps. It may be possible to abandon some which are no longer needed, or narrow the maintained width, or shift the maintained area away from the top of bank, or revegetate some, especially seldom-used FC roads, with low-growing vegetation, as suggested for access ramps in the dEIR. Sites that could be revegetated could be available as mitigation sites for channel maintenance activities. 3-2

Mitigation for Each Channel Clearing Episode. The dEIR does not adequately assess the rationale for the policy of the District for "one time only" mitigation for channel clearing of a reach. It is appropriate that the level of mitigation required for temporary impacts is less than for permanent loss of creek vegetation with its attendant wildlife and water quality improvement values. However, each clearing does disrupt the biofiltration and habitat functions of the channel bed for a period of time until natural recovery occurs. Thus, some level of mitigation should be required after each clearing. Emergent, herbaceous vegetation is known to uptake excess nutrients and sequester pollutants. According to the dEIR, these are not generally removed, or cut without disturbing the roots, if needed to reduce sediment trapping. The role of woody vegetation in biofiltration, however, is not adequately addressed in the dEIR. Woody vegetation is removed by Flood Control precisely because it traps sediment (as well as increasing roughness and thus reducing flow velocities). Pollutants are often adhered to the sediments (as stated in the dEIR); thus trapping sediments increases the residence time of pollutants, which is a requirement for the microbial activity to break down pollutants. Thus, removal of woody vegetation can also affect the biofiltration function of creeks. Mitigation measures which compensate for the unavoidable impact must be instituted. 3-3 3-4 3-5

Los Carneros Mitigation Bank. Inclusion of the Los Carneros Mitigation Bank for use as off-site mitigation is appropriate in the updated program. The tiered mitigation plan of on-site mitigation where appropriate sites are available, and off-site use of the mitigation bank is appropriate. The planned use of the Mitigation Bank to off-set impacts should be specifically stated in the Annual Plan for approval. The goal of intact riparian corridors is extremely important, and unless there no mitigation sites available on the affected stream, the use of the off-site bank is not appropriate. 3-6

"Environmentally Superior Maintenance Alternative". Components which should be considered for a maintenance program which further reduces the impacts of the program, and maximizes mitigation for unavoidable impacts.

1) Mitigation for each channel clearing episode. In recognition of the temporal impacts of channel clearing by brushing or herbicide use, in temporary loss of biofiltration function and habitat value. 3-7

2) Canopy creation. In the long-term, mature canopy development reduces the growth of in-stream 3-8 woody vegetation, and will reduce the need for channel clearing and its associated impacts. Overhanging canopy moderates water temperatures, which can benefit fish and other aquatic organisms. The multi-story canopy development thus enhances provides for a more diverse wildlife habitat. Canopy trees on top of bank, as they mature, stabilize the bank to reduce erosion and sedimentation into the streams. Western sycamore, Coast live oak, and Black cottonwood are the dominant canopy trees on South Coast streams.

Caution regarding the seedling sycamore trees removed from the creekbeds–they are often hybrids with the horticultural Plane trees, and should not be used for mitigation plantings.

3) Riparian buffer–optimal 50 feet. A wide riparian buffer (up to 50 feet in urban areas, wider in the upper watersheds with steeper gradients) functions as a biofilter of overland flow and subsurface flow, limiting the pollutants and sediments that enter the creek, which will compensate for the reduced biofiltration of cleared channel bed. Riparian buffer strips have been recognized by theNatural Resource Conservation Service, which have funded a program of filter strip set-asides. Wildlife habitat values are increased with intact riparian corridor vegetation. Typical Flood control mitigation sites include about 10 feet wide strips on top of bank. However, where wider areas are available, it is appropriate to plant up to 50 feet wide mitigation areas, as the riparian filter strip can compensate for the loss of in-stream biofiltration function. 3-9

3) Biotechnical Bank Stabilization. New hard bank protection, such as ungrouted or grouted rip-rap should not be included as "Routine maintenance". Biotechnical bank stabilization, which does not create permanent loss of natural banks, should always be considered first. If the District believes, after appropriate engineering evaluation, that hard-bank stabilization is required, then these projects should be separately permitted. Even though 1:1 mitigation is proposed, the riparian corridor is permanently disrupted. 3-10

4) Repair of hardbank structures. The dEIR states that structures are generally repaired with the same materials as the original. The need for repair is an opportunity to re-evaluate the need for structures installed before modern alternatives were available. The use of the Hydrogeomorphic Method (HGM) would be appropriate for assessing the impacts of these structures, which are permanent rather than temporary. Less intensive measures may be appropriate, and reduce the impacts of the structures. 3-11

5) New grade stabilization structures. New grade stabilizers should not be part of *routine* maintenance program. As stated in the dEIR, grouted native rock is the most common grade stabilizer. This permanently removes stream bed habitat. Given the need to design and construct grade stabilizers such that they do not obstruct fish passage, these are best permitted separately, and are not routine. 3-12

6) Repair of grade stabilizers. Analysis of any grade stabilizer in need of repair is warranted, to see if modification is required to allow for fish passage *including* during moderate flow conditions. The use of HGM may also be appropriate, to evaluate if modification of the design could significantly reduce its impacts. 3-13

7) Channel bed surface and instream vegetation. Where the streambed natural irregular surfaces have been reduced by Flood Control maintenance, especially where heavy equipment has been utilized, the stream reach should be evaluated for possible re-working to recreate shallow pools. This would be especially important in perennial steams or where the ground water is near the surface, and shallow persistent pools might be created. These could support *herbaceous* vegetation, with its attendant biofiltration abilities, and for aquatic organisms. 3-14

8) Storm drain filtration devises and off-channel bioswales. Storm drain drop inlet inserts or other pollution control devises should be considered for stormwater inlets upstream of channel clearing to compensate for loss of biofiltration function; off-channel bioswales can also be installed where space is available. This would be especially critical for stream reaches which are pollution "hot spots". This is the kind of mitigation which could appropriate be "one-time" mitigation for multiple clearings, except for funding of the maintenance of these structures, which is ongoing. 3-15

9) Revegetation of FC access ramps. Access ramps into the creeks should be revegetated with native low-growing vegetation. As suggested in the dEIR Section 4.5.3, planting of access ramps with native vegetation can provide slope protection, reduce erosion and sedimentation, and would provide habitat between maintenance events. Ramps not utilized in a given year with non-native vegetative cover, can be considered a mitigation sites for impacts within that stream corridor. Follow-up weed control is warranted after use of a ramp, given the extensive weedy vegetation noted on many access ramps. 3-16

10) Sensitive plant supplementation. Even where a specific maintenance action does not displace or remove sensitive plant species, planting of sensitive plant species in watersheds where they have been historically located is appropriate. Past Flood Control activities, where extensive clearing of riparian vegetation was practiced, as well as development disturbance, have contributed to the limited distribution of some of our sensitive plant species. Inclusion of these plants in mitigation plantings would aid in recovery of our creek biodiversity. As long as mitigation credit is received by the District, this should pose no hardship. Plants likely to be appropriate in many watersheds include: Hoffmann's gooseberry (*Ribes amarum hoffmannii)* and Santa Barbara Honeysuckle (*Lonicera subspicata subspicata).* These could be added as second phase, once the overstory is established on a mitigation site. 3-17

11) Invasive Weed Control. Follow-up weed control is needed after maintenance activities requiring heavy equipment and soil disturbance. Control of major invasive non-natives such as *Arundo donax* and Pampas grass should be counted as mitigation, and should be encouraged. Especially the Arundo can be a significant flood conveyance hazard. 3-18

Summary. The proposed updated maintenance program is an improvement over current practices, and the Flood Control District is to be commended for these improvements. The focus of these comments is how to make it even better. The ability of our creeks to filter pollutants and provide habitat for aquatic and terrestrial organisms has been overwhelmed. This is not the "fault" of Flood Control. However, we must look at all available means to recover the creeks functions, and reduce the impacts of needed flood hazard reduction to the maximum extent feasible.

Sincerely,

Darlene Chirman

Darlene Chirman
President, Santa Barbara Audubon

Copies:
Naomi Schwartz, 1st District Supervisor
Susan Rose, 2nd District Supervisor
Gail Marshall, 3rd District Supervisor
Rob Almy, Project Clean Water, Director

Gray

South Coast Watershed Alliance

c/o: 930 Miramonte Dr., Santa Barbara, CA 93109

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URS CORPORATION
Santa Barbara

California Trout, Inc.
Carpinteria Creek Committee
Citizens Planning Foundation
Community Environmental Council
Conception Coast Project
CURE - Clean Up Rincon Effluent
Environmental Defense Center
Gaviota Coast Conservancy
Growing Solutions
Heal the Ocean
Santa Barbara Audubon Society
Santa Barbara ChannelKeeper
Santa Barbara Sea
Santa Barbara Surfrider Foundation
Santa Barbara Trappers
Urban Creeks Council
Individual Community Members

27 April 2001

Santa Barbara County Flood Control and Water Conservation District
Attn: Karl Treiberg
123 East Anapamu
Santa Barbara, California 93101

Re: Draft Program EIR: Updated Routine Maintenance Program (01-EIR-01, March 2001)

Dear Mr. Treiberg:

The South Coast Watershed Alliance (SCWA) is a coalition of environmental organizations, community groups and individuals working on watershed issues in Southern Santa Barbara County. This letter offers some general comments to you on the Flood Control District's draft Environmental Impact Report for its Updated Routine Maintenance Program. We expect that some member organizations within SCWA will also provide you with more detailed comment letters regarding specific aspects of the Draft EIR.

General considerations. We applaud the District for its willingness to reevaluate and revise its annual maintenance program in order to include use of improved habitat restoration techniques and biotechnical methods for slope stabilization. Most of the new methods that the District proposes to incorporate into its annual maintenance program have become standard, state-of-the-art methods across California and the rest of the county. Unfortunately, the Draft EIR suggests there is to be only a hesitant experimentation with such practices, when the District should instead be committing itself to the use of these more environmentally sound practices as a matter of course. As the Draft EIR points out, the District is under a mandate from the Board of Supervisors to provide "adequate protection against flood damage *in the least environmentally damaging way*. . .[page 2-1, emphasis added]." Meeting that mandate (as well as its obligations under CEQA) requires the District to adhere to such practices as part of the project description or through stronger mitigation measures than those proposed in the Draft EIR. 4-1

Bank stabilization techniques. According to the Draft EIR, the District will now begin to "consider" the use of alternatives to hard bank protection [page ES-6] and to evaluate "the feasibility and applicability of such methods within the context of the Maintenance Program [page 1-6]." Although the actual mitigation measure (H-5) contains a stronger commitment to the use of biotechnical solutions than the Executive Summary seems to suggest, that mitigation measure would still allow the District to continue using hardbank techniques in cases where the District determines that bioengineered methods "will not achieve the desired results, are not cost effective, are logistically or technically infeasible and/or would 4-2

create greater incidental environmental impacts. . .[page 5-32]. Conventional channelization, riprapping and other hardbank solutions have resulted in enormous damage to the ecological and aesthetic values of many South Coast creeks. Biotechnical solutions, on the other hand, are a proven alternative for bank stabilization
—a solution that has become standard practice in other parts of the country. As a result, the District should not be permitted to continue the use of hardbank engineering unless it can affirmatively demonstrate that the use of a biotechnical solution would be unsafe and unreasonable at that specific location. The language of the analysis and proposed mitigation measure should be revised to reflect a commitment to that standard.

Hydrogeomorphic (HGM) analysis. The Draft EIR says that the District "is interested in determining" if the use of HGM analysis "will increase the efficiency and effectiveness of the maintenance planning and implementation program. . .[page ES-7]. " But on page 4-11, the District apparently rejects the use of HGM analysis as a standardized practice in developing its annual maintenance program because it feels that such use is not appropriate. According to the Draft EIR, "the District will *consider* habitat functions in the development of *certain* restoration plans. . .[page 4-11, emphasis added]." But the Draft EIR does not identify the type of projects that are to be subjected to such evaluation. SCWA believes that simply "considering" habitat functions in "certain" plans is an inadequate approach to developing its maintenance program. On the contrary, the District should evaluate the impacts of its activities on stream habitat and *balance* flood protection against other environmental considerations (such as habitat value) in implementing its maintenance program. The role of HGM or similar comprehensive assessment tools is not to improve the District's "efficiency and effectiveness," but to insure that the maintenance program is implemented "in the least environmentally damaging way." 4-3

Pesticide use. The Draft EIR reports that water quality data indicates that glyphosate contributes to degradation of water quality in South Coast creeks. It also says that "[a]necdotal information" suggests that the District may use as much as 10 percent of herbicides in the area. Yet the Draft EIR contains no analysis of whether the District's contribution to this environmental impact is cumulatively considerable. The EIR should be revised to include an analysis of the cumulative effects of the District's pesticide use. 4-4

Selection of mitigation sites. Use of the Los Carneros mitigation site should always be the last choice when mitigating for impacts of maintenance activities—and then only as mitigation for impacts to creeks in the Goleta Slough watershed (as we pointed out by letter when the District created the Los Carneros site). SCWA believes that District should always seek to provide mitigation along the same reach of the creek in which the impacts occur, even if the mitigation involves restoration upslope or within the 50 to 100 foot buffer from the top of bank. The annual maintenance plan should specify each instance in which the District proposes to use the Los Carneros mitigation site as an alternative and why mitigation cannot be performed along the creek reach on which the impacts are to occur. 4-5

Consideration of full range of project alternatives. Under the California Environmental Quality Act, a draft EIR must describe a range of reasonable alternatives to the project that could feasibly attain most of the basic project objectives and yet avoid or substantially lessen the significant environmental impacts of the proposed project. SCWA believes that the Draft EIR fails to propose or evaluate a project alternative that would require the District to engage in maintenance practices that are more protective of the riparian environment—one that would seek a better balance between flood protection on the one hand 4-6 and other important factors such as improvement in water quality, protection of instream habitat for steelhead and other aquatic species, and restoration of riparian vegetation. We would urge the District to revise the EIR so that it fully develops and evaluates such an alternative.

Sincerely,

Jill Carlson

Jill Carlson
South Coast Watershed Alliance

C: John Gray
URS Corporation
130 Robin Hill Road, Suite 100
Santa Barbara VA 93117

C: Members of the County Board of Supervisors

SANTA BARBARA URBAN CREEKS COUNCIL

P.O. Box 1083, Carpinteria, CA 93014 (805) 968-3000

April 26, 2001

Santa Barbara County Flood Control and Water Conservation District
123 East Anapamu Street
Santa Barbara, Ca., 93101
Attn: Karl Treiberg

Re: Draft Program EIR: Updated Routine Maintenance Program (01-EIR-01, March 2001)

Dear Mr. Treiberg:

Santa Barbara Urban Creeks Council has been active for many years in protecting and restoring creeks and aquatic systems on the south coast. We have participated in the review of flood control maintenance practices and have also asked for an update of the Routine Maintenance Program. The update should reflect methods that respect habitat for endangered and other protected species and that contribute to better water quality, and that are not in conflict with community goals or CEQA. We welcome the opportunity to comment on the Draft EIR, and we hope that our comments will help you to implement management practices that address the need for better environmental protections.

Increasing awareness on the part of other agencies, municipalities, and organizations throughout the county has resulted in recognition that the needs of all residents include rehabilitation of natural streams that have been degraded by urbanization and other activities. 5-1
In addition to providing flooding protection, the activities of the Flood Control and Water Conservation Agency should also address these needs whenever possible. A number of efforts are underway to implement change, as you are aware. It is of very great importance that the maintenance program be in conformance with long range planning objectives and with efforts of other agencies and communities to restore health to watersheds. The actions that your agency takes in accomplishing its mission will to a large extent determine the success of the efforts of communities in bringing about positive change. In our interactions with local government, The Urban Creeks Council advocates across the south coast for master planning that respects creek buffers, promotes well shaded creeks, natural function of streams, and return to natural geomorphic contour. Even though meanders have been rigidly stabilized in the urban setting, there are very real potentials for restoring function to streams by implementing biotechnical methods of bank stabilization and allowing natural geomorphic process to reestablish. It is important that your maintenance practices be upgraded to allow these positive changes to happen as opportunities arise over time.

Bankfull Channel

An important part of rehabilitation of streams is reestablishment of the bankfull or active channel that is responsible for efficient transport of sediments. Maintenance practices should always require consideration of reestablishing the correct width and depth that conveys the dominant flow discharge, based on the one and one half to two year flow within each watershed. This does not mean that any arbitrary channel configuration that has the capacity to carry the bankfull discharge will fulfill this requirement. Width and depth of the bankfull channel must be calculated in each watershed and is specific to not only the size of the watershed but to sediment load and size, gradient, and type of substrate. The width and depth of the bankfull channel is what regulates velocities. When water velocity is optimized, as in a true bankfull channel, then sediments are moved most efficiently, resulting in neither deposition or scouring. Restoring, or allowing streams to reestablish correct bankfull channel will result in largely self maintaining streams, gradually reducing the amount of maintenance needed over time. It is important that the data be developed for each watershed in which you do maintenance that clearly defines the correct width and depth of the bankfull channel. Without good data, there is no way to determine the potential for reestablishing the bankfull channel. 5-2

Biotechnical Bank Stabilization

You refer to the use of biotechnical methods of bank stabilization in the draft, but the language used does not effectively modify current practices. Hard bank armament and channelization is to a very great extent responsible for loss of biological function, loss of habitat, and degradation of water quality in urban watersheds. The Maintenance Program should specify that biotechnical methods of bank stabilization will be used, except where it can be demonstrated that an engineered solution is necessary. Also, when existing hard bank armament deteriorates, priority should be given to biotechnical stabilization as a means to replace the channelized section. In some cases an engineered structure can be overlaid with soils and vegetation where greater protection is deemed necessary, such as at points of hydraulic vulnerability, or where failure would pose an unacceptable threat to a bridge or an existing structure. 5-3

Hydrogeomorphic Analysis

The use of an assessment tool, particularly as it relates to coordination of activities with other agencies and municipalities, is becoming increasingly more important in developing understanding of impacts within watersheds and in rehabilitation of streams. Piecemeal actions taken without good reference to instream conditions and without coordination with other activities in other parts of the watershed can be wasteful, and can sometimes result in unanticipated negative impacts. HGM can be a very valuable tool that the Flood Control District can use to great advantage to accomplish its mission. In addition, the use of HGM in coordination with other agencies will be an important part of establishing long range objectives. HGM has the potential to be quite useful in bringing about positive change by providing a focused approach to planning and by introducing commonality among agencies. The maintenance program should employ HGM as a standard tool to help the Flood Control and Water Conservation District to better serve the needs that exist in each watershed. 5-4

Mitigation Practices

Mitigation of impacts should be effected on site or as close to the impact site as possible, in the same drainage or creek. In the rare instance that off site mitigation banking is deemed necessary, in a receptor site such as the Los Carneros mitigation bank, specific justification must be provided, including detailed reasons for not mitigating on site or near the site, in the annual maintenance plan. 5-5

The practice of "One time only" mitigation for clearing of a channel is not appropriate. Each time a channel is cleared it causes significant impacts to habitat. These impacts should be mitigated every time they occur. Mitigation for these temporary impacts could be something as simple as planting native trees on the bank at the site of the impact. The cumulative effect of serial mitigations for channel clearing could be significant as canopies and understory mature, and would help to diminish the need for channel clearing in the future. 5-6

In reviewing these comments, it is hoped that you recognize that many of the concerns raised share a common underlying theme. They call for a reduction in the need for maintenance. Whether it be use of glyphosate or other herbicide application, or clearing vegetation with equipment or other means, or dredging to remove sediments, there is a widely recognized need to reduce all of the impacts of maintenance. We want to see marked decrease in disturbance of the stream bed, and we want to see elements of natural streams reintroduced wherever possible. We would like to see changes in the maintenance program that will begin to arrest the destructive cycle in which disturbances caused by maintenance practices perpetuates instability of stream morphology and function. We want to see a revision of the EIR to reflect a project alternative that does these things. Thank you for your willingness to update the program. We hope you find these comments helpful.

Eddie Harris
Member of the Board of Directors
Santa Barbara Urban Creeks Council

cc: Naomi Schwartz, 1st District Supervisor
Susan Rose and 2nd District Supervisor and 2nd Distr. NRAC
Gail Marshall, 3rd District Supervisor
Project Clean Water
South Coast Watershed Alliance
Environmental Defense Center

VJS
BIOLOGICAL
CONSULTING

April 26, 2001

Comments

Santa Barbara County Flood Control and Water Conservation District

Draft Program Environmental Impact Report
Updated Routine Maintenance Program

March 2001

SANTA YNEZ RIVER PROGRAM

In Table S-2, Page ES-33, Disturbance to Wetlands it states that ponds and wetlands are **defined** as areas dominated by perennial wetland herbs such as watercress, spikerush, cattails, and bulrushes, and do not have a substantial number or density of willow trees or large mulefat plants. In Section 3.0 Proposed Santa Ynez River Maintenance Program it explains the need to clear willows even if they occur in substantial numbers around ponds and wetlands. The word defined should be removed from Table S-2 since this is not a definition (willows are a wetland indicator species) this is an explanation of why ponded areas with willows may be cleared. If such areas need clearing it should be noted that hand crews monitored by a qualified biologist should do the work. 6-1

In Table S-2 Mitigation Measure SY-B-7 Pre-Construction Biological Surveys it calls for CA red-legged frog surveys. Are these surveys done according to USFWS protocol, in particular night surveys? 6-2

Page 5-77 Western Pond Turtle. In the description a number of locations were identified along the Santa Ynez River where pond turtles occur. I would suggest this type of documentation is inaccurate since they also occur above Bradbury Dam and at numerous locations east of Buellton, essentially they could be anywhere on the drainage. 6-3

Section 2.0 Current Routine Maintenance Program. Page ES-2. "The objectives of the routine maintenance program are to maintain the capacity of key watercourses in the County to preserve existing conveyance capacity and prevent the accumulation of obstructing vegetation and sediments that could increase existing flood hazards that could then result in damage to life, and public property and infrastructure." 6-4

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This EIR attempts to minimize environmental impacts while trying to prevent damage to "life and public property and infrastructure". Most of the protection reasons refer to the protection of public property and infrastructure as in the above statement and the following: Page ES-4 Section 2.2 Maintained Drainage's "---could threaten Public infrastructure and other public facilities." 6-5

In table S-2 (Santa Ynez River) Under Beneficial Impacts - Flooding - it states "Mowing will maintain channel capacity and reduce the frequency of overbank flooding that could damage private and public property and life." We now have private property protection inserted into the dialogue. Is public property and infrastructure different from private property? Please clarify! In the case of the Santa Ynez River just what public property is protected by the mowing! As I understand it, most of what is flooded is privately held farm land and some federal land. The mowing amounts to significant impacts, continued over time (forever), mitigated for only once, to protect farmland that is within the original flood plane. Why? 6-6

In Table 7-3 Channel Capacity and Flooding Characteristics of the Santa Ynez River Alternatives, Page 7-11, please note that there is only a 700 acre difference between the Unmaintained condition and the 100-foot cleared zone in a 10-year event. This is graphically depicted in Figure 10. And there is no difference, zero, in a 25-year event. Why not take the money to be spent on the mowing operation(s) and set aside, return, those acres shown in Figure 10 to natural habitat and avoid the impacts and mitigation measures needed to offset those impacts. 6-7

Thanks for the opportunity to comment.
Sincerely,
V Semonsen

Vince Semonsen

ENVIRONMENTAL DEFENSE CENTER

April 27, 2001

Karl Treiberg
Santa Barbara County
Flood Control District
123 E. Anapamu Street
Santa Barbara, CA 93101

RE MARCH 2001 DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT – UPDATED ROUTINE MAINTENANCE PROGRAM AND SANTA YNEZ RIVER MAINTENANCE PROGRAM

Dear Mr. Treiberg:

The Environmental Defense Center ("EDC") is a nonprofit public interest law firm that represents community groups in a broad spectrum of environmental issues in Santa Barbara, San Luis Obispo and Ventura Counties. We have been involved in numerous flood control issues, including the review of the Santa Barbara County Flood Control District's original Program Environmental Impact Report ("EIR") for Routine Maintenance (March 1991), and review of the 1992 EIR concerning the District's proposal to clear riparian vegetation from the Santa Ynez River. EDC has reviewed the March 2001 draft Program EIR for the Updated Routine Maintenance Program, and appreciates the opportunity to present the following comments regarding this document of critical importance to the health of all riparian habitats, streams and endangered species under the District's large geographic jurisdiction.

In summary, the draft EIR is deficient with regards to its consideration of alternatives to the proposed Updated Routine Maintenance and Santa Ynez River Maintenance Programs. It does not consider feasible less damaging alternatives that could meet the basic program objectives. Furthermore, the narrow nature of the program objectives coupled with the use of an improper California Environmental Quality Act ("CEQA") baseline river conveyance capacity restricts the number of alternatives analyzed. Extensive downgrading of significant unavoidable impacts in the 1991 EIR to less than significant impacts was undertaken in this draft EIR without substantial supporting evidence. Additional mitigation measures and alternatives must be analyzed to ensure that the program proposed is the least environmentally damaging feasible option that fulfills the underlying purpose of the program.

I. The Alternatives Analysis fails to Comply with the California Environmental Quality Act

I.a. EIRs must consider a range of reasonable alternatives that feasibly meet most of the basic program objectives and substantially lessen or avoid significant impacts.

An EIR must describe a range of reasonable alternatives which would feasibly attain most of the project's basic objectives but which would also substantially lessen or avoid at least one

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significant project impact. (CEQA Guidelines Section 15126.6(a).) Furthermore, CEQA Guidelines Section 15126.6(b) states that, "...the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." Moreover, "The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines Section 15126.6(c).)

I.b. The EIR fails to consider any less damaging alternatives to the Updated Routine Maintenance component of the proposed program.

The draft EIR describes alternatives to three program components: the proposed Updated Routine Maintenance Program, the proposed Santa Ynez River Maintenance Program, and the proposed herbicide application. However, with regards to the proposed Updated Routine Maintenance Program (i.e., the program for all creeks within the District's purview except the Santa Ynez River), no alternatives are presented in the draft EIR that avoid or substantially lessen any significant impact, even though such alternatives exist. Other than the No Project Alternative, only two options are presented, and these fail to lessen any specific significant or adverse impact. (Table 7-1 and Table 7-2) Therefore, with regards to this major program element, the draft EIR fails to comply with CEQA's requirement for analysis of a range of reasonable alternatives. 7-1

I.c. Lead agency has information regarding potentially feasible and less damaging alternatives to the proposed Updated Routine Maintenance Program and must analyze these alternatives in the EIR.

The draft EIR concludes, "Based on the above analyses, the environmentally superior alternative is the proposed Updated Routine Maintenance Program." (EIR at page 7-8) This conclusion, however, is built upon faulty analyses that failed to consider other potentially feasible alternative maintenance program components and approaches suggested to the District during the CEQA "scoping" process, and in comment letters, including Santa Barbara Audubon's April 2001 letter regarding the current draft EIR. These alternatives would substantially lessen significant program impacts. As lead agency, the District has a duty to analyze a range of reasonable alternative approaches. It also has a duty to incorporate those that are feasible, that substantially lessen significant impacts and that meet most of the basic program objectives into the proposed Updated Routine Maintenance Program so that the basic program objectives can be met in the least damaging manner for the environment. 7-2

Moreover, the District's draft EIR fails to consider (or to describe why the District believes infeasible) the alternative maintenance techniques and approaches to flood and erosion hazard reduction that were considered to be feasible elements of the Environmentally Preferred Alternative in the original, certified Program EIR. Section 12.3 of the original Program EIR is attached and referenced here as suggested alternatives for consideration in the current EIR. 7-3

(Attachment #1) These alternatives are within the scope of flood control and are feasible. By failing to consider these alternative approaches and strategies, the draft EIR is artificially limited in its usefulness as a tool to consider program options and alternative flood hazard reduction and stream management techniques and approaches that reduce significant environmental impacts, as required by CEQA.

I.d. DEIR contains an inadequate analysis of alternatives to the proposed Santa Ynez River Maintenance Program.

The draft Program EIR only includes one alternative to the proposed Santa Ynez River Maintenance Program that would substantially lessen the environmental impacts of the Program. According to the draft EIR, "The Narrower Cleared Zone Alternative would result in less environmental impacts than the proposed project." The "Narrower Cleared Zone" Alternative described in the draft EIR would substantially lessen some or all of the eight unavoidable significant impacts identified in the 1992 Final EIR for the Santa Ynez River Channel Maintenance Program. (Attachment #2) This option would entail clearing of a 50 foot wide by 4.5-mile long swath in the river instead of the proposed 100-foot wide clearing, and would therefore impact about half as much habitat.

I.d.1. Draft EIR incorrectly concludes Narrower Cleared Zone Alternative is infeasible.

The draft EIR improperly concludes that the Narrower Cleared Zone Alternative is "considered infeasible." It says that this alternative "would not provide a suitable level of flood protection deemed necessary and reasonable ... Hence, it is considered infeasible and undesirable." However, the draft EIR provides no analysis of the feasibility of this alternative. The lead agency has confused the issue of this alternative's feasibility with the issue of whether or not this alternative fulfills most of its basic project objectives. There is no evidence in the record that this alternative is infeasible. Considering that a controversial 100-foot clearing project has been undertaken in this river in the past, as noted in the draft EIR, the evidence suggests that the Narrower Cleared Zone Alternative is at least as economically, legally and technically feasible as the proposed program. While the alternative may be "undesirable" to the District, it may represent a feasible way to substantially lessen project impacts while still achieving most of the basic program objectives. The draft EIR's statement that this alternative is infeasible is inaccurate and should be struck, and an analysis based on substantial evidence should be undertaken in the current EIR to determine if this option meets most of the basic project objectives. 7-4

I.d.2. Program Objectives are too narrowly defined to provide for consideration and adoption of Narrower Cleared Zone Alternative or other less damaging alternatives.

EIRs are required to contain a statement of the project or program objectives, and this is typically within the project description section of EIRs. "The statement of objectives should include the underlying purpose of the project." (CEQA Guidelines Section 15124(b)) Further, a "statement of objectives will help develop a reasonable range of alternatives to evaluate in the EIR, and will aid the decision makers ...." (Ibid.) However, the objectives in the draft EIR are crafted too narrowly to allow for consideration of a reasonable range of alternatives to the Santa Ynez River Maintenance Program that would fulfill most the basic objectives and substantially lessen or avoid significant impacts. Instead of containing the underlying purpose, the objective in this case is a very specific outcome – to "maintain existing" (i.e., post-1998 clearing) capacity in the Santa Ynez River. This specific and tightly worded "objective" precludes meaningful consideration and possible adoption of less damaging alternatives, such as the Narrower (50-foot) Cleared Zone Alternative or the 80-foot Cleared Zone Alternative described below. Therefore, the objectives are too narrow to facilitate consideration of a range of reasonable, less damaging feasible alternatives that may meet the underlying purpose of the river maintenance program. The EIR is basically flawed as a result. 7-5

Further, the draft EIR provides no analysis of whether the Narrower Cleared Zone Alternative would meet the basic program objectives. As noted on page 2-1 of the draft EIR, the objectives are to maintain and preserve the conveyance capacity of key waterways in the County. The proposed Santa Ynez River Maintenance Program would provide "14,000+" cubic feet per second (cfs) capacity, and this would meet the objective. However, the objective was crafted so narrowly that it does not allow for an adequate consideration of alternatives. To meet this artificially narrow objective, a strictly clearing-based alternative must be 100-feet wide or more. As a result of this narrowly defined objective, no less environmentally damaging alternatives have been identified in the EIR because none can fulfill the narrowly stated desired outcome. By artificially restricting the basic objective to a specific narrowly defined outcome, the EIR virtually ensures that the only way to fulfill the objective is to undertake the proposed program. This runs counter to CEQA's intent and mandate that a range of reasonable alternatives that substantially lessen impacts be analyzed in an EIR. The objective must not be unreasonably narrow and restricted so as to prevent consideration and possible adoption of less damaging alternatives that meet the <u>basic</u> program objectives. Instead of preventing meaningful consideration of less damaging alternatives, the objectives must be re-crafted to state the <u>underlying purpose</u> rather than a narrowly defined and specific desired outcome. We suggest the following language because it states the underlying purpose rather than a specific desired outcome: 7-6

> The basic objective of the Updated Routine Maintenance Program is to provide a level of protection from flooding and bank erosion generally similar to the level of protection currently provided, (e.g., at the time of NOP release) along waterways maintained by the District.

Such a revision is necessary to accommodate meaningful consideration of less damaging flood hazard reduction alternatives that would fulfill the underlying purpose of the proposed program, and is needed to comply with CEQA.

I.d.3. Narrower Cleared Zone Alternative may meet most of Santa Ynez River Maintenance Program's basic objectives.

Even given the extremely narrow program objective cited on page 2-1 of the draft EIR, the Narrower Cleared Zone Alternative may meet most of the stated basic program objectives. The 50-foot clearing associated with this alternative provides 12,500 cubic feet of water per second (cfs) capacity. According to Table 7-3, this is similar to the capacity that would be provided by the proposed program, "14,000+" cfs. Therefore, this alternative may meet most of the program's narrowly worded "objective" of the proposed program, and was improperly excluded from detailed consideration in the draft EIR. Based on its potential to "feasibly attain most of the basic project objectives" (i.e., provide a similar level of capacity) and its ability to substantially lessen the significant impacts of the 100-foot clearing identified in the 1992 EIR, the Narrower Cleared Zone Alternative should not have been dismissed outright. Instead, it should be considered in enough detail in the current EIR to provide decision-makers with the information necessary to approve it should they so decide. 7-7

I.e. Draft EIR fails to consider numerous alternatives to proposed Santa Ynez River Maintenance program described and analyzed in 1992 EIR.

Alternatives considered in the 1992 EIR include three that would substantially lessen or avoid significant impacts identified in the 1992 EIR: the Full Length Levee, the Setback Levee, and the Partial Levee and Limited Clearing Alternatives. These alternatives provide more flood protection than the proposed program (30,000 cfs, 30,000 cfs and 21,000 cfs respectively to 14,000+ cfs proposed), and therefore they meet and exceed the project's overly-narrowly defined objectives. These alternatives are not in the current draft EIR, even though conditions have changed (see I.f.1) rendering them more feasible now than they were in 1992. 7-8

I.e.1. Use of improper environmental baseline restricts consideration of less damaging alternatives to Santa Ynez River Maintenance Program

CEQA normally requires that the environmental setting or baseline condition be described in an EIR as the condition at the time of release of the NOP. (CEQA Guidelines Section 15125(a).) The draft EIR describes the baseline river capacity as a condition two years prior to the NOP and immediately following the 1998 clearing event, which substantially increased river's capacity. The EIR did not describe the proper CEQA baseline, and this means the narrow program "objective" of "maintaining existing conveyance capacity" is actually restoring the river's 1998 capacity. This outcome is therefore more difficult to achieve, which restricts the range of alternatives that are considered. 7-9

Some feasible clearing alternatives of between 50 feet and less than 100 feet could meet most of the basic program objective as narrowly described in the draft EIR by maintaining existing capacity in the river. The existing capacity at the time of the release of the NOP is not presented in the EIR's existing setting section for water resources. (Draft EIR at page 6-3) Instead, the DEIR uses the inflated and previous capacity at the time immediately after the last clearing event in 1998, estimated to be between 14,000 and 20,000 cfs. The baseline environmental setting has changed and the capacity has been reduced by plant growth in this time but the draft EIR does not describe the proper CEQA baseline capacity (i.e., the cfs figure at the time of NOP release) as required.

It has been reported in the EIR that some tree growth occurs in the 100-foot swath cleared in 1998. If tree growth has not occurred in the cleared swath or has occurred but has been flushed out by high flows, then this would throw into question the very need for the project. Assuming that the draft EIR is correct and tree growth has occurred obstructing 100-foot wide swath, the current capacity (environmental baseline condition at the time of the NOP release) is not as great as it was after the 1998 clearing (14,000 – 20,000 cfs). If the actual CEQA baseline capacity were used in the draft EIR, then this would give better guidance as to what the program objectives mean by "preserving" and "maintaining" the "existing conveyance capacity," and this in turn would shed light on which alternatives meet most of the basic objective. By using a larger "baseline" capacity (the 1998 capacity of the river), the draft EIR makes the already narrow objectives even less attainable. In doing so, it restricts from consideration those alternatives that may meet the narrow basic "objective" by maintaining "existing" (i.e., at the time of NOP release) capacity but that may not restore the river's larger 1998 capacity.

I.f. Additional Less-Damaging Alternatives to the Proposed Santa Ynez River Maintenance Program must be analyzed in EIR.

Alternatives to the proposed 100-foot clearing in the current draft EIR include the 50-foot Narrower Cleared Zone and the 300-foot Wider Cleared Zone alternatives. As noted above, only the Narrower Cleared Zone Alternative meets CEQA's requirements for alternatives that must be evaluated in this EIR, but this option was not carried forward for consideration. Presenting (but not analyzing) only one feasible and less damaging alternative does not meet CEQA's requirement for analysis of a range of reasonable alternatives that can feasibly meet most of the basic project objectives and lessen significant impacts. Therefore, the EIR must consider additional alternatives, such as cleared zones between 50 and 100 feet wide, if they are potentially feasible, if they meet most of the basic objectives and if they substantially lessen impacts. Based on economic, technical and legal factors, 50 to 100 foot wide alternatives are feasible. Based on information regarding alternatives in the 1992 EIR and the current draft EIR, these options would substantially lessen serious environmental impacts, and at lease some would meet the basic program objectives. Without adequate consideration of a range of reasonable less damaging alternatives that feasibly meet most of the basic project objectives, the current EIR is flawed. 7-10

I.f.1. Setback Levee Alternative is potentially feasible and should be considered in draft EIR.

The Setback Levee Alternative was dismissed from meaningful consideration in the 1992 EIR by the lead agency because: 7-11

↓

1. The District stated that it would not be able to secure federal grants, cost sharing, or loans for the levee because it would not provide the standard 100-year protection required of federally funded projects.

2. Acquisition of land for levees may not be possible due to the costs or the unwillingness of landowners to sell.

3. Frequent levee breaches due to the low level of protection provided would expose the District to unacceptable liability.

4. The lack of channel maintenance for this alternative would jeopardize the levees to a degree that is unacceptable to the District. (1992 EIR page 9-9)

These reasons cited as to why this alternative is purportedly infeasible were not analyzed in the 1992 EIR, and are mere conclusory statements unsupported by analysis, evidence and reason. Furthermore, there is no longer a requirement for federally funded projects to provide a 100-year level of protection. The lead agency is aware of this federal policy shift because, along with the City of Santa Barbara, it is cost-sharing with the federal government on the Lower Mission Creek Flood Control Project, a project designed with a 20-year level of protection. Due to this change in federal policy, which occurred in approximately 1994, the Setback Levee Alternative must no longer be considered infeasible for this reason (#1 above).

No analysis of the feasibility of acquiring land for levees was made in the 1992 EIR or in the current draft Program EIR. The statement (#2 above) that the acquisition of land for levees may not be possible begs the question: is it or is it not possible. Unfortunately, the lead agency has done no analysis to support a finding of unfeasibility based on land acquisition issues. Moreover, simply because an alternative may cost more than the proposed program, unless this renders the entire program impracticable to implement, is not sufficient to find the alternative financially infeasible. (*Citizens for Goleta Valley v. County of Santa Barbara*) 197 Cal.App.3d 1167 [243 Cal.Rptr. 339] ("Goleta I").) Furthermore, the landowners along the Santa Ynez River have requested flood hazard reduction for their crops and will benefit from this alternative which provides approximately twice the flood protection than the proposed program. Considering the small Flood Control Benefit Assessment fee the affected landowners pay, it is reasonable to expect that they would be willing to work with the District to render such an option feasible.

The District's third reason for terming this alternative infeasible in the 1992 EIR was never analyzed and is unfounded. The District refers to "frequent levee breaches due to the low level of protection provided." However, this alternative provides 30,000 cfs capacity according to the 1992 EIR - twice the 14,000+ cfs provided by the currently proposed project, and significantly greater than at any time in recent history. This is not a "low level of protection." No analysis was undertaken to support the District's 1992 conclusion that this alternative would result in frequent levee breaks. Furthermore, the 1992 EIR states that the levee would be made of dirt and rocks would not be required "due to its large distance from the river channel." (1992 EIR at page 9-8) If breaching is a concern, under this alternative the levee could be made of rock (available from nearby quarries) to eliminate this possibility, so this does not constitute grounds to find this less damaging alternative infeasible. Lastly, no analysis of the District's liability is included in the 1992 or the current draft EIR, and the District's statement that this liability is "unacceptable" is not quantified or supported by analysis. Without an analysis of the frequency of levee breaching (with and without rock) based on substantial evidence, this third reason cannot be used to summarily reject this less damaging alternative as infeasible.

The fourth reason that the Setback Levee Alternative was considered infeasible in the 1992 EIR is that the lack of channel maintenance for this alternative would jeopardize the levees to a degree that is unacceptable to the District. Again, no analysis of the alleged jeopardy to the levees is presented in that EIR. This alternative should be included in the current draft EIR. If analysis shows the levees would be jeopardized under this alternative, then this alternative can by hybridized with the "Narrower [50-foot] Cleared Zone" Alternative in the current draft EIR and/or incorporate rock into the levee as noted above. This would create a potentially feasible alternative (the hybrid Narrower Cleared Zone – Setback Levee Alternative) that exceeds the narrowly defined program objectives for flood protection and that substantially lessens significant project impacts identified in the 1992 EIR.

In sum, no analysis has been provided in the 1992 EIR or in the draft EIR showing that the Setback Levee Alternative is infeasible. Conclusory statements to that effect in the 1992 EIR are unsupported by reasoned analysis. Furthermore, the circumstances surrounding these purported reasons have changed. Therefore, a current analysis of this alternative and the hybrid alternative described above is necessary to ensure less damaging, potentially feasible options that meet or exceed the objectives are not improperly excluded from the EIR.

I.f.2. Partial Levee and Limited Clearing Alternative is potentially feasible and should be considered in draft EIR

The Partial Levee and Limited Clearing Alternative in the 1992 EIR is similar to the hybrid described above, except that it would include a 100-foot cleared zone instead of a 50-foot cleared zone, and partial levees. It would provide approximately 1.5 times the level of flood protection (21,000 cfs) offered by the proposed clearing program. The District dismissed this alternative as infeasible due to reasons #1, #2, and #3 above regarding the Setback Levee Alternative. Reason #1 is no longer applicable due to changes in federal policy that allow federal financial participation in flood control projects with less than 100-year level of protection. Reasons #2 and #3 are hypothetical and speculative, unsupported conclusions and have not been analyzed. Furthermore, the reasoning that alleged frequent levee breaches due to the low level of protection provided would expose the District to unacceptable liability is invalidated by the fact that the Partial Levee and Limited Clearing Alternative would provide 1.5 times the capacity as the currently proposed river maintenance program. A Partial Level and 80-foot Clearing Alternative should be analyzed in the EIR because it has potential to feasibly meet the objectives and reduce program impacts. Given that this alternative could feasibly exceed the program objectives while potentially avoiding or lessening significant environmental impacts, it must be carefully evaluated in the current EIR. This would help achieve compliance with CEQA's requirements for analysis of alternatives.

I.f.3. 80-Foot Cleared Zone Alternative meets basic objectives, substantially lessens impacts and should be analyzed in EIR.

An additional newly proposed option, The 80-foot Cleared Zone Alternative would establish and upkeep a capacity of approximately 13,400 to 17,000 cfs, based on EDC's extrapolations from figures for 50-foot wide clearings and 100-foot wide clearings given in both EIRs.[1] This is similar to, though slightly less than the 1998 capacity the lead agency seeks to re-establish. It may be very similar to the proper CEQA baseline or the actual existing capacity as of the NOP, which the draft EIR does not identify. Therefore, the 80-foot Cleared Zone Alternative may meet most of the basic project objective of maintaining existing capacity, and meets much of the underlying purpose – flood hazard reduction, implied in the narrowly defined objective. It is not technically, politically, financially, or legally infeasible. It would substantially reduce significant impacts associated with the proposed river maintenance program identified in the 1992 EIR. This includes an approximate 20% reduction in the area of riparian habitat loss and riverbed disturbance. Considering the feasibility of the 80-Foot Cleared Zone Alternative, the substantial lessening of previously identified and still anticipated significant impacts, and the fact that it meets the basic program purpose, this alternative should be carefully analyzed and compared to the proposed river maintenance program in the current EIR.

I.g. Suggested Remedy for Inadequate Alternatives Analyses

I.g.1. Santa Ynez River Maintenance Program Alternatives

To remedy the draft EIR's inadequate alternative analysis with regards to the Santa Ynez River Maintenance Program and the Updated Routine Maintenance Program, the draft EIR needs to be revised and recirculated with a range of reasonable alternatives. These alternatives must be able to feasibly attain most of the basic program objectives while also substantially lessening or avoiding significant impacts. Inclusion and analysis of the five alternatives discussed above (the Setback Levee Alternative, the hybrid Narrower Cleared Zone – Setback Levee Alternative, the Partial Levee with Limited Clearing Alternative, the Partial Levee with 80-foot Cleared Zone Alternative and the 80-foot Cleared Zone Alternative) would help to establish an adequate alternatives section in the draft EIR. In concert with this expansion of the alternatives analyzed, the District may select one of these alternatives as the proposed program and new Environmentally Superior Alternative for the Santa Ynez River Maintenance Program in the proposed Final EIR.

[1] To obtain this estimated range, the 12,500 cfs figure provided for the 50-foot cleared zone and the 14,000 – 20,000 cfs range provided for the 100-foot cleared zone were used. Since 80 feet is 60% more than 50 feet, we took the differences of (14,000-12,500=1,500) and (20,000-12,500=7,500) and we multiplied these differences by 60%. This gave us figures of 900 and 4,500. We added these to the 12,500 cfs figure to generate an estimated range of 13,400 to 17,000 cfs.

I.g.2. Updated Routine Maintenance Program Alternatives

The lead agency must also correct the inadequate analysis of alternatives to the Updated Routine Maintenance Program. To accomplish this, the District should refer to public scoping and draft EIR comments. In addition, the District should carry over elements of the Environmentally Preferred Alternative from the existing certified Program EIR (March 1991), many of which are feasible and reasonable and would reduce significant impacts while fulfilling the underlying program purpose.

According to the certified 1991 EIR, the "Environmentally Preferred Alternative emphasizes a multidisciplinary approach to flood control maintenance...." Its components included new and amended Local Coastal Plan and Comprehensive Plan policies, ordinance revisions, modifications of practices, modified flood control devices (including log weirs, vegetated revetment and jetties) and preparation of Recovery Plans for affected rare species. This alternative was the selected project in the certified EIR. However, the policy changes and ordinance revisions were never implemented because they were later determined to be beyond the scope of flood control. These approved 1991 Environmentally Preferred Alternative's policy and ordinance amendments are not beyond the scope of flood control and represent feasible alternative approaches to achieving the underlying program objective. These elements of the previously certified Environmentally Preferred Program should be afforded current analysis in this EIR as part of the new Environmental Superior Alternative. 7-12

Only some of the modified practices identified in the approved 1991 Environmentally Preferred Alternative have been put in place (not including log weirs, jetties, etc.) and many of these were revised since certification of the 1991 EIR. Overall, the EIR's recommended Environmentally Preferred Alternative was stripped of significant components, revised and rendered less environmentally protective through the Interagency and Public Advisory Committee ("IPAC") process, in which EDC was lead public participant. Many of the components of the originally approved Environmentally Preferred Alternative have not been implemented. Therefore, the 1991 EIR's recommendations constituting its Environmentally Preferred Alternative that were revised or not implemented should be analyzed as potentially feasible and effective Updated Routine Maintenance alternatives. These should be considered as part of the Environmentally Superior Alternative in the current EIR. 7-13

II. Project Description

<u>II.a. The Santa Ynez River Maintenance Program can be considered a stand-alone project and subject to separate environmental review.</u>

Flood control maintenance for the Santa Ynez River has always been treated as a stand-alone project separate from the County Routine Maintenance Program due to the heightened level of biological considerations on the river. Nowhere else in the County is such a waterway maintenance program undertaken. The Santa Ynez River is the only location where the District has used, and proposes to use, a tree mower to create a 100-foot wide cleared swath. Responsible agencies under CEQA that must use this document as a basis for approving permits and Streambed Alteration Agreements should consider requesting that the lead agency conduct separate environmental review for the Santa Ynez River project because it is a distinct project unto itself. Its review should not be muddled with the review and analysis of alternatives to the Routine Maintenance Program. 7-14

II.b. Stream bank repair projects should use bio-technical methods as the standard approach and should only use hardbank methods if bio-technical methods are proven infeasible through analysis in tiered CEQA documents.

The District proposes to undertake bio-technical stream-bank stabilization projects, which generally rely on native plant material to control erosion, in addition to traditional hardbank methods such as grouted and ungrouted boulder rip rap and pipe and wire revetment. Under the proposed project description, the District would have substantial leeway on a case-by-case basis to reject the use of bio-technical methods. As proposed, the District only must, "consider the use of the following types of bio-technical methods when placing new slope protection for eroding banks." The use of "will consider" in the context of this CEQA document provides no assurances that these environmentally superior methods will be employed.

Instead, there should be assurances through enforceable mitigation measures or the project description that bio-technical measures shall be given preference and implemented as standard alternatives to hard bank measures unless proven infeasible through analysis based on substantial evidence in a CEQA addendum or tiered document. Bio-technical bank stabilization measures are often less expensive than hard bank solutions, especially when maintenance costs are factored in. Even so, in specific cases where short-term bio-technical measures' costs may exceed the short –term costs of hard bank projects, higher costs should not preempt these environmentally superior alternatives. Those costs do not render such alternatives infeasible and only represent initial costs that may be compensated for over time through reduced maintenance costs for bio-technical measures. Economic unfeasibility of an alternative can only be found if the alternative renders the project impracticable. The fact that an alternative merely may cost more is not enough to find it infeasible. "The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project." (*Citizens for Goleta Valley v. County of Santa Barbara*) 197 Cal.App.3d 1167 [243 Cal.Rptr. 339] ("Goleta I").) As noted in Dr. Ann Riley's *Restoring Streams in Cities* (1999), hardbank structures often exacerbate erosion in other sections of the stream banks and can create an increased need for costly future bank stabilization projects even though less damaging alternatives exist. (Attachment #3) Under CEQA, costs only become relevant when those costs make a measure or alternative unpractical. In this case, the costs of bio-technical measures may be less than the cost of traditional hard bank methods overall for the entire Routine Maintenance Program, and do not render the primary use of bio-technical measures impractical. 7-15

III. Environmental Setting

III.a. Biological Resources

III.a.1 Western Pond Turtle

This species has been documented by EDC in other maintained creeks in the County, including Glen Annie/Tecolotito Creek between Cathedral Oaks and Highway 101. As noted, this species, as other protected species, rely on the riparian and upland habitats around the waterway, and can "spend extended periods on land." Amphibious species often spend wintertime away from waterways to avoid mortality during high flow conditions. It is during these times that the District is most likely to implement "emergency" high-flow response actions which often cause considerable damage to upland riparian habitats and the surrounding buffer areas where these species are likely to occur. This makes inclusion of the District's storm-response activities in the Program EIR and consideration of mitigation measures at the program level important to the District's ability to minimize its overall biological/habitat impacts. (See Section XVI) 7-16

III.a.2. Red-legged Frog

This species is more widespread in south coast creeks than the draft EIR indicates, and occurs in the San Jose Creek and Glen Annie/Tecolotito watersheds according to EDC's first hand knowledge. This species can travel significant distances overland, especially during wet weather, to recolonize creeks should suitable habitat become available (e.g., if habitat improves due to changes in management and/or restoration activities). Thus, absence of this species does not mean that its habitat is not present. 7-17

III.a.3. Two-striped Garter Snake

The draft EIR incorrectly indicates that since the District has no record of this species in south coast streams that it must not occur there (page 5-80 and Table 5-10). To the contrary, this species occurs in many south coast creeks, typically upstream from maintained segments of creeks, and in some cases within the urban interface. The EIR should note that EDC's Environmental Analyst and the author of this letter, Brian Trautwein, has documented this species in Glen Annie/Tecolotito, Carneros, San Pedro, San Jose, Maria Ygnacio and San Antonio Creeks in the Goleta area. Mr. Trautwein is on the Santa Barbara County Planning and Development Department's list of qualified biologists to undertake work in riparian areas and is able to identify this species. 7-18

III.b. Draft EIR Relies on Incorrect Environmental Baseline.

On page 6-3, the draft EIR illustrates the lead agency's improper characterization of the baseline environmental setting with regards to hydrological conditions in the river. Specifically, instead of describing the environmental baseline setting at the time of NOP issuance, the draft EIR describes the conveyance capacity generated by the 1998 clearing, two to three years prior to the NOP was issued. During this time, vegetation grew within the 100-foot cleared swath, and this vegetation, by partially obstructing this 100-foot wide channel, 7-19 reduced its capacity between the 1998 clearing and the issuance of the NOP. If vegetation had not grown in this area, then there would be no need for the proposed Santa Ynez River Maintenance Program. Since vegetation has recolonized portions of this cleared swath, reducing its capacity and thus necessitating this project, then the CEQA environmental baseline is no longer the capacity provided by the 1998 clearing. It is less. However, the draft EIR fails to state the current capacity at the time of NOP and instead relies on a past (1998) environmental baseline.

This affects the alternatives analysis because the Narrower Cleared Zone Alternative was dismissed from analysis for not meeting the basic objectives. The program objective is to maintain and preserve existing conveyance capacity. The draft EIR incorrectly relies on the 1998 conveyance capacity condition as the existing environmental baseline setting and did not present the actual current baseline capacity. Therefore, there is no way for readers of the draft EIR or for the lead agency and decision-makers to know if the alternatives meet most of the basic objectives. The baseline conveyance capacity must be disclosed to help shape the objectives, and thus to help define which alternatives meet most of the basic project objective and should be carried forward for analysis in the draft EIR. 7-20

The baseline condition with regards to conveyance is at the time of the release of the NOP. Past conveyance conditions have fluctuated widely and irregularly, and have not followed a distinct pattern. Flooding has occurred with as little as 7,000 cfs flowing down the river (page 6-2), while during other times the river has passed approximately 20,000 cfs with little or no flooding. Based on the CEQA Guidelines and case law, the baseline conveyance capacity was the capacity as of the time of the release of the NOP. (Note that if the capacity at time of NOP release was the same as the capacity after the 1998 clearing, then this shows that the 100-foot cleared zone is not being compromised and throws into question the need for this project.) In order to properly portray the objectives and thus to help identify which alternatives meet most of the basic objective, the actual CEQA baseline capacity must be provided in the document.

IV. Environmental Impact Assessment Methodology does not use established County Thresholds of Significance

On pages 5-85 and –86, the draft EIR states, "the following thresholds are used to identify significant biological impacts. These thresholds have been derived from the Environmental Checklist form in the most recent CEQA Guidelines." It goes on to list these four thresholds and uses them to evaluate the significance of biological impacts.

IV.a. Thresholds derived from CEQA Guidelines should include policy conflicts.

The current CEQA Guidelines (Appendix G) include a land use impact category, which includes conflicts with locally adopted plans or policies adopted for the protection of the environment. Therefore, if the CEQA Guidelines and Environmental Checklist in Appendix G were used to develop the biological thresholds of significance, then they should include a threshold that states: 7-21

"A project will be deemed to cause a significant impact under CEQA if it conflicts with any locally adopted plan or policy for the protection of biological resources."

IV.b. District must rely on Adopted CEQA Thresholds of Significance.

However, the County already has established CEQA Thresholds of Significance for biological resources, and in fact is one of the few municipalities in the state that has elected to adopt Thresholds to facilitate a standardized format for classifying the level of CEQA impacts. Once CEQA Thresholds are established by a lead agency through a public process and adopted by ordinance or resolution, they must not be set aside on a case by case basis. This undermines the intent of Thresholds of Significance, which is "standardizing environmental assessments." (CEQA Guidelines Section 15064.7 (Discussion)) The draft EIR is flawed for not utilizing the County's adopted Thresholds of Significance for Biological Resources. These Thresholds include: 7-22

- Substantially reduce or eliminate species diversity or abundance ✓
- Reduce or eliminate quality or quantity of nesting areas
- Limit reproductive capacity
- Fragment, eliminate, or otherwise disrupt foraging areas and / or access to food sources
- Limit or fragment range and movement
- Interfere with natural processes such as fire or flooding which habitat depends on
- Result in change in habitat value and species composistion in oak woodlands and forests including habitat fragmentation, removal of understory, alteration to drainage patterns, disruption of the canopy or removal of a significant number of trees that would cause a break in the canopy or disruption in animal movement through the woodland
- Result in the loss of 10% or more of the native trees of biological value on a project site, or removal of as few as one native specimen tree
- Direct removal of riparian vegetation
- Disruption of riparian wildlife habitat, particularly animal dispersal corridors and / or understory vegetation

- Intrusion within the upland edge of the riparian canopy (generally within 50 feet in urban areas, 100 feet in rural areas, and 200 feet of major rivers ... leading to potential disruption of animal migration, breeding, etc. through increased noise, light and glare, and human or domestic animal intrusion.

- Disruption of a substantial amount of adjacent upland vegetation where such vegetation plays a critical role in supporting riparian dependent wildlife species... or where such vegetation aids in stabilizing steep slopes adjacent to the riparian corridor.

The impacts of the proposed program and many individual maintenance projects that will be conducted in the future under the umbrella of this program EIR exceed many of the adopted Thresholds including those emphasized above. By ignoring the approved Thresholds and employing new thresholds, the subject environmental review process represents a moving target for the public, decision-makers and responsible agencies who rely on a standardized process made possible by the adopted Thresholds. The new thresholds are not equivalent to or nearly as specific as the adopted Thresholds, and therefore may allow impacts that would be deemed significant under the adopted Thresholds to be described as less than significant. Therefore, the impact assessment must be redone utilizing the adopted Thresholds.

V. Significant Unavoidable Impacts in Earlier EIRs are found to be insignificant in current draft EIR

V.a. Draft EIR provides no evidence or analysis in support of wholesale changes in the level of significant impacts identified in 1991 Program Maintenance EIR.

The certified 1991 Program EIR, which includes the Environmentally Preferred Alternative as the approved program, identifies numerous significant unavoidable impacts that the current draft EIR does not identify, even though the methods for creek maintenance, mitigation measures and maintenance impacts have not significantly changed. Under Botany in the certified 1991 EIR, nine significant unmitigable impacts were identified: four for brushing, one for spraying herbicides, two for desilting and two for channel shaping. Three significant unavoidable impacts to Terrestrial Zoology were identified by the 1991 EIR. Eight such impacts were identified under Aquatic Zoology. Under Geomorphology, two unavoidable significant impacts were found. Two other significant unavoidable impacts were found under Water Quality. Under Air Quality Impacts and Noise Impacts, one significant impact each was identified. Lastly, there were three more unavoidable significant impacts under Aesthetics. In total, there are twenty-nine specific, well-defined and distinct significant environmental impacts that, according to the certified program EIR, cannot be mitigated to less than significant. (Attachment #4, 1991 EIR excerpts.) 7-23

The draft EIR discusses a wide range of impact categories. However, the draft EIR finds that the program will result in only four significant unavoidable impacts, and all of these are of a cumulative nature. The attached summary and analysis of impacts from the 1991 EIR constitutes evidence that the lead agency has changed analyzed impacts from significant to less than significant. The draft EIR does not provide any reasoned analysis on which to conclude these impacts will not be significant. Since currently proposed maintenance methods include all of the same activities considered in the 1991 EIR plus additional new activities, all impacts described in the 1991 EIR especially those 29 originally identified as significant and unavoidable, must be discussed and analyzed in more detail in the draft EIR. The classification of these impacts as significant and unavoidable in the certified EIR creates a presumption, based on the evidence and analysis in that document, that past and still proposed typical maintenance activities cause many significant unavoidable impacts. The modified maintenance practices/mitigation measures carried forward from the 1991 EIR are nearly identical to those presented in the current EIR. Only the listing of steelhead has changed and this would tend to make biological impacts (particularly impacts related to steelhead) more significant rather than less significant. Therefore, the reasons for the wholesale change in impact levels from significant to less than significant must be provided and based on substantial evidence.

V.b. Draft EIR provides no evidence or analysis in support of downgrading eight previously identified significant unavoidable Santa Ynez River Maintenance Program impacts to less than significant.

The certified 1992 final EIR for the Santa Ynez River Channel Maintenance Program identified eight significant unavoidable impacts (Attachment #2) that would be caused by the essentially same program and same methods currently proposed. These impacts, however, are no longer identified as significant by the lead agency. Each of these impacts has been downgraded to less than significant in the draft EIR. Had there been a significant reduction in the scope and intensity of the project, a substantially degradation of baseline conditions, new mitigation measures or higher thresholds for determining impact significance under CEQA, then perhaps this wholesale change in impacts levels would be warranted after analysis. However, one change, the listing of steelhead as Endangered, would make the impacts greater, not lesser. Reductions in the level of impacts were not made based on reasoned analysis and substantial evidence, and instead represent arbitrary changes to the impact levels. The District has not provided substantial evidence to justify downgrading of all of the program impacts to less than significant despite earlier conclusions of significance based on substantial evidence in the 1992 EIR. (Attachment #5) 7-24

VI. Biological Impact Classification not supported by Substantial Evidence

VI.a. Displace Wildlife for Hardbank Protection

The draft EIR concludes that this impact will be mitigated over time by habitat restoration, however, there is a limited amount of streambank habitat. It is unique and irreplaceable. Restoration of upland areas does not fully replace or compensate for the significant programmatic loss of streambank habitat and functions. Certain riparian plant species grow only or typically on stream bank habitats, and cannot be easily replaced someplace else. Furthermore, banks provide other critical functions, including providing a place for plants to 7-25 grow adjacent to the creek so the water can be kept shaded and cool, which is essential for endangered steelhead. Placing hardbank protection on a bank precludes the recurrence of bank vegetation which is needed for shading, and planting trees further away from the stream does not shade the creek water. Since there is a net loss of a very limited, unique and valuable stream bank habitat as a result of hardbank protection, this represents a Class I residual impact even after the impact is reduced by planting native vegetation elsewhere.

VI.b. Adverse Effects of Maintenance on Aquatic Habitat

EDC concurs that this biological impact will be significant for the program as a whole, and agrees that instream heavy equipment work should be avoided as much as possible to reduce this impact. We do not agree that the impacts "are not likely to be significant at individual maintenance sites because most of the maintenance work occurs in dry conditions." Considering the rarity, sensitivity and high level of biological diversity and productivity of streambed habitats, impacts will frequently be significant at individual sites. Disturbance by equipment to the substrate, roots, soil microbes, rhizomes and geomorphological conditions (e.g., pools, riffles, overhanging banks and natural stream bed "armoring" by river stones) even during dry conditions can cause significant impacts when these areas become wetted and attempt to recover as ecosystems. Geomorphological conditions take time to form, and cannot be recreated by equipment into a stable configuration. So this impact remains significant on a site by site basis (warranting future site specific mitigation in the Annual Plan/Addenda). (See Section VIII) 7-26

VI.c. Increased Water Temperature due to Vegetation Removal

The draft EIR finds this impact to be less than significant, however, this impact may be significant due to the sensitivity of steelhead to water temperature increases. Instead of analyzing this impact, in support of the finding of no significance the draft EIR's merely lists two questionable reasons. The reasons cited in support of finding this impact less than significant include the reason that water is typically not present when vegetation is being removed. Vegetation is typically removed from creeks that are dry because maintenance is typically done in the fall when some local creeks go dry. However, these same creeks support aquatic species including steelhead, even seasonally in the intermittent streams. Vegetation removal during the summer or fall can cause significant sunlight penetration to the creek the following spring. Furthermore, the draft EIR is incorrect to state that the vegetation being removed does not offer a significant shading effect. Most of the vegetation removed is obstructive vegetation like young willows and other instream saplings. Streambeds are nurseries for saplings and they grow densely and rapidly, often providing substantial shading even at one year old. Removal of the smaller vegetation, not necessarily taller mature canopy trees, may significantly impact water temperatures, and this impact is not mitigated by planting trees at a mitigation bank or locations that would not shade the creek. 7-27

The 1991 EIR classified this impact as significant. (Draft EIR at page 5-87 and –89.) The modified vegetation removal and revegetation practices are the same. One important factor has changed: steelhead were listed as Endangered in August 1997, and this is cited as one of the reasons for updating the maintenance plan and EIR. Considering the change in the protected status of steelhead, the substantiated findings of the experts that prepared the 1991 EIR, and the fact that vegetation removal methods proposed in that EIR are the same as proposed in this EIR, there is no reason to change the level of impact from significant to not significant.

VI.d. Effects of Sediment and Turbidity on Aquatic Organisms

The draft EIR finds this impact to be less than significant, however the 1991 EIR found it to be severe, even for the Environmentally Preferred Alternative. The County has identified sediments and turbidity levels that have been identified by the California Regional Water Quality Control Board to be "impairments of beneficial uses" (page 5-37 and –38). EDC has witnessed higher levels of turbidity in streams with agricultural influences, generally. These streams often flow through areas maintained by the District. The District's activities add to this already high level of silt and turbidity, which clog steelhead gills and may inhibit upstream migration when streams fail to clear up after storms during steelhead spawning season (January – April). This addition to the sediment load caused by heavy equipment work in creeks is significant because it renders an already bad and identified problem worse. The draft EIR provides no analysis of the statement that maintenance activities would not cause higher sediment loads after storms have receded. However, as noted in the draft EIR, the 1991 EIR found this impact to be significant (5-86 to 5-91). The proposed methods for physically maintaining the creeks have not changed, and the only relevant change is the listing of steelhead as Endangered. Therefore, if any change is warranted to this impact level, it would be described as more severe due to the steelhead listing since the 1991 EIR. 7-28

VI.e. Displace or Remove Sensitive Wildlife Species

The District admits that its program could directly affect a host of state and federally listed and otherwise rare species, but the draft EIR concludes these impacts are less than significant. The conclusion relies on pre-activity surveys and relocation of sensitive species.

First, the statement that only red-legged frogs occur is inaccurate. In addition to red-legged frogs, steelhead, two-striped garter snakes, and tidewater gobies and western pond turtles also occur in many of the waterways to be maintained, according to the draft EIR and based on other evidence. Evidence of the occurrence of steelhead in local streams proposed for inclusion in this program is attached. (Attachment #6) Second, the reliance on relocation to mitigate impacts is not reasonable. There is little chance that even a team of biologists could successfully relocate all protected individuals prior to flood control work. At best, some individuals are relocated and others are not, remaining in the work zone and likely suffering mortality as a result of heavy equipment work. In addition, there is no follow up monitoring of the relocated individuals to see if they were relocated to an area that was already at carrying capacity for that species, so relocation does not mean that all the individuals trapped were actually spared. 7-29

Any restriction in the range or reduction in the numbers of a rare species requires a mandatory finding of a significant impact (CEQA Guidelines Section 15065), and the draft EIR admits direct effects on these species. This triggers the mandatory findings of significance.

VI.f. Fish and Wildlife Exposure to Herbicides

This impact is potentially significant because new information not considered by the District indicates that steelhead are very susceptible to glyphosate toxicity. (Attachment #7) In addition, since the 1991 EIR certification, steelhead has been listed as endangered. Therefore, introduction of glyphosate into the critical habitat of steelhead triggers a mandatory finding of significant impact. Glyphosate levels have been found in creeks maintained by the County. The District's contribution to herbicide use Countywide is estimated to be 10% of all usage, including usage by the large residential and agricultural users (draft EIR at page 5-48). This should be considered cumulatively considerable. New mitigation measures or alternatives, such as reducing reliance on herbicides, are necessary to mitigate this significant impact to the maximum extent feasible. 7-30

The District must get a 404 permit from the Corps of Engineers for this program, and is expected to apply for a multi-year program permit. Before issuing the permit, the Corps must undertake consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service under the federal Endangered Species Act. The Corps should consult with these agencies regarding the District's pesticide use to ensure that southern steelhead and other species are not jeopardized by widespread application of toxic herbicides in designated Critical Habitat creeks throughout the County. (Attachment #8)

VI.g. New Grade Stabilizers and Mitigating Impacts to Fish Movement

VI.g.1. Mitigation H-7 does not require mitigating actions to be implemented and is inadequate; Lead Agency cannot defer mitigation measures.

Proposed Mitigation Measures are Inadequate to Reduce Impacts:
The draft EIR correctly notes that the new grade stabilizer structures component of the proposed maintenance program can block federally endangered southern steelhead (*Oncorynchus mykiss*) migration corridors. Restricting the range of a rare species causes a significant impact under CEQA. Therefore, this proposed new program component results in significant impacts. The draft EIR proposes to conduct later analyses and future consideration of vaguely described alternative grade stabilizer designs as mitigation for this impact. However, under CEQA, deferring mitigation measures to a later time and relying on unenforceable mitigation measures is prohibited. 7-31

Relevant CEQA requirements for Mitigation Measures:
Deferring more detailed mitigation of this impact to a later time and/or to other agencies and not included performance standards for the future mitigation measures is not allowed under CEQA prohibits. (CEQA Guidelines Section 15126.4(a)(1)(B).) (See also *Sundstrom v.*

County of Mendocino (1st Dist. 1998) 202 Cal.App.3d 296 [248 Cal.Rptr. 352].) Instead, CEQA requires that mitigation measures reduce the level of physical environmental impacts, (e.g., avoid, minimize, rectify, reduce or eliminate, or compensate) rather than merely requiring future studies that may lead to physical reduction of impacts. (CEQA Guidelines Section 15370.) This holds true for typically more general program EIRs in situations where enough is known by the lead agency to develop detailed measures at the program level. (CEQA Guidelines Section 15168(c)(5).) In addition, measures must be feasible, effective and enforceable to ensure that the severity of the physical impact is reduced. (CEQA Guidelines Section 15126.4.) (See also *Kings County Farm Bureau v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692 [270 Cal.Rptr. 650).)

Application of Requirements to draft Program EIR:
In the current draft EIR, Mitigation Measure H-7 would require the District to "conduct the hydraulic analysis described in H-1." The description of the analysis in H-1 does not include analyses regarding the feasibility of less damaging alternatives to grade stabilizers that could obviate the need for such structures. This hydraulic analysis is designed only "to determine the need, nature, and extent of maintenance activities each year" (draft EIR, page ES-20) and not to determine the need, feasibility or type or location of mitigation actions for fish passage impacts. Conducting this analysis is not valid mitigation under CEQA because it does not lead to implementation of measures that would avoid, minimize, rectify, reduce or eliminate, or compensate for the identified impact. (CEQA Guidelines Section 15370.) 7-32

The impact is found to be significant but mitigable to less than significant by relying on a deferred and unenforceable mitigation measure. This conclusion is not based on substantial evidence concerning the effectiveness of proposed mitigation. For example, there is no analysis of how the District proposes to prevent blockage of migration. The draft EIR lacks a description of how ungrouted stabilizers made from native rock would prevent inhibiting steelhead migration. It also includes no references to supporting materials (e.g., documents regarding fish passage including Department of Fish and Game and National Marine Fisheries Service documents). As the District is aware, these agencies have a role in the future permitting of these structures. Hence, it appears that the District is deferring more detailed mitigation of these impacts to these agencies and to a later time and is failing to include performance standards for future designs or mitigation measures, in violation of CEQA. (CEQA Guidelines Section 15126.4(a)(1)(B).) Instead, the program EIR should adequately address mitigation in greater detail than it does since enough information regarding designing fish-friendly grade stabilizers is currently available to the lead agency to do this.

A vague statement on page 5-97 asserts that the impact is mitigable "because it can be avoided by designing a stabilizer that minimizes future downstream scouring, per Mitigation H-7." Mitigation H-7, however, only requires the District to "first consider stabilizer designs that use native ungrouted rock and that minimize the formation of vertical drop, as feasible." (Emphasis added) This measure does not require the District to design these structures to avoid the impact to fish migration described on page 5-97, only to first consider designs that allegedly would minimize the impact. No analysis of the effectiveness of these designs at passing migrating steelhead is made, and instead the draft EIR relies on an incorrect assumption that ungrouted stabilizers somehow do not inhibit or block migration.

By only requiring the District to conduct later hydraulic analyses – an analysis that does not consider alternatives or mitigation for the impacts to fish migration – this District-proposed measure fails to reduce the identified impact. This is deferral of the analysis and description of mitigation that should occur in this EIR. This measure, since it requires the District only to conduct and analysis and to consider purportedly less impacting "native ungrouted rock" designs before constructing grade stabilizers, is not enforceable and cannot be relied upon to find this impact less than significant. (CEQA Guidelines Section 15126.4.)

The draft EIR assumes that if new structures are not grouted (cemented) they will be lesser barriers to steelhead than grouted structures. However, grade stabilizers in streams are designed to cause elevation changes in the creek bed and surface water, and therefore by their nature, as the draft EIR concludes, they block steelhead or inhibit steelhead passage by causing additional expenditure of energy by steelhead to pass the structure. Regardless of whether stabilizers are grouted or not, due to the inherent nature of their design they create abrupt elevation changes in streams, and thus impact steelhead migration. By restricting the range of steelhead, a federally endangered species, the new grade stabilizer component of the proposed program triggers CEQA's mandatory findings of significance. This impact is not adequately mitigated in the draft EIR and remains significant (CEQA Guidelines Section 15065) necessitating analysis of more detailed and enforceable mitigation measures or alternatives to these structures.

The District has the technical knowledge of grade stabilizer designs and is the agency that builds and maintains them. Substantial technical information exists with regards to 1) the fish passage impacts caused by grade stabilizers, and 2) mitigating impacts to steelhead and salmon migration through technical design features in instream structures. Therefore, the District has or has easy access to the information needed to develop effective and enforceable mitigation measures for this specific identified impact to fish migration. Thus, the District cannot defer mitigation of this well-known significant impact to a later time or to other agencies. (*Sundstrom v. County of Mendocino* (1st Dist. 1998) 202 Cal.App.3d 296 [248 Cal.Rptr. 352].)

Moreover, "A Program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible." (CEQA Guidelines Section 15168(c)(5)) It is possible and necessary to provide effective, enforceable and more detailed mitigation in the current EIR. It is inappropriate under CEQA to inadequately mitigate a specific and known significant impact through a program EIR when enough is known about the impact to adequately address mitigation at the program level. Unfortunately, there is no commitment by the District to develop more detailed or site specific fish passage mitigation measures through later CEQA documents, including planned annual documents tiered from this program EIR. Thus, in each tiered CEQA document, the District could refer back to Mitigation Measures H-1 and H-7 and to the Program EIR and claim grade control stabilizers "are merely part of the program which had been approved earlier, and no further CEQA compliance would be required." (CEQA Guidelines Section 15168.) However, as noted herein, these measures are not enforceable and lack detail and supporting analyses and evidence regarding their purported effectiveness. Information regarding fish-friendly designs is available and should be used to develop meaningful mitigation measures in the program EIR.

Conclusion:

In summary, this draft EIR requires studies as mitigation, and these studies will not necessarily lead to reduced impacts to fish passage. This is unenforceable mitigation. The draft EIR defers the development of mitigation measures that could be developed now to a later time and possibly to other agencies. Without mitigation measures that are shown to be effective, that are required to be implemented, and that are enforceable, the draft EIR is inadequate to assure the public this identified impact will be avoided or reduced to the maximum extent feasible.

VI.g.2 Draft EIR should consider alternatives to Grade Stabilizers

The draft EIR fails to consider alternatives to grade control structures to maintain channel stability. The EIR should discuss off-stream alternatives to grade control structures that could feasibly reduce the impact to endangered fish migration. Such alternatives may include off channel detention facilities that capture stormwater runoff and hold it until storms pass before releasing the water for irrigation, groundwater recharge or instream biological resources. By reducing runoff rates that have been increased by development of impervious urban surfaces, stream channels' stability can increase reducing the need for and avoiding the significant impact of grade control structures in certain cases. 7-33

Grade control structures that are designed to be entirely beneath the streambed elevation, such as those constructed by the District on Maria Ygnacio Creek following the 1990 Painted Cave fire, may not pose a long term impact to fish migration. Structures that would not block steelhead because they would be beneath the streambed should be analyzed as alternatives to traditional grade control structures, and are feasible based on their installation in Maria Ygnacio Creek. Additionally, the EIR should analyze the effectiveness of using numerous shorter stabilizer structures in place of fewer taller ones as an alternative designed to reduce the significant impact of restricting the range of Endangered steelhead.

VII. Biological Mitigation Measures are not Enforceable and do Not Reduce Impacts to Less than Significant

VII.a. Proposed Mitigation Measures

VII.a.1. Measure B-1

This measure provides that it would be sufficient to mitigate only one time for repeated clearings of the same section of creek or river after vegetation has begun to reestablish after previous clearings. The lead agency is incorrectly asserting that once it clears a creek 7-34 segment for the first time, that that segment will never again provide environmental functions, and thus that it is adequate to mitigate for the repeated clearings just once. However, each time clearing vegetation, desilting, herbicide application, channel shaping, or other activities occur in a creek, they cause impacts to functions. Some of these functions only occur in streambeds, so replacing the removed vegetation only once outside of the streambed does not mitigate the impacts to less than significant. One example is the function of bio-filtration, wherein streambed plants and microbes trap, assimilate, break down and otherwise render harmless many pollutants including nutrients, bacteria, sediment, etc. By removing the plants and disturbing the substrate through maintenance, this function is compromised significantly. This impact occurs each time there is maintenance that disturbs the bed, and therefore, this impact must be mitigated each time.

The EIR must consider reasonable mitigation measures that reduce significant impacts to the maximum extent feasible. This draft EIR does not even consider mitigating each impacting maintenance episode or using a higher mitigation ratio for impacts to habitat than proposed (1:1), even though such mitigation measures were suggested in public scoping comments. Local environmental groups and the District have been at odds over this controversial "one-time only" mitigation practice since the District initiated it after the 1991 EIR was approved. The program should include compensatory habitat mitigation measures for each maintenance activity that causes impacts.

VII.a.2. Measure B-3

This measure only requires the District to "periodically monitor major vegetation removal activities to ensure that appropriate methods and limits are used." The appropriate methods and limits, which would constitute the mitigation measures, are not described. This "mitigation measure" is really a requirement for monitoring, but monitoring is not mitigation. (CEQA Guidelines 15370) To be adequate monitoring requirements, "periodically" should be 7-35
defined. Furthermore, "periodically" monitoring runs counter to other necessary mitigation measures (including B-6) which appropriately imply complete mitigation during the duration of maintenance. To be adequate mitigation, the "methods and limits" should be described. This measure, and B-1 above, fail to discuss whether the measure avoids or substantially lessens the impact as required. (CEQA Guidelines Section 15126.4)

VII.a.3. Measures B-5 and B-6

As noted above, relocation of rare species, which constitutes take, triggers the mandatory findings of significance, so B-5 is not sufficiently effective and cannot reduce impacts to rare species to less than significant. B-6 would require the sole District biologist to be present during the duration of each maintenance activity that could affect a rare species. This 7-36
mitigation is not sufficiently effective because no single biologist is able to identify all individuals of rare species present and thus to direct work to avoid each of the individuals. Therefore, impacts including reducing the numbers and restricting the range of rare species remain significant.

VII.b. Suggested Mitigation Measures

VII.b.1. Eradication of Non-natives and Revegetation of Riparian Buffer Zones

The District has typically limited its habitat restoration and revegetation mitigation actions to creek banks, and has rarely undertaken revegetation of the area outside of (land-ward from) the existing bank top. The riparian buffer area – that area outside of the existing riparian corridor, should be the target of District mitigation efforts. In many of these areas, including County-owned lands and flood control easements, neighbors have planted non-native landscaping plants including invasive species. These sites are prime locations for District mitigation actions. The neighborhood landscaping on County land along San Jose Creek adjacent to Somerset Road is a perfect example of this common situation. Ample science supports the conclusion that the health of the buffer relates to the health of the stream. By eradicating non-native pant species and revegetating buffer areas (up to 100 feet from the bank top where feasible, consistent with general plan policies and recommendations) the District can partially mitigate impacts to creek habitats and some of their functions. Not all functions can be mitigated in this way. As noted herein, instream bio-filtration functions compromised by District actions cannot be recreated through revegetation outside of the creek bed, but such revegetation can help reduce the amount of pollution reaching the streams, partially reducing this identified water quality/biological resource impact. Buffer zone restoration reduces noise, light and human disturbance to creeks by forming a barrier to these disturbances. It controls erosion and helps keep silt out of creeks, reducing other program impacts. Therefore, riparian buffer zone enhancements through removal of non-natives and revegetation should be added to the list of mitigation measures or incorporated into Measure B-1. 7-37

VII.b.2. Revegetation of the Streambed

After the District clears a streambed, it is exposed to the forces of moving water causing erosion and greater disturbance than would occur if the stream was not cleared and destabilized by removal of plants and natural bed armoring by river stones. In certain cases where streambeds are wet but no storms are expected, the District could seed stream beds with locally collected native herbaceous plant seeds. Species that could become obstructive should not be used. Adding bio-filtering plant species to the creek bed can mitigate the identified significant program impact of lost bio-filtration. 7-38

VII.b.3. Providing Fish Passage

The draft EIR identifies an impact to fish passage caused by new grade stabilizers. This impact can occur when grade stabilizers are repaired too. Other maintenance actions adversely impact steelhead by changing the geo-morphology, eliminating pools, increasing turbidity and sediment, increasing the water temperature, and eliminating cover and habitat heterogeneity (i.e., logs, boulders, overhanging banks, etc.) The 1991 EIR finds these impacts 7-39 significant, the proposed program maintenance methods are not changed, and steelhead have been listed as endangered. Therefore these impacts are still significant, and require mitigation. The District should follow through on a concept it presented three years ago to the EDC. It should propose as mitigation the removal or modification of existing structures in creeks that are barriers to steelhead migration, even if those structures were not built by the District or were built long ago. This is a feature that a Recovery Plan (part of the 1991 approved program) would have included if it had been developed by the District as proposed in the 1991-approved project and EIR. Regardless, such mitigation is technically, economically and legally feasible, and it mitigates the impacts caused by proposed future District actions (as well as past District actions). Allowing steelhead passage through the urban areas is in the District's and the environment's best interest because it can allow steelhead to migrate through (rather than being trapped in) maintained sections of creeks where warmer water, sediment pollution, and maintenance actions can threaten them.

VII.b.4. Runoff Detention

The District's sister agency in Water Resources is Project Clean Water. This entity is developing strategies to reduce urban runoff pollution in creeks. One of the primary concepts for reducing stormwater pollution in streams is to detain the runoff before it enters creeks. Detention basins often double as habitat areas because they are typically moist areas where riparian and wetland plants and animals establish residence. Basins capture the water flowing off polluted landscapes, allow it to recharge, bio-filter it through the vegetation and soil, and discharge cleaner water to creeks. The District could provide valuable indirect mitigation of its program's water quality and biological impacts by helping in the effort to control urban runoff, and this would mitigate the District's identified significant water quality impacts, specifically, the program impact on bio-filtration in streams. Similarly, the District could construct bio-filters in County open spaces along creeks in order to filter runoff water before it enters the creeks. 7-40

This measure would also constitute a valuable addition to the proposed program because it can reduce peak flows and thus reduce flooding and bank erosion, the two hazards the program seeks to minimize. Detaining water in basins or cisterns prevents it from entering the creek immediately, and thus reduces flow volumes and velocities. Such actions should be made part of the proposed program or an alternative because they constitute alternative approaches to fulfilling the basic objectives that are feasible and that substantially reduce significant biological and water quality impacts.

VII.b.5. Acquisition and Restoration of Easements

The District should obtain more easements, conduct habitat restoration in those easements and set them aside as conservation easements to provide habitat in perpetuity to mitigate its significant impacts to habitats. 7-41

VII.b.6. Removal of Hardbank Protection and Concrete Lined Channels

The program will cause loss of bank habitats, and this is an unavoidable significant impact as noted above because creek banks are limited, valuable, and cannot be recreated or compensated for by habitat restoration away from the bank. It also substantially disrupts streambed habitats. As mitigation, the District should consider removal of hardbank protections and concrete lined channels where they are no longer needed, and restoration of banks in these areas. This is being done as part of the District's Lower Mission Creek Flood Control Project, and thus is feasible. 7-42

VII.b.7. 1991 Program EIR's Environmentally Preferred Alternative

The components of the 1991 EIR's program that were not carried forward and implemented (including the policy and ordinance amendments), even after the program was approved, as discussed in this letter under Alternatives, can be considered potentially feasible mitigation measures to reduce the program impacts. In particular, the District could work with Project Clean Water (PCW) in its ongoing policy review and update designed to develop better policy language for runoff control and water pollution in creeks. Developing specific new policy language is relevant to the maintenance program and was proposed in the 1991 EIR. It should be revisited since it was never done and since PCW is broaching the subject now on its own. 7-43

By reference, EDC hereby incorporates all the mitigation measures adopted in the 1991 EIR, since they many were never implemented, and recommends that they be applied to the subject program to reduce identified significant impacts to water quality and biological resources.

VII.c. Los Carneros Mitigation Bank does not provide adequate mitigation for instream impacts

Under CEQA, the impacts of mitigation measures must be discussed in an EIR. (CEQA guidelines 15126.4(a)(1)(D)) The Los Carneros Mitigation bank would result in indirect impacts to the streams maintained by the District because it would allow the transferring of habitat from many streams to a centralized location that does not support the same ecological functions and values as the streams being impacted. EDC submitted a 9-27-00 letter to the Corps of Engineers (Attachment #9) detailing impacts from the proposed bank. This includes impacts to steelhead and to other listed species caused by the stream maintenance that are not mitigated at the site of the impact. Impacts to steelhead in streams, including blockage of migration, water quality impacts, loss of cover, etc., cannot be mitigated at Los Carneros Park because steelhead do not occur there, and it is not even a stream. Potential habitat within a proposed mitigation bank does not compensate for take or other impacts to listed species elsewhere because it does not have the habitat to support them, and broad mitigation like planting native species inadequately compensates for take and impacts to listed species that do not occur at the bank site. (*San Bernadino Audubon v. Metropolitan Water District* (1999) 71 Cal.App.4th 382) 7-44

VIII. Water Quality Impacts

VIII.a. Bio-filtration

The draft EIR fails to address the role of microbes in bio-filtration. Simply replanting vegetation outside the channel cannot mitigate the impacts to the bio-filtration functions. Off-channel water quality improvements such as construction of bio-filters or detention basins can help to mitigate this impact. Ample evidence suggests that small streams are vital to pollutant removal through bio-filtration (Attachment #10) so the District needs to develop mitigation measures for the loss or impairment of bio-filtration functions. We suggest including the innovative and proven methods recommended above. 7-45

VIII.b. Sediment

As noted in Santa Barbara Audubon's April 2001 letter to you, sediment binds certain pollutants, including bacteria, nutrients and metals. As the District knows, there is a serious bacteria pollution problem in creeks in this area. By causing sedimentation impacts, the program also exacerbates bacteria pollution impacts. Further, by removing the "sediment-trapping" vegetation from the creek beds, the District is further impairing the bio-filtration capabilities of local streams because when streams trap sediment, they are trapping and beginning to break down the pollutants that will otherwise be transported downstream in creeks to the beach. If sediment trapping vegetation is to be removed, the District needs to compensate for the impaired bio-filtration functions, and such mitigation is feasible, particularly through coordination with, Project Clean Water to develop and implement (as PCW is beginning to do) measures to mitigate these related water quality impacts. 7-46

VIII.c. Thermal Pollution

The draft EIR addresses thermal pollution, but finds the impact less than significant. This was identified as significant in the 1991 EIR, and the proposed practices have not changed, new, damaging practices are proposed, and steelhead, a temperature sensitive species, has been listed as endangered. Therefore, this impact remains significant. Please refer to the discussion above regarding impacts to steelhead caused by increased water temperatures and vegetation removal. 7-47

IX. Aesthetic Impact Assessment

The draft EIR does not appear to recognize that under CEQA, impact severity is affected by setting and project intensity. The EIR finds all aesthetic impacts to be less than significant. The 1991 EIR found significant visual impacts. The methods of maintenance are essentially the same as the 1991 program, except that new structures, including grade stabilizers and bank protection, and a 100-foot wide cleared zone on the Santa Ynez River are proposed now. These additions should <u>increase</u> the visual impact of the program, but now the impact has been changed to less than significant, without an analysis based on substantial evidence. The 1991 finding creates a presumption that view impacts from flood control maintenance are 7-48 significant, and the District must submit substantial evidence to show why it now proposes to classify this impact as less than significant.

Creeks are recognized as one of the County's and local cities' great visual resources in local agencies' planning documents, including the City of Santa Barbara's general plan. The draft EIR finds that since maintenance activities are localized in nature they are not significant. This is tantamount to saying that a small hole in the Mona Lisa is localized so it is not a significant impact to the painting. The important aesthetic settings of creeks makes visual impacts to them that much more significant. Impacts (including visual impacts) that may not be significant in an urban setting may be significant in a rural or natural settings. Furthermore, while maintenance activities can be localized, the 4.5 mile 100-foot wide swath to be cleared and kept clear along the river is not localized. Many creek maintenance segments are hundreds of feet to miles long. Additionally, the intensity of work adds to the visual impacts. Intense activity by heavy equipment in creeks, even in a localized creek, is significant because of the scenic setting of creeks and the intensity of the impact represented by heavy equipment earth-moving and vegetation removal work.

X. Cumulative Impacts

The draft EIR does not consider past, present, and reasonably foreseeable projects that would add to the cumulative impacts of the proposed programs. For instance, Section 9.0 of the draft EIR refers to "Land Development Projects," "Road Maintenance Projects," and "Agricultural Activities." However, the draft EIR does not discuss projects the impacts of which, when combined with the impacts of the proposed maintenance programs, would be significant. Limiting its consideration to general categories of projects does not fulfill CEQA's intent and requirement to analyze the cumulative impacts of the proposed project and reasonably foreseeable future projects, past projects and present projects. Instead, the EIR should consider specific projects as well as general categories of projects. 7-49

X.a. Lower Mission Creek Flood Control Project

The proposed Lower Mission Creek Flood Control Project, proposed by City and County of Santa Barbara and the Corps of Engineers has its own maintenance plan. The proposed final EIR/EIS has been released. This project, by widening the creek, will reduce velocities and cause sediment to drop from the water column and build up in the stream much more so than it does now. (Attachment #11) Therefore, based on the evidence in the record for the Mission Creek project, it will create a need for additional maintenance work in Mission Creek, but the draft EIR does not even mention that this project is proposed. 7-50

X.b. Santa Ynez River Water Rights permit amendment project and EIR

The Bureau of Reclamation's appropriative water rights permit from the State Water Resources Control Board for water diversions at Cachuma Reservoir may soon be amended through a water rights hearing process at the State Water Board. This project is described in the NOP for the forthcoming draft EIR for the permit modification, in the subject Biological

Opinion, and in the Lower Santa Ynez River Fish Management Plan. The physical impacts of this project are proposed to include increased releases of stored water from Cachuma into the Santa Ynez River during the growing season. This is expected to increase the growth of obstructive vegetation from approximately Highway 154 downstream to the Lompoc Wastewater Treatment Plant. The draft EIR for the flood control maintenance program does not include this section of the river. However, given the foreseeable increased releases that are called for in the Plan, in the Opinion, and in the NOP for the water rights permit modification EIR, the draft program EIR must address this issue as a potentially significant cumulative impact. 7-51

In anticipation of increased vegetation growth in this section of the river, the EIR should discuss the potential need for extending the Santa Ynez River project reach upstream, and should discuss the cumulative impacts of doing this. Specifically, it should analyze the potential impacts of flood control clearing (vegetation removal, heavy equipment work in flowing river, etc.) in the river upstream from the wastewater treatment plant. Any new clearing needed in this reach would be a considerable contribution to a cumulative significant impact because the water rights would increase the vegetation, a beneficial impact, but vegetation removal would constitute a significant adverse impact, and is thus a considerable contribution to the impact. This section of the river has not previously been cleared. This potential future clearing would be in areas that have not historically been cleared and new removal of riparian habitat from the river would be significant pursuant to the County's CEQA Thresholds of Significance for biological impacts.

X.c. Atascadero Creek Maintenance Program

The Atascadero Creek Maintenance program is an approved program similar to the program now proposed. Please describe why this program was not included in the Updated Routine Maintenance Program when the Santa Ynez River Program was included. The Atascadero Creek program raises similar impact issues as the proposed Program, and was improperly excluded from cumulative impact analysis. 7-52

X.d. Draft EIR confuses significant programmatic impacts with significant program cumulative impacts.

In the impact summary table and Section 5.0, the draft EIR identifies only four significant impacts. However, the draft EIR calls these cumulatively significant impacts when in fact they are program-specific impacts. When these impacts are viewed together with the impacts of other programs and projects, then they can be termed significant cumulative impacts. However, in the context of the impact assessment for the proposed program, these impacts must not be confused with significant cumulative impacts. The draft EIR should refer to these impacts as significant impacts of significant programmatic impacts rather than "cumulative significant" impacts. 7-53

X.d. EIR reference to increasing extent and frequency of maintenance is not reflected in Project Description; known future program expansion is segmented from currently proposed program.

On page 9-3, the draft EIR discusses increasing the frequency and extent of maintenance to accommodate predicted buildout under approved general plans. However, this issue is only discussed in the context of cumulative impacts. Instead, since this is a program EIR and since the District concretely envisions increasing the extent and frequency of maintenance, the impacts from increasing the extent and frequency of impacts must be considered in the program's impact analysis. The program description should be revised based on the planned increases in the maintenance program's extent and frequency. If the District is aware of pending or foreseeable increases in the extent and frequency of the maintenance program, then the program must be so described. To exclude from the description of the program known future increases in the intensity and frequency of the program constitutes a piecemeal review of the program. The District will clearly have to undertake an update or supplement to the program EIR, after it is certified, to address the impacts of currently known anticipated program expansion. This is counter to CEQA's requirement that larger projects (including known future phases) not be broken down or segmented into smaller projects. CEQA requires that the whole of an action be considered in a single CEQA document, so deferring analysis of the impacts of a known program component (expansion of intensity and frequency) violates CEQA's rules against piecemeal review of projects. 7-54

Similarly, reasonably foreseeable future phases of a project must be included in the project description and analyzed in an EIR. (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 393-399 [253 Cal.Rptr. 426].) By admitting necessary future increases in the extent and frequency of the proposed program but not analyzing the impacts of this anticipated expansion of the program, the draft EIR violates CEQA.

XI. Assessment of Beneficial Impacts uses Incorrect Environmental Baseline Setting

The draft EIR concludes that there will be beneficial impacts caused by the program. The only way this can be concluded is by using the incorrect CEQA baseline environmental setting. Using the correct baseline (e.g., the environmental conditions at the time of the NOP), no beneficial impacts result from the project because it does not improve the environment and does not increase flood protection above the current level. The objective is to maintain existing capacity of waterways, not to increase the existing capacity. If the baseline capacity were to be increased by implementing the program, then beneficial impacts to the human environment may be identified. However, if the program objective as stated is met (i.e., capacities are maintained at existing levels), then no beneficial impact occurs. If the District wishes to express the benefits of the program relative to the No Project Alternative, then the only suitable manner to do this in an EIR is in the alternatives analysis section, not by using an incorrect baseline in the impact analysis section. 7-55

XII. The Standard Maintenance Practices (SMPs)

XII.a. Existing Environmental Protection Requirements of SMPs are being deleted from Proposed Program

The approved SMPs derived from the certified EIR were weakened versions of components of the 1991 Environmentally Preferred Alternative. Nonetheless, they contained important requirements that are not being carried forward into the current mitigation package. As one of many examples, the SMPs which were developed through the lengthy IPAC process and approved by the District's Board, includes SMP #1. This requirement states, "Any federally, state or locally listed species and its habitat shall be protected and avoided." However, now the District proposes that it can work in such habitats, as long as there is monitoring and an attempt to relocate rare species. This is a substantial weakening of existing requirements that were derived through the previous certified EIR. This weakening of the requirements for protecting habitats should be reflected in the EIR, but is not. The alternatives analysis should compare the ongoing use of the current SMPs and the impacts of the current program to the impacts of the proposed program without this requirement to avoid rare species habitats. 7-56

The draft EIR is remiss for failing to analyze the proposed program's failure to carry over these watered down but still valuable SMPs / mitigation measures from the 1991 EIR. These measures have been somewhat effective (although not followed by the District in all cases), and constitute the No Project Alternative – the future under the existing maintenance program with the SMPs. The Alternatives section should closely analyze how under the proposed program each of these 79 SMP requirements would exist, but how under the proposed program, mitigation measures are proposed that are weaker than the SMPs. As an example, Measure B-5 is weaker than SMP #1 because it does not require avoidance and protection of listed species and their habitats.

XII.b. Riparian Corridor Management Policies, 1991 Program Mitigation Measures and SMPs have not been complied with and the EIR fails to analyze compliance

The draft EIR is flawed for failing to analyze the District's compliance with adopted mitigation measures from the 1991 EIR, with the Riparian Corridor Management Goals and with the existing SMPs. The District has violated the SMPs more often than rarely. Particularly SMPs #1 and #11, which require avoidance of listed species habitats, are routinely violated because most or all creeks are designated critical habitats for endangered species now. As an example, in February 2000, the District bulldozed at least one portion of San Jose Creek to repair a bank and shape the channel. This violated SMPs #1 and #11, and possibly others, and this is not an isolated instance. The draft EIR should scrutinize the District's past compliance with its required mitigation measures from the original EIR and with the SMPs. 7-57

In addition, the District approved policies (page 8-21 and –22) for protecting the environment while conducting maintenance. These goals are listed in the draft EIR, but no assessment is made of how the District complied with them. Under Goal #1, the District has not preserved 7-58 and enhanced rare and sensitive species or geomorhologically stable streams, and has actually degraded habitats and stream stability. (See 1991 EIR) This information is important to paint a picture of the track record of compliance with these requirements, which gets at the ability of the current requirements to mitigate impacts, and particularly at their enforceability.

XII.c. Species Recovery Plans

One component of the 1991 Environmentally Preferred Alternative was for the District to prepare Recovery Plans for affected rare species. This was never done. After certification of the 1991 EIR and approval of the Environmentally Preferred Alternative, Recovery Plans were deemed to be outside of the scope of what the District needed to do. These species have continued to decline in local creeks, and District maintenance continues to degrade habitat conditions for these species. This requirement was not beyond the scope and was, as the 1991 EIR noted, essential to minimizing the significant biological impacts of maintenance. This requirement is still needed, and the District should abide by the original EIR's requirement or provide substantial evidence in the current EIR as to why Recovery Plans are not needed to minimize District impacts. 7-59

XIII. Format of Tiered CEQA Documents

In order to ensure that tiered documents provide the additional level of detail that is not feasible to provide in the program EIR, a mitigation measure and condition of approval should require Annual Plan CEQA documents to include a standard site-specific mitigation section for each stream included that year. The typically general nature of program EIR mitigation measures should be refined through site specific review and application of less damaging alternatives and site-specific mitigation measures at the Annual Plan stage. Such application of site-specific measures and alternatives should be documented through the Annual Plan process, and the format of the Annual Plan should include a section for site specific mitigation measures to augment the current listing of the standard maintenance practices (SMPs) developed through the IPAC process. 7-60

XIV. Policy Consistency Analysis

It is very important for this document to analyze the program's consistency with local plans and policies because inconsistencies can help identify significant environmental impacts. Inconsistencies with local plans and policies, such as the recommendations of the Conservation Element and community plan policies, are grounds for finding a potentially significant land use impact under CEQA (Guidelines Appendix G, Land Use Impacts). 7-61

The Conservation Element recommends that 100-foot buffers be preserved around creeks and rivers. Community plans require more specific setbacks for new development, such as grading and new structures. Traditional flood control maintenance activities involve grading and other development in creek beds. Clearly traditional flood control activities cannot typically avoid creeks (though alternative approaches including those identified as part of the Environmentally Preferred Alternative in the 1991 EIR can help accomplish this). Other plan policies require avoidance of endangered species habitats. The program involves working in these habitats, including during seasons when the species are present in those habitats, and thus violates local policies.

The City Conservation Element requires that habitats of rare and endangered species shall be avoided and preserved, and that no further channelization of streams, in any form, can occur. Hard bank structures like grouted rock are a type of channelization. The proposed program is inconsistent with the City's general plan. The program would also raise issues of consistency with the applicable LCPs. Since the District must obtain CDPs from various agencies in the County, the program must be revised to ensure consistency with the LCPs. This will entail requiring that the least damaging feasible alternative be pursued instead of other options, and that the best mitigation measures available be implemented as required under the LCPs and Coastal Act.

XV. Future Permitting

XV.a. Army Corps of Engineers

The District must obtain a Clean Water Act Section 404 permit for mechanical clearing of the Santa Ynez River (Attachment #12) because this work is presumed to result in discharge if fill or dredged material. The Corps recently modified its definition of "fill material," so the EIR should analyze whether or not this changes and future permitting scenarios, such as discharge of plant material in the river or redistribution of sediments in the creeks. 7-62

XV.b. California Department of Fish and Game (DFG)

There is an inconsistency between the DFG's performance standards for revegetation success and those of the proposed program. The DFG standards are higher. DFG must rely on this EIR as the basis for its decision about future Streambed Alteration Agreements. Therefore, the program mitigation's performance standards must be made consistent with DFG's standards. 7-63

XVI. Emergency Flood Control District Actions as a known Program Element

The District conducts emergency flood control work in creeks on a frequent basis. Emergency flood control work in response to high flow events is a known activity that has taken place in local creeks since the formation of the District. This work will always occur after large storms and this makes it a known element of the District's overall program. The program description and draft EIR are remiss for not discussing emergency flood control work, including specific known types of storm-response actions and their impacts because it is part of the District's program and it should not be segmented from the non-emergency work. The storm-response methods are similar to those of maintenance (e.g., debris and sediment removal, bank stabilization), and primarily only the timing of the actions differs. This draft Program EIR should be utilized to assess the storm-response actions' impacts at a program level, and to analyze feasible mitigation measures and alternatives at the same level. Therefore, these actions, including the winter to spring timing of them, should be considered 7-64 as a known and anticipated component of the District's program so that reasonable alternative storm-response actions and mitigation measures can be developed at a program level for later implementation as needed during action implementation. This would avoid a piecemeal environmental review.

XVII. Conclusion

The current draft EIR fails to identify many significant unavoidable impacts that were found in the 1991 Program EIR, and instead, without relying on substantial evidence in the record, finds these previously identified 29 Class I impacts will now essentially all be less than significant. The proposed maintenance methods and mitigation measures are nearly identical to those proposed as part of the Environmentally Preferred Alternative and approved as part of the program in 1991. Additional maintenance actions have been added to the project description, including new grade stabilizer structures and clearing of 4.5 miles the Santa Ynez River. These additions would tend to increase the level of environmental impacts, particularly when coupled with the relatively new listing of steelhead as Endangered and designation of all creeks in the area as Critical Habitat under the federal Endangered Species Act.

The draft EIR's alternatives analysis is woefully lacking. It does not comply with CEQA's requirement to analyze in an EIR a range of reasonable, feasible alternatives that meet the basic project objectives and substantially lessen significant impacts. Additional feasible alternatives to the Routine Maintenance Program and the Santa Ynez River Maintenance Program and mitigation measures exist, and are specified in this letter. They have been gleaned from past District CEQA documents. The conditions that rendered these alternatives "infeasible" or beyond flood control's scope have changed, rendering a new analysis of these options timely and necessary to identify the least damaging alternative that fulfills the underlying program purpose. Furthermore, the use of an improper CEQA baseline conveyance capacity on the Santa Ynez River affects the definition of "objectives" and this restricts consideration of less damaging alternatives that may feasibly meet the underlying purpose and substantially lessen environmental impacts.

The draft EIR does not support its conclusions with substantial evidence and represents an attempt to maintain the status quo maintenance operations and disregard previous alternative approaches and mitigation measures that may now be feasible due to changed circumstances. This document does not serve the state's purpose or fulfill CEQA's intent that projects be undertaken in the least damaging practical manner. Therefore, in order to comply with CEQA's letter and intent, additional analysis of alternatives is necessary, and the District should consider revising the proposed program to incorporate mitigating features and alternative, less damaging flood hazard reduction strategies.

Sincerely,

Brian Trautwein

Brian Trautwein
Environmental Analyst

cc (w/out attachments):

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- California Department of Fish and Game
- California Coastal Commission
- Interested Parties

(All attachments are available upon request.)

Appendix F

Responses to Comments

RESPONSES TO COMMENTS
SANTA BARBARA FLOOD CONTROL DISTRICT
ROUTINE MAINTENANCE PROGRAM
FINAL EIR
November 14, 2001

Commenting parties

- City of Santa Barbara
- City of Carpinteria
- Santa Barbara Audubon Society
- South Coast Watershed Alliance
- Santa Barbara Urban Creeks Council
- VJS Consulting Services
- Environmental Defense Center

CITY OF SANTA BARBARA

1-1. The Final EIR now contains a policy consistency analysis for the additional General Plan Elements of the City, including the Open Space, Conservation, Parks and Recreation, and Seismic Safety/Safety elements.

1-2. An explanation about why maintenance of the Lower Mission Creek Flood Control Project will not be part of the District's routine maintenance program is provided in Section 1.2. The maintenance procedures for the Lower Mission Creek Project will be determined through the final approval and permitting of that project, independent of the routine maintenance program. Once these procedures have been approved, they will be incorporated in the routine maintenance program as a separate, but related effort that is implemented in a parallel manner. In addition, the cumulative impact assessment presented in Section 9.1 specifically addresses potential cumulative impacts related to this future project.

1-3 Mitigation is not required for this impact (i.e., facilitating weed colonization) as it was determined to be less than significant (Section 5.3.2.3) for several reasons: (1) significant weed colonization has not been observed in the channel bottoms disturbed by the District during maintenance activities; (2) most of the maintenance activities involve spraying and brushing which do not facilitate weed colonization; (3) the District restores most channel areas affected by physical disturbances during maintenance, which includes weed control; and (4) one of the District's maintenance actions is the removal of weeds during brushing and spraying. The wording in the impact summary table has been changed from: "No feasible mitigation" to "Mitigation not required nor necessary."

1-4 The comment appears to be in error, as the impact ("Impact from Reduced Sediment Supply to Beaches") on page ES-26 includes the Mitigation Measure R-2, as recommended in the comment.

1-5 Mitigation Measure H-5, which requires use of biotechnical bank protection methods whenever feasible, has been modified to ensure that the use of bank protection will not adversely affect the stability of nearby banks, as recommended in the comment.

1-6 Clarification on the District's authorities within municipalities has been added to Section 1.1. In general, the District has authority to maintain flood control facilities that have been constructed under its direction or funding, that are part of a regional drainage project, or that are located within a District flood control easement. However, the District has authority to conduct maintenance on private property if it is necessary to protect public infrastructure, or otherwise protect life and property from imminent flooding hazards.

1-7 The District does not have authority to maintain drainage facilities on private property that were constructed by non-public entities, except to the extent that such action is needed to protect public infrastructure (such as roads, bridges, pipelines), or otherwise protect life and property from imminent flooding hazards.

1-8 Discing the channel bottom is an infrequent maintenance practice that is used primarily on San Pedro Creek, Lower Atascadero Creek, and on Bradley Canyon Channel in the North County, where the objective is to loosen the sediments accumulated on the channel bed so that future flood flows will transport them to downstream reaches with higher capacities.

1-9 Rattlesnake Canyon has been added to Table 2-1, although maintenance work on this reach has been very infrequent. The reach of Mission Creek included in the routine maintenance program has been corrected in Table 2-1, as requested.

1-10 Section 3.3.3 has been revised to indicate that a Coastal Consistency Determination from the Coastal Commission, pursuant to the CZMA, is required for all creeks in the routine maintenance program and the lower Santa Ynez River Maintenance Program for work both within the Coastal Zone, as well as for work outside the Coastal Zone that could affect coastal resources if there is a discharge of fill in "waters of the U.S." pursuant to Section 404 of the Clean Water Act

1-11 Jute and coconut fibers associated with bio-technical slope protection and erosion control blankets degrade in 3 to 4 years.

1-12 Comment noted. No revision to the EIR is required.

1-13 The District does not routinely remove vegetation from creek banks, and rarely removes large trees from the banks except for trees (primarily eucalyptus trees) that are in danger of falling into the creek. However, in the event that the District must remove a large native trees during maintenance, the District will replace trees removed with a diameter at breast height of 6 or more inches at a 10:1 ratio at or near the maintenance site, consistent with the mitigation practices of Planning and Development. Mitigation Measure B-1 has been modified in the Final EIR regarding tree replacement. 1-14 Herbicide application methods and materials are described in Section 2.3.2.

1-15 Each impact is described in a narrative form in Section 5 for each issue area, and a classification is provided in parentheses following the impact description, as requested in the comment.

1-16 The impacts referenced in the comment are presented from the 1991 Final EIR for the original maintenance program. These impacts are presented for information purposes only. A new impact assessment is provided in Section 5 that supercedes the older impact evaluation. Maintenance of lower Tecolotito and Carneros creeks downstream of Hollister Avenue are included in a previously approved, separate project – Goleta Slough Maintenance Dredging Project.

1-17 The term "mosaic" has been added to Mitigation Measure B-2, as recommended.

1-18 Comment noted. No revision to the EIR is required.

1-19 Comment noted.. The District generally concurs with the statement in the comment. The Final EIR has been revised to reflect information that the southwestern pond turtle has been sighted on four South Coast creeks: Atascadero, Sycamore, Tecolotito, and Arroyo Paredon Creeks.

1-20 Typographical error is corrected, as noted in the comment.

1-21 Mitigation Measure B-2 is designed to minimize the amount of vegetation removed from the channel bottom. Hence, monitoring the amount of wildlife use at the maintenance site over time would not provide appropriate mitigation monitoring observations. Instead, the District will monitor vegetation removal to ensure that it occurs within specified limits, as intended.

1-21a Mitigation Measure R-2 has been revised to require disposal of sediments removed from South Coast creeks on local beaches, to the extent feasible.

1-22 The City accurately points out that the correct "No Project" alternative is the continuation of the current routine maintenance program approved in 1992, and which continues today, until such time the Board of Directors of the District adopts an updated program. Hence, the "Current Maintenance" alternative in Section 7.2 has also been designated the "No Project" alternative. The previous "No Project" alternative in the Draft EIR has been renamed the "No Maintenance" alternative.

CEQA Guidelines Section 15126.6 (e) states, "*When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the existing plan, policy or operation into the future.*" Pursuant to this guidance, the No Project Alternative is properly defined in the Final EIR as the Current Maintenance program approved by the District in 1992.

Section 15126.6(e) further states that in an EIR " ... *projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.*" Pursuant to this guidance, impacts of the proposed updated routine maintenance program are compared to the current maintenance program (i.e., No Project Alternative) in Section 7 of the EIR. The analysis indicates that the proposed project would have less impact than the current program.

1-23. The comment correctly indicates that the primary purpose of exploring alternatives in the EIR is to avoid or lessen significant impacts associated with the proposed project. The EIR for the routine maintenance program represents an unusual circumstance for preparing an EIR because the project has been subject to a previous environmental analysis and has been implemented for 10 years. As such, the actual impacts of the program have been physically demonstrated and can be observed in the field. The objective of the proposed updated maintenance program is to avoid or lessen significant impacts associated with an ongoing project. The proposed program was specifically designed to achieve this objective, and represents the only feasible alternative available to the District that would reduce impacts of the current program, while meeting most, but not all, of the key maintenance objectives regarding flood control and hydraulics. The impacts of the proposed updated maintenance program are further reduced based on the EIR impact analyses, which identifies mitigation measures to specifically avoid or lessen impacts of the proposed project. Section 7 of the EIR has been revised to clarify these issues, and to identify the updated routine maintenance program with mitigation as a feasible alternative that reduces impact of the proposed project (the objective of which was to reduce impacts of the current program).

CITY OF CARPINTERIA

2-1 The Draft EIR has been revised to clearly state that the goal of the mitigation program is to replace vegetated habitats only at a 1:1 acreage replacement ratio.

2-2 As described in Section 2.3, the District typically plants willows and other native plants after grading or stabilizing an eroded slope that does not need structural bank protection. The action suggested in the comment is part of the District's routine maintenance practice because it stabilizes banks, creates habitat where none was present, and prevents invasion by non-native weeds.

2-3 The District will not implement habitat mitigation for areas that are devoid of vegetation as these areas do not provide significant habitat values for fish and wildlife. The District will provide habitat mitigation for stands of noxious, aggressive weeds such as giant reed. However, the mitigation for removing such stands will be stabilizing the affected area with native vegetation rather than creating new habitat elsewhere. The District will provide habitat restoration for impacts to vegetated habitat associated with bank stabilization as described in Section 4.5.6. Temporary impacts to vegetated habitat associated with new access ramps will be mitigated as described in Section 4.5.3 and H-8.

It should be noted that Mitigation Measure H-5 requires the District to utilize bio-technical bank protection that includes native plants except in rare cases where hard bank protection is required. Bio-technical bank protection with native plants would be used even on eroding slopes that are devoid of habitat. Hence, the concern expressed in the comment would be addressed.

2-4 Section 2.4.1 provides an explanation on how debris basins constructed after specific wildfires on the South Coast continue to provide necessary flood benefits.

2-5 The text has been revised to be consistent with Table 5-2.

2-6 Comment noted. Potential modification of the outlet to Gobernador Debris Basin is a separate project being proposed by the City of Carpinteria. The District is currently evaluating this proposal, along with other proposals to remove impediments to steelhead migration along the South Coast. This type of proposal is not considered an element of the routine maintenance program.

SANTA BARBARA AUDUBON SOCIETY

3-1 The Board of Directors of the Flood Control District determined in Item 6.3 of the CEQA Findings for the 1991 Routine Maintenance Program that revisions to the County Comprehensive Plan and Local Coastal Plan, as proposed in the 1991 Final EIR, were infeasible. Instead, the Board adopted the five Riparian Corridor Management Policy Statements (see Section 8.14 of the Final EIR) to provide guidance for environmental protection under the maintenance program. These policy statements remain unchanged under the proposed updated program. Revising the County's policies regarding riparian resources and flood control is still considered infeasible as part of the proposed project due to the extensive planning effort involved, the effect such revisions would have on land use planning and permitting throughout the county, and the need to conduct a County-wide environmental review of how such changes may affect other resources and socioeconomic conditions. In addition, revising these policies would require approval by the California Coastal Commission. The District does not have the authority to initiate revisions to the comprehensive plan and ordinance. This effort more appropriately rests with P&D and the Board of Supervisors. The District would participate in any planning effort to review and revise such policies. However, it is not necessary for the District to initiate a County-wide policy planning effort to ensure that impacts to sensitive environmental resources are minimized under the routine maintenance program. The District has focused on specific tangible actions that it can incorporate into its maintenance practices to minimize impacts in the most practical manner possible.

The District recognizes that incorporating riparian resource protection policies into the Comprehensive Plan, Community/Area Plans, and Local Coastal Plan could promote land use planning and permitting actions that reduce the need for flood control maintenance and its associated impacts to riparian resources. Hence, the District staff will ask its Board of Directors for direction on how it can best participate in developing such policies with County Planning and Development in the future, as well as direction on whether to incorporate all or part of the "Policy Statement for Riparian Corridor Management," adopted by the FCD Board of Directors in 1991, into the County's Comprehensive Plan and Local Coastal Plan.

3-2 As suggested in the comment, the District abandons and restores access ramps that are no longer needed to provide access to drainages. Currently, there are no ramps that the District has deemed unnecessary and suitable for removal. Under the proposed program, the District will provide habitat compensation for all new ramps that occur on vegetated banks, and will restore areas near access ramps that are temporarily disturbed during construction. Hence, impacts due to ramp construction are considered less than significant. However, to further reduce ramp impacts, Mitigation Measure H-8 in the Final EIR has been modified to require the District to seed access ramps that are used infrequently to prevent infestations of noxious weeds, and to minimize the width of new ramps, to the extent feasible.

3-3 Section 2.6.4 contains an explanation on why the District only provides compensatory habitat mitigation for the initial impact of a maintenance activity at a specific location, not for each maintenance event at the same location. An explanation for this position as it applies to the Santa Ynez River Maintenance Program is already provided in Section 3.3.5. In essence, if the District replaces the habitat functions that are removed by a maintenance action (e.g., channel desilting in a reach with in-stream riparian habitat), then there is no justification or requirement under CEQA to provide additional mitigation, which would represent overcompensation for impacts. CEQA only requires that the mitigation be commensurate with the impact. As a practical matter, it would not be economically feasible, and possibly logistically feasible, to provide compensatory mitigation repeatedly for maintenance impacts over the years at the same work location.

Nevertheless, the District recognizes the concerns about the impacts of periodic and repeated maintenance activities. As such, the District will modify the habitat restoration element of the program as follows. Habitat mitigation for maintenance activities at a specific area will only occur once during the next ten years. At the end of the ten year period, habitat mitigation would be required for maintenance work at all locations, even those areas where mitigation was previously completed. In essence, the District would "reset the clock" on habitat mitigation requirements after ten years. Consistent with this approach, all habitat mitigation completed over the past ten years under the current maintenance program and prior to the adoption of the updated routine maintenance program will not be considered for maintenance work under the updated program. Hence, no mitigation credits will be carried forward from the current program. These actions will increase the level of habitat mitigation over time, beyond the "one-time mitigation" approach.

3-4 The comment requests that mitigation be provided for each maintenance event that causes the temporary loss of bio-filtering due to removal of emergent wetlands from the wetted channel bed. The District has determined that the cumulative effects of maintenance activities in the channel bed would be significant and unmitigable, even though most of the maintenance work does not result in removal of channel bottom wetlands. Suitable mitigation to avoid this impact is not feasible, as it would require either avoidance of work in the channel that contains, or creation of new channel bottom wetlands. Both actions would substantially impede, or counteract, the objectives of the maintenance program. Hence, these measures are considered infeasible, and the resultant impact on bio-filtration is considered Class I. Nevertheless, the District has identified mitigation measures to reduce the magnitude of the reduction in bio-filtration (Nos. B-1, B-2, and W-3).

3-5 Woody vegetation rooted in a channel bed provides only minor to modest bio-filtration benefits. Bio-filtration occurs by various physical and biological processes. The most effective processes include degradation of bacteria by exposure to sunlight (UV) and by microbes in the water and soil, and detritus and plant surfaces; and removal of pollutants by settling into the sediment. Effective bio-filtration occurs when there is a high level of microbial activity, exposure to sunlight, extensive plant and root surface areas in the water, and warm temperatures. Woody stems harbor lower densities of microbes and macrophages than green herbaceous stems due to the lower surface area to circumference ratio, and lower level of biological activity occurring on the surface of bark (dead tissues) compared to a live stem. However, woody stems are effective in slowing water velocities and trapping large debris, which in turn, facilitate sediment deposition including pollutants within the sediments. Section 5.2.2.3 of the Final EIR has been revised to acknowledge this effect – that is, removal of silt-trapping vegetation reduces the potential for bio-filtration or physical deposition of pollutants at the work site, and allows pollutants to be conveyed to a downstream location. This effect reinforces the categorization of the bio-filtration impact as significant.

3-6 Comment noted. No response or revision to the EIR is necessary.

3-7 This recommended mitigation measure is not considered necessary or required under CEQA, nor does the District consider it economically and logistically feasible. See Response to Item No. 3-3.

3-8 Removal of trees from creek banks is not included in the Routine Maintenance Program, except where individual large trees are about to fall and create an obstruction to flow. Hence, no specific mitigation measure is required, as maintaining the canopy cover over creeks is part of the ongoing and proposed routine maintenance program.

3-9 Mitigation Measure B-1 in the Final EIR has been modified to require the District to seek feasible opportunities for habitat restoration in the buffer zone on the tops of banks and landward of the creek that could provide a bio-filtering benefit for overland stormwater runoff.

3-10 Mitigation Measure H-5 requires that the District use bio-technical bank protection before considering hard bank protection. In essence, bio-technical methods must be used except in unusual circumstances. As such, the concern expressed in the comment is already addressed. The comment also requests that all hard-bank protection projects be excluded from the routine maintenance program. The District has modified the proposed routine maintenance program (Section 2.3.4) to exclude the installation of hard bank protection under the maintenance program if the total combined linear distance of the protection exceeds 150 feet for a single project. Such projects will be considered capital improvement projects and subject to County environmental review and permitting requirements.

The District has also added new mitigation measure, Mitigation Measure H-9 Landowners Information Regarding Bank Protection, to the Final EIR to encourage use of bio-technical bank protection by landowners working on private property independent of the District's maintenance program. Under this measure, the District will provide information concerning alternative bank protection methods.

3-11 When replacing damaged bank protection, the District must adhere to the requirements of Mitigation Measure H-5 that requires use of bio-technical methods first. The Corps' Hydrogeomorphic Method (HGM) is not a tool that can be used to determine the appropriate bank protection method. It can be used to determine impacts of installing hard bank protection versus bio-technical bank protection. However, the difference in habitat impacts between the two types of methods (one with vegetation and one without vegetation) is self evident, and HGM is not needed.

3-12 The District considers channel downcutting a routine maintenance problem that needs correction, similar to bridges plugged with storm debris, eroding banks, and channels filled with obstructive sediments. The most appropriate method to address channel headcutting in constrained urban creeks where the channel cannot be widened to dissipate flows is to use a grade stabilizer. Hence, construction of grade stabilizers to address channel headcutting is included in the routine maintenance program. It would be considered a separate capital project if the stabilizer was part of a larger capital improvement, or if the cost of the stabilizer was too high for the maintenance budget. Mitigation Measures H-1 and H-7 require that the District consider use of ungrouted rip-rap first and that a vertical drop that creates a fish passage barrier be avoided.

3-13 Mitigation Measures H-1 and H-7 apply to the repair of existing grade stabilizers, requiring that the District consider use of ungrouted rip-rap first and that a vertical drop be avoided to allow fish passage. HGM is not a suitable tool for assessing the hydraulic impacts of a stabilizer because it is a method to assess changes in <u>habitat</u>, not hydraulic conditions.

3-14 The EIR identifies the impact described in the comment as a significant, unmitigable impact (Class I) to aquatic habitat and organisms. Four mitigation measures were identified to lessen this impact (H-1, W-3, B-1, and B-2). An additional measure, B-7 Post-Maintenance Channel Bed Treatment, has been added to the EIR which requires the District to roughen channels affected by shaping and desilting, and to recreate any pools removed, after certain maintenance work is completed, as feasible. This measure will further reduce the magnitude of the impact to aquatic habitats, but which will still remain significant.

3-15 The recommended mitigation measure has merit in providing off-site mitigation for bio-filtering effects. However, the planning and construction of County stormwater facilities are addressed through Project Clean Water, which has responsibility for addressing the requirements of the Municipal Separate Storm Sewer Systems Permit for urbanized portions of the County. Project Clean Water is currently evaluating locations for stormwater treatment facilities to be installed in the next several years. These facilities will include bio-swales and filters for storm drain inlets to be located outside of drainages. Hence, the recommended mitigation measure is within the authority of another entity, and is currently being implemented. Mitigation Measure W-7, Reporting Water Quality Incidents, requires the training of maintenance crews to assist Project Clean Water in identifying suitable locations for treatment facilities, and in identifying pollution "hot spots" based on the District's extensive field observations along the County's creeks.

3-16 Modified Mitigation Measure H-8 (Access Ramps) requires that the District seed access ramps that are used infrequently to prevent infestations of noxious weeds. Mitigation Measure H-8 also requires that the District stabilize ramps with vegetation to prevent erosion. These measures will address the concerns noted in the comment.

3-17 Mitigation Measure B-1 has been revised to include the potential use of locally rare or otherwise sensitive plant species in habitat restoration projects to increase the diversity of riparian species along affected creeks.

3-18 The District's restoration plan (Section 2.6) includes post planting weeding. See Response to Item 1-3.

SOUTH COAST WATERSHED ALLIANCE

4-1 The District believes that the proposed updated routine maintenance program and the Lower Santa Ynez River maintenance program, coupled with the mitigation measures identified in the EIR, represent the least environmentally damaging approach to meeting the project objectives.

4-2 The language in Mitigation Measure H-5 (Bank Protection Methods) is clear – the District will use bio-technical methods first unless such methods are not suitable for the site-specific conditions or objectives. The measure lists six methods that the District must consider in sequence before even considering hard bank protection. The District believes that the language of the measure "reflects a commitment" (as recommended in the comment) to use of bio-technical methods. The comment acknowledges that there will be situations in which these methods are not appropriate. The Annual Plan will provide a rationale for the selection of all proposed bank protection for eroding banks, and will be available for public comment.

4-3 The comment states that the role of HGM is to ensure that the maintenance program is implemented in the least environmentally damaging manner. However, the phrase from the EIR quoted in the comment was used in reference to principles and analytic tools related to channel stability and geomorphology, not HGM in particular. The use of these tools when conducting engineering analyses for maintenance planning will "increase efficiency and effectiveness" of maintenance because they will help the District work with natural hydraulic processes, rather than contrary to them. HGM is a method to assess the impacts of actions in riverine systems in order to determine appropriate mitigation requirements, taking into consideration various physical and biological factors. It is not a tool for determining the need for, and extent of, maintenance. Nor is it a tool to identify the appropriate method of maintenance.

The District has committed to using the concept and principles of geomorphology and channel stability (historically originated from Luna Leopold and more recently articulated by practitioners such as Ann Riley) to make better decisions about when, where, and how to perform channel maintenance. This commitment is one of the key features of the updated Restoration Plan, and a major change in direction in the program.

The District has evaluated HGM as a practical tool in developing habitat compensation mitigation for routine maintenance, and determined that it is not an appropriate tool for this application, as described in Section 4.6 of the EIR. However, the District has committed to "consider" habitat functions when developing certain restoration plans. The term "consider" has been changed to "address" in Section 4.6 to dispel any concerns about the District's commitment. Section 4.6 of the EIR has also been modified to indicate the specific restoration projects in which habitat functions would be addressed when determining the nature, amount, and location of habitat restoration. Habitat functions will not be formally considered in one type of restoration effort – the restoration of areas temporarily disturbed during the installation of grade stabilizers and bank protection, or areas disturbed for temporary stockpiling. Restoration of these areas would consist of replacing the affected habitat at the affected site, and therefore, no habitat function analysis is required.

4-4 The EIR contains a summary of data on the concentration of residual glyphosate (the active ingredient in Rodeo) along numerous South Coast creeks, where the District conducted herbicide spraying. The available data indicate that the District's contribution to regional water quality problems with herbicide loading in the creeks is not considerable. The conclusion that herbicide use is significant but mitigable was reached in the 1991 Final EIR and again in this EIR because there is no substantial evidence that the District's herbicide use is significantly affecting public health, water quality, or aquatic species.

4-5 The updated restoration plan (Section 4.5.2) includes the sequencing of habitat restoration called for in the comment: onsite near impact area, onsite on the same drainage, and off site at Los Carneros Mitigation Bank (LCMB). Use of the latter would only occur if onsite restoration were not feasible, as recommended in the comment. The District believes that limiting the use of the LCMB to maintenance projects in the Goleta Valley severely hinders its ability to mitigate for South Coast maintenance activities, and would not be practicable.

Mitigation Measure B-1 in the Final EIR has been modified to require the District to seek opportunities for habitat restoration in the buffer zone on the tops of banks and landward of the creek, as recommended in the comment.

4-6 See Response to Comment No. 1-23.

SANTA BARBARA URBAN CREEKS COUNCIL

5-1 The primary objective of proposing an updated routine maintenance program was to improve the environmental protection measures developed in 1991 for the program, taking into account the recent efforts by local government agencies and environmental groups to improve the conditions of local creeks, particularly on the South Coast. Hence, the District believes that its updated program is complementary to efforts to enhance creeks.

5-2 Mitigation Measure H-1 will require the District to consider the bankful capacity of a reach where maintenance is planned in order to take advantage of natural hydraulic conditions to transport sediments efficiently.

5-3 Mitigation Measure H-5 requires that the District use bio-technical bank protection before considering hard bank protection. In essence, bio-technical methods must be used except in unusual circumstances. As such, the concern expressed in the comment is already addressed.

5-4 The District has evaluated HGM as a practical tool in developing habitat compensation mitigation for routine maintenance, and determined that it is not an appropriate tools for this application, as described in Section 4.6 of the EIR. However, the District has committed to address habitat functions when developing restoration plans.

5-5 The updated restoration plan (Section 4.5.2) includes the sequencing of habitat restoration called for in the comment: onsite near impact area, onsite on the same drainage, and off site at Los Carneros Mitigation Bank. Use of the latter would only occur if onsite restoration were not feasible. The justification for this determination will be documented in the Annual Plan.

5-6 See Response to Comment No. 3-3.

VJS CONSULTING SERVICES

6-1 For the purposes of avoiding emergent wetlands, these types of wetland are defined in the EIR "...as areas dominated by perennial wetland herbs..." This definition is appropriate and accurate. The text referred to in the comment describes areas to be avoided during mowing, not to be cleared, as indicated in the comment.

6-2 All surveys for red-legged frogs are conducted in accordance with USFWS requirements applied to the District through a program Biological Opinion for the routine maintenance program.

6-3 The text in the EIR has been modified to indicate that southwestern pond turtles could occur at locations along the project reach other than where they have been observed previously.

6-4 Comment noted.

6-5 The text in Section 2.2 has been revised to remain consistent with the rest of the EIR. The phrase "public infrastructure and other public facilities" has been modified to read "public property and infrastructure."

6-6 The channel maintenance program along the lower Santa Ynez River provides protection to both public property and infrastructure (Floradale Avenue Bridge, Lompoc Penitentiary, VAFB) and private property (mostly agricultural lands). Unlike other areas of the County, the private lands in the valley are provided protection, albeit a modest level, under the program because agricultural production in the valley provides an important regional economic benefit.

6-7 The suggested action (purchase of 700 acres of farmland) is economically infeasible for the District to implement. Section 7.3 provides information on land costs as well as the District revenues in the Lompoc Valley Flood Zone.

ENVIRONMENTAL DEFENSE CENTER

7-1 See Response to Comment No. 1-23

7-2 See Response to Comment No. 1-23

7-3 The comment states that the District failed to include the "Environmentally Superior Alternative" identified in the 1991 Final EIR for the routine maintenance program. That alternative consisted of the Standard Maintenance Practices (as modified by the IPAC), Annual Maintenance Plan process, and revisions to the County Comprehensive Plan, Coastal Plan, and Zoning Ordinance. The Board of Directors approved this alternative in 1991, except that the policy revision element was deemed infeasible (see 1991 CEQA Findings). Instead, the Board of Directors adopted Riparian Corridor Policy Statements. The District is currently implementing the 1991 Environmentally Superior Alternative, and as such, it represents the "Current Maintenance" alternative analyzed in Section 7. Hence, this alternative is included in the EIR, contrary to the statements made in the comment. The policy revisions proposed in 1991 are still considered infeasible, as noted in Response to Comments No. 3-1.

7-4 The FCD has provided new, more accurate titles to the alternatives to the proposed Santa Ynez River Maintenance Program, and added a new alternative. The alternatives addressed in Section 7.3 include the following:

1. No Project Alternative
2. Minimum Mowing Alternative - 8 acres of mowing with a goal of a 50-foot wide swath
3. Minor Mowing Alternative - 12 acres of mowing with a goal of a 75-foot wide swath
4. Original Mowing Alternative - 125 acres of mowing with a 300-foot wide mowed zone

The proposed project is retitled in the alternatives sections as: "Moderate Mowing Alternative - 16 acres of mowing with a goal of a 100-foot wide swath"

The text in Section 7.3 has been modified to indicate that the Minimum and Minor Mowing Alternatives are feasible (based on costs, technology, and logistics), but do not meet the project objectives because it does not provide the level of flood protection deemed necessary and reasonable by the District. To adopt one of these alternatives, the Board of Directors must determine that a lesser amount of flood protection (than is currently provided) is acceptable. Section 7.3 provides the results of hydraulic modeling for these alternatives.

7-5 The objective for the Lower Santa Ynez River Maintenance Program was developed based on the District's experience with past mowing events and the level of flood protection provided. The District is attempting to balance the need to reduce flood hazards to a reasonable level, while minimizing environmental impacts. The proposed periodic 100-foot wide mowing is substantially less than the historic 300-foot wide clearing conducted by the District. The 100-foot wide mowed zone has proven highly effective in the past five years. The District has estimated that the mowing facilitated the conveyance of 20,000- 30,000 cfs near Floradale Avenue Bridge in five flood events in 1993, 1995 (twice), 1998, and 2001 with minimal flood damage. It is the District's opinion that a narrower clearing would have caused flooding during those events. The District developed the program objective based on the past success of a 100-foot wide mowed swath. The use of a specific mowed width in the program objective does not preclude the District from evaluating a narrower width alternative in the EIR in Section 7. The Narrower Clearing Alternative is a reasonable less damaging alternative whose impacts are disclosed, and which can be adopted if so desired by the Board of Directors.

It should be noted that the proposed maintenance program along the lower Santa Ynez River is considered a continuation of a project implemented in 1997/1998 because the same methods will be used and the same areas will be affected. In addition, the riparian habitat impacts of that project have been mitigated; hence, there is no need to develop new habitat mitigation. The District believes that it is prudent to propose a program that has proven benefits, has been implemented successfully, and has already been mitigated.

7-6 The Santa Ynez River Maintenance Program objective has been revised (Section 3.3.1) to reflect the underlying purpose of the project, and to avoid the perception that the objective is too narrowly defined for a meaningful alternatives analysis: "The objective of the program is to facilitate conveyance of flood flows in the least environmentally damaging, most feasible manner to prevent overbank flooding and bank erosion caused by restricted channel capacity and obstructive debris and vegetation in the western Lompoc Valley, providing a similar level of flood protection achieved over the period 1995-2001." Using this objective, the District's proposed project still remains the 100-foot wide swath because it has been shown to be effective in meeting the basic objective stated above; it has been implemented successfully with no unanticipated impacts; it would affect the same area as the previous project, and thereby avoid new impact areas or issues; and the riparian habitat mitigation for the proposed maintenance has already been implemented, thereby increasing feasibility of the proposed project compared to other projects where new habitat mitigation may need to be developed.

7-7 The District agrees that the Narrower Cleared Zone Alternative (Now entitled: Minimum Mowing Alternative – 8 acres of mowing with a goal of a 50-foot wide swath) would achieve most, but not all of the program objectives. However, this alternative would not meet the project objectives and is considered undesirable because it would result in more flood damage than the proposed project. More importantly, the proposed project would not result in any unmitigated significant impacts. Hence, under CEQA there is no requirement to adopt the Narrower Cleared Zone Alternative as it does not avoid or lessen any significant impacts of the proposed project, which can be mitigated to less than significant levels.

7-8 The 1992 Final EIR for the Santa Ynez River Channel Maintenance Project included five alternatives, including the three noted in the comment: Full Length Levee, Partial Levee and Clearing, and Set-Back Levee. These alternatives were considered infeasible by the District in 1992 and remain so today for the following reasons: (1) the capital and maintenance costs of these structural alternatives are prohibitive to the District based on its funding authority; and (2) the availability of land for levees is highly uncertain. Equally important, all three alternatives would result in: (1) greater impacts to riparian habitat that could not be feasibly mitigated; and (2) significant unmitigable impacts that are avoided by the proposed project, including loss of prime farmlands and potential destruction of willow flycatcher habitat. While these alternatives may meet the basic project objectives, they are clearly infeasible and environmentally more damaging than the proposed project and the Narrower Cleared Zone Alternative. Information on these alternatives has been included in Section 7.3 of the Final EIR.

7-9 The comment confuses two concepts under CEQA: project objectives and environmental baseline conditions. The objective for the Lower Santa Ynez River Maintenance Program is to provide conveyance similar to that achieved under a 100-foot wide open zone (based on a maximum of 16 mowing). This conveyance capacity has been estimated by conventional hydraulic models in the EIR, and it has been observed under real-life circumstances in 1998. The comment states that the channel capacity has been reduced since 1998, and that the current conditions along the river should be considered the target capacity. The fact that the river channel vegetation may have changed since the last mowing event in 1998 does not make the conveyance objective invalid. Nor is it improper to target the 1998 conveyance levels in an EIR that is issued in 2001. It is proper and reasonable to target a channel conveyance that meets the District's needs to provide reasonable flood protection while minimizing environmental impacts. Channel capacity is a dynamic condition, and restricting the target objectives to the year that the EIR is being considered is illogical.

Under Section 15125 of the CEQA Guidelines, an EIR must contain a description of the environmental setting or baseline to be used in assessing impacts of the proposed action. The environmental setting in an EIR represents the: "physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally [*emphasis added*] constitute the baseline physical conditions by which a lead agency determines whether an impact is significant." (Section 15125). The environmental baseline used in the impact assessment in Section 6 represents the conditions at the time that the EIR was prepared (late 2000 and early 2001). The EIR describes the current channel capacity at the time the EIR was prepared, noting that current channel conditions are the result of the 1998 mowing events and the flood flows of 1998. The description of the current channel capacity is not out of date or artificial, as implied in the comment. Hence, a proper baseline condition is used in the impact assessment.

The comment fails to recognize that natural flood events will maintain channel capacity in the river to a greater degree than the District's proposed project. Hence, if the river clears a wide swath that provides adequate capacity, no mowing is required. Due to flood events in March 2001, the channel capacity along the river has been increased.

In summary, it is proper under CEQA to target a channel conveyance capacity observed in 1998, while conducting an environmental impact analysis using current (i.e., 2000-2001) environmental baseline conditions. Use of this baseline condition will result in worst-case impact predictions compared to using 1998 conditions as the baseline.

7-10 The Draft EIR presents one feasible, environmentally less damaging alternative to the proposed Lower Santa Ynez River Maintenance Program – the Narrower Cleared Zone Alternative. However, in response to the comment and discussions with EDC staff, the District has included two feasible, environmentally less damaging alternatives in the Final EIR: Minimum Mowing Alternative (8 acres of mowing with a goal of a 50-foot wide swath) and Minor Mowing Alternative (12 acres of mowing with a goal of a 75-foot wide swath).

7-11 In the 1992 Final EIR, the District determined that the Full Length Levee, Set-Back Levee, and Partial Levee and Clearing alternatives were infeasible for the reasons noted in the comment. The District still believes that these alternatives are infeasible because the costs (as shown in the 1992 Final EIR) are prohibitive. In addition, landowners in the valley have not indicated a willingness to provide land for levees without cost. Section 7.3 provides information on land costs and the District's revenues in the Lompoc Valley. More importantly, these alternatives do not need to be considered further because of three key reasons. One, they would result in greater impacts to farmlands and riparian habitat than the proposed project, and as such, are not acceptable under CEQA. Two, the proposed project would not result in any significant, unmitigable impact, and as such, there is no obligation to seek other alternatives (and certainly not alternatives with greater impacts). Three, based on the information provided in Section 7.3 regarding land costs and District revenues in the Lompoc Valley, they are economically infeasible.

7-12 The comment incorrectly states that the policy and ordinance revisions of the Environmental Superior Alternative in the 1991 EIR were approved. The proposed revisions were determined to be infeasible by the Board of Directors in the CEQA Findings. They are still considered infeasible as part of this project, as well as unnecessary, as described in Response to Comments No. 1-3.

7-13 The comment states that "many" of the components of the original Environmentally Superior Alternative in the 1991 Final EIR were not implemented. The key element of the alternative that was not approved by the Board of Directors was the revisions to the County Comprehensive Plan, Coastal Plan, and Zoning Ordinance. The Board of Directors determined that these revisions were infeasible and, as an alternative approach, adopted District-specific policies for the maintenance program. In addition, the District has not identified a reasonable opportunity to construct log weirs. Log weirs are essentially check structures which were not authorized under the previous (original) PEIR. Log weirs may be feasible as biotechnical check structures as part of the currently proposed program.

Revising the County's policies regarding riparian resources and flood control is still considered infeasible under the proposed project due to the extensive planning effort involved, the effect such revisions would have on land use planning and permitting throughout the county, and the need to conduct a County-wide environmental review of how such changes may affect other resources and socioeconomic conditions. The District does not have the authority to initiate revisions to the comprehensive plan and ordinance. This effort more appropriately rests with P&D and the Board of Supervisors. The District would participate in any planning effort to review and revise such policies. However, it is not necessary for the District to initiate a County-wide policy planning effort to ensure that impacts to sensitive environmental resources are minimized under the routine maintenance program. The District has focused on specific tangible actions that it can incorporate into its maintenance practices to minimize impacts in the most practical manner possible.

Nevertheless, the District recognizes that incorporating riparian resource protection policies into the Comprehensive Plan, Community/Area Plans, and Local Coastal Plan could promote land use planning and permitting actions that reduce the need for flood control maintenance and its associated impacts to riparian resources. Hence, the District staff will ask its Board of Directors for direction on how it can best participate in developing such policies with County Planning and Development in the future, as well as direction on whether to incorporate all or part of the "Policy Statement for Riparian Corridor Management," adopted by the FCD Board of Directors in 1991, into the County's Comprehensive Plan and Coastal Plan.

7-14 The District considers the proposed channel maintenance along the lower Santa Ynez River to be part of the routine maintenance program for several reasons. One, it is a modest project affecting only 16 acres maximum every 3 to 5 years. Two, habitat mitigation for the project has been implemented, hence, the mowing can proceed without delay upon approval. Three, the objective and nature of the maintenance are identical to most other maintenance projects in the County – maintain channel capacity to reduce flood hazards. Four, the project does not include any structural components (bank protection or grade stabilizers), and is properly characterized as maintenance.

The District does not believe that the environmental review of the Santa Ynez River maintenance is "muddled" because it is included in the EIR with the routine maintenance activities. In fact, inclusion of the Santa Ynez River maintenance with the entire program provides the public with a broader context about the District's work. To avoid "muddling" the District placed the Santa Ynez River analyses in separate chapters of the EIR.

7-15 The language in Mitigation Measure H-5 (Bank Protection Methods) is clear – the District will use bio-technical methods first unless such methods are not suitable for the site-specific conditions or objectives. The measure lists six methods that the District must consider in sequence before even considering hard bank protection. The District believes that the language of the measure provides a reasonable assurance that bio-technical methods will be used as feasible. The Annual Plan will provide a rationale for the selection of all proposed bank protection for eroding banks, and will be available for public comment.

It should also be noted that the District has added new mitigation measure, Mitigation Measure H-9 Landowner Information Regarding Bank Protection, to the Final EIR to encourage use of bio-technical bank protection by landowners working on private property independent of the District's maintenance program. Under this measure, the District will provide education and technical assistance concerning alternative bank protection methods.

7-16 CEQA.Section 4.1 includes a brief description of emergency Flood Control activities. Please note that emergency Flood Control activities are not analyzed as part of this PEIR as they represent unpredictable, exempt actions under CEQA.

7-17 Comment noted. The text of the EIR has been revised to reflect undocumented sightings of this species. This information does not alter the conclusions in the EIR.

7-18 Comment noted. The text of the EIR has been revised to reflect undocumented sightings of this species. This information does not alter the conclusions in the EIR.

7-19 As noted in Response to Comment No. 7-9, the EIR describes the current channel capacity at the time the EIR was prepared, noting that current channel conditions are based the effects of both the 1998 mowing events and the flood flows of 1998 and 2001. Although vegetation in the previously mowed areas has grown since 1998, many new areas have been cleared due to flood flows in March 2001, as noted in the EIR.

7-20 See Response to Comment No. 7-9. The comment fails to recognize that the maintenance program along the river is designed to respond to changing channel capacity. The fact that the channel capacity in 2001 may be different from 1998 does not negate the need for the project, nor justify the project. Maintenance mowing is required only when channel capacity is reduced due to an accumulation of dense vegetation. Alternatives to the proposed maintenance program must also be designed to respond to changing channel conditions. If flood flows maintain channel capacity, then no maintenance is required under the proposed project and under any other alternatives to the project.

7-21 The proposed impact threshold is not considered appropriate as it considers all conflicts with plans to represent significant impacts. Conflicts with adopted plans may or may not reflect physical impacts to the environment, which may or may not represent a significant impact, defined in the CEQA Guidelines as "*...a substantial, or potentially substantial,* of a 200 to 300-foot wide swath along the project reach, affecting 117 acres of riparian habitat. No riparian habitat mitigation was included in the 1992 project.

The proposed Santa Ynez River Maintenance Program involves mowing up to 16 acres of riparian habitat, and includes already-completed riparian habitat mitigation approved by the California Department of Fish and Game. Vandenberg Air Force Base (VAFB) prepared an Environmental Assessment for the project when it was implemented on a one-time basis in 1998 and concluded that it would have no significant impacts. The current EIR reaches the same conclusion. There is a substantial difference between the 1992 project and the current project that supports the conclusion in the EIR that the proposed project would not have any significant impacts.

7-25 The District does not agree that installation of hard bank protection under the proposed routine maintenance program is a significant, unmitigable impact. The District routinely stabilizes eroding banks under the program using vegetation. Rarely does the District utilize hard bank methods. Under the proposed updated maintenance program, the use of hard bank protection will decrease further because Mitigation Measure H-5 requires use of bio-technical methods in most situations. Furthermore, impacts to habitat due to hard bank protection would be fully mitigated by restoration of habitat along the affected drainage, focusing on the replacement of affected habitat functions, with a minimum 2:1 replacement ratio. In addition, the installation of hard bank protection over 150 feet in length would be considered a separate project, not within the routine maintenance program, and therefore, subject to a new environmental review. Finally, the District shall provide technical assistance to landowners to encourage the use of bio-technical bank stabilization under Mitigation Measure H-9. For these reasons, the District considers this impact to be significant, but mitigable (Class II).

7-26 Comment noted. The District and commenter agree that the impact of certain maintenance activities on aquatic habitat is considered significant and not fully mitigable. Although the District has focused on the cumulative effects of this impact in making its determination of significance, it does not relieve the District of implementing feasible mitigation to reduce the magnitude of the impact, as implied in the comment. The District will implement Mitigation Measures B-1, B-2, B-3, B-7, and W-3 for all activities causing this impact, and will document the impacts in each Annual Plan with the application of the mitigation measures. The EIR has been revised to indicate that impacts to aquatic habitat may also be considered significant on individual creeks, as well as on a cumulative level, if the amount of channel bed disturbance is great. This modification is consistent with the comment.

7-27 The District disagrees with the comment that the effects of vegetation removal on water temperatures were understated. Most of the aquatic habitats where steelhead rear and spawn on the South Coast involve pools or slow moving runs. These areas do not have instream vegetation due to the depth of water and flowing condition of the water. The District does not need to brush or spray these areas, as there is no obstructive vegetation on the channel bottom. Any shade created at these locations where steelhead persist in the summer is provided by large canopy trees rooted on the banks and uplands. The District does not remove these trees. Hence, the potential effect of brushing and spraying on water temperatures for steelhead spawning and rearing is considered less than significant. It should be noted that the 1991 Final EIR assumed that the District would be routinely removing trees from banks. That practice is not a part of the current and updated maintenance program and was incorrectly included in the 1991 Final EIR.

7-28 The EIR provides six specific reasons why the increased sedimentation and turbidity of the routine maintenance program is not considered a significant impact. The comment provides no substantial evidence that the analysis in the EIR is incorrect. The EIR contains a new and independent impact assessment that supercedes the 1991 EIR because it contains new and better information to evaluate impacts. The 1991 EIR speculated on the nature and magnitude of the maintenance program. In contrast, the impact assessment in the current EIR is based on observation of actual impacts by the District over the past 10 years and documented in 10 Annual Plans and CEQA Addenda. In addition, the impacts of the program were independently assessed by the EIR consultants who examined various maintained creeks, drainages, and basins in order to observe the actual impacts, rather than to predict them. No more convincing substantial evidence is available than real life observations over ten years.

7-29 The comment that the EIR states that only the red-legged frog would be affected by the maintenance program is incorrect. The EIR indicates that at least eight sensitive fish and wildlife species could be affected by the program activities, but notes that the District has only encountered one listed species at work sites to date: red-legged frog, and one special interest species: western pond turtle. Mitigation Measures B-5 and B-6 apply to all sensitive species that may be encountered.

The District has successfully relocated the red-legged frog on Solomon Creek, Green Canyon, and Upper Green Canyon, with the approval of US Fish and Wildlife Service under a programmatic Biological Opinion. The District disagrees with the comment that relocation is unreasonable and unsuccessful based on its experience. For the red-legged frog, the District must ensure that the relocated individuals are either returned to their original location, if suitable conditions remain, or are placed at another suitable location where they will be protected. The District conducts follow-up surveys to determine if the temporary relocation is successful. It should be noted that most of the relocation efforts have been to temporarily move animals from near the work site during the maintenance work, not to permanently relocate them

Finally, any effect on occupied habitat of a state or federally listed species due to maintenance activities are governed by the requirements imposed on the District by the California Department of Fish and Game, US Fish and Wildlife Service, and National Marine Fisheries Service. Hence, all actions taken to protect these species have been approved or mandated by these agencies.

It should be noted that the District has modified Mitigation Measure B-5 in the Final EIR to include assistance by endangered species experts in relocation efforts to ensure the effectiveness of relocation of endangered species.

7-30 Contrary to the comment, the District has considered scientific information about the effects of glyphosate on aquatic organisms (including steelhead trout), including the attachments to the comment. The impact assessment in the EIR refers to the body of scientific data that concluded that significant impacts to aquatic organisms can be avoided by the proper use of EPA-approved aquatic system herbicide such as Rodeo. Significant impacts to aquatic species are avoided by using an approved herbicide, following the District's standard environmental protection measures during herbicide application (see Section 2.3.2) and Mitigation Measures W-2 and W-5.

7-31 The EIR states that the installation and repair of grade stabilizers could affect fish passage, including steelhead migration, and concludes the impact is potentially significant. However, feasible mitigation is identified in Mitigation Measure H-7 which requires that the District develop designs that avoid fish passage barriers. This mitigation has been slightly revised to provide assurances that all new and repaired stabilizers will not create barriers to fish passage. The mitigation measure does not defer action to a later time (as the design must be fish friendly under all circumstances) and is not an unenforceable measure (as the District must monitor that the measure has been implemented as intended in the Annual Plan), contrary to the comment. Detailed plans of new or repaired stabilizers will be included in each Annual Plan, as necessary, to conduct a project specific environmental review and to allow public comment on specific locations and designs.

7-32 Mitigation Measure H-7 has been revised to require that new or repaired grade stabilizers do not create a barrier for fish passage. This measure is specific and enforceable. Compliance will be documented in the Annual Plan and annual plan monitoring reports. The objective of the hydraulic studies required under Mitigation Measure H-1 is to determine if a grade stabilizer is the most appropriate method to address channel down cutting, using the principles of channel stability and geomorphology. The District is certain that fish friendly grade stabilizers can be designed and constructed. Creating fish friendly in-stream structures or modifying existing ones to allow fish passage is common throughout California, particularly by flood control districts and Caltrans. NMFS has provided guidance to the District on such structures. In 2000, the NMFS assisted the District in designing a fish passage structure at the Montecito Debris Basin. It should be noted that the District will need to acquire the approval of the NMFS for any new or modified grade control structures, and that NMFS will review each structure for its effect on fish passage.

The District has added new Mitigation Measure F-1 Assist Others with Fish Passage Impediment Removal Projects to encourage the removal of existing impediments by other entities.

7-33 The comment requests that the District consider alternatives to grade stabilizers such as off-stream detention basins which reduce the peak runoff. That type of alternative would represent a long-term capital improvement project that would be proposed by the District if there was a persistent and severe channel down cutting problem that could not be addressed thorough routine maintenance actions. It would represent a new project, not an alternative to a routine maintenance action. In addition, detention facilities are infeasible due to the size necessary to detain the large quantities of storm flows (e.g., hundreds of acre-feet) that flow to the lower watershed during storms.

The comment also notes that the District installed a buried grade control structure on Maria Ygnacio Creek that allows fish passage. Maria Ygnacio Creek check structures were "at grade" facilities installed in anticipation of bed scour associated with post-fire high flows.

7-34 The comment states that continued maintenance of a reach could cause ongoing impacts to bio-filtration that requires mitigation each time. The EIR concludes that impacts to bio-filtration is a significant impact. In addition, the District has identified feasible mitigation (Measures B-2 and W-3) to reduce this impact. However, the feasible mitigation, to be implemented during each maintenance event, is not sufficient to reduce the impact to less than significance. Contrary to the comment, the District will apply mitigation to address bio-filtration impacts during each maintenance event.

The comment also states that the removal of habitat during each maintenance event at the same location should be mitigated each time. The District believes that there is no biological or legal basis under CEQA to require repeated habitat compensation for periodic impacts to the same area and resources. Once the impact has been mitigated, the resource has been replaced and the number of times the original resource is affected in the future is irrelevant. Nevertheless, the District recognizes the concerns about the impacts of periodic and repeated maintenance activities. As such, the District will modify the habitat restoration element of the program as follows. Habitat mitigation for maintenance activities at a specific area will only occur once during the next ten years. At the end of the ten year period, habitat mitigation would be required for maintenance work at all locations, even those areas where mitigation was previously completed. In essence, the District would "reset the clock" on habitat mitigation requirements after ten years. Consistent with this approach, all habitat mitigation completed over the past ten years under the current maintenance program and prior to the adoption of the updated routine maintenance program will not be considered for maintenance work under the updated program. Hence, no mitigation credits will be carried forward from the current program. These actions will increase the level of habitat mitigation over time, beyond the "one-time mitigation" approach.

7-35 Mitigation Measure B-3 has been modified to clarify the frequency of monitoring limits of vegetation removal - the term "periodically" has been changed to "daily." The EIR is programmatic in nature, and mitigation measures developed in this EIR (as well as in the 1991 EIR) are, by nature, programmatic. It is not possible to describe the time of day when District personnel will examine a maintenance site or the specific limits of maintenance under Mitigation Measure B-3. Instead, the measure creates a requirement that is individually implemented at specific work sites. The specific implementation of the measure will be described in each Annual Plan for each work site. This process has been followed for 10 years under the current maintenance program, as specified in the 1991 EIR.

7-36 The comment states that relocation of an endangered species, defined as "take" under federal regulations, is a significant impact. State CEQA Guidelines considers impacts to endangered species or their habitat as significant, but does not distinguish between mitigable impacts (Class II) or unmitigable impacts (Class I). The District will only relocate endangered species from a work site with the approval and take permit from the US Fish and Wildlife Service. The intent is to protect the individual animal. The District believes that this protective action, conducted with approval by the agency responsible for the species, should be considered a mitigable impact (Class II). The District has modified Mitigation Measure B-5 in the Final EIR to include assistance by endangered species experts in relocation efforts to ensure the effectiveness of relocation of this species.

Contrary to the comment, the District can successfully implement Mitigation Measure B-6 which requires monitoring of maintenance work near locations of sensitive species. The District will schedule simultaneous maintenance work to avoid conflicts with the monitoring requirements of this measure.

7-37 Mitigation Measure B-1 in the Final EIR has been modified to require the District to seek feasible opportunities for habitat restoration in the buffer zone on the tops of banks and landward of the creek that could provide a bio-filtering benefit for overland stormwater runoff.

7-38 The District has modified Mitigation Measure W-3 to include the suggestion in the comment.

7-39 Section 5.4.2.3 of the Final EIR has been revised to indicate that repair of existing grade stabilizers can also affect fish passage. The impact of new and repaired grade stabilizers is considered significant, but mitigable. Pursuant to Mitigation Measure H-7, the District will ensure that any existing grade stabilizers that are repaired under the routine maintenance program will provide passage for fish. However, the proposed program does not include replacing or modifying grade stabilizers solely for the purpose of improving fish passage. The District will provide technical assistance to other parties that wish to improve fish passage at existing grade stabilizers at their own cost.

7-40 See Response to Comment No. 3-15. Construction of stormwater treatment facilities is managed by another County entity - Project Clean Water. Such facilities will benefit stormwater quality in general, but would not represent specific mitigation for specific maintenance activities. The planning and construction of these facilities would represent separate projects outside the maintenance program. They would be subject to separate environmental review and permitting, and would most likely involve other agencies. See Response to Comment No. 7-33 concerning use of detention basins to reduce maintenance requirements.

7-41 If needed to accomplish the compensatory habitat mitigation per Mitigation Measure B-1, the District would request permission to implement restoration on private property.

7-42 The District will consider the removal of unneeded bank protection and the restoration of the affected area as an option to meet habitat mitigation requirements under Measure B-1.

7-43 The only element of the Environmentally Superior Alternative in the 1991 Final EIR that was not adopted by the Board of Directors was the policy and ordinance revisions, which were deemed infeasible by the Board of Directors. Please see Response to Comment No. 3-3 concerning Comprehensive Plan policy revisions related to flood control maintenance.

The comment states that many mitigation measures in the 1991 EIR were never implemented, although no specific measures are identified in the comment.. The District is only aware that SMP Nos. 63 and 77 have not been implemented, ("Vegetated revetment in conjunction with jetties or groins...", and " Where recovery plans exist, Flood Control shall work with other appropriate agencies in the implementation, monitoring, and maintenance"). No recovery plans have been adopted for species in the County since 1991; hence, this mitigation measure could not be implemented. Jetties or groins have never been constructed as part of routine maintenance activities.

7-44 Habitats will be restored as mitigation following the guidelines in the updated restoration program (Sections 4.5 and 4.6). Restored habitats will be designed to replace the functions of the habitats affected by maintenance activities, including restoration at the LCMB. Hence, the District would not propose to mitigate for steelhead impacts by restoring riparian woodland at the LCMB.

7-45 The EIR discusses bio-filtration in riparian systems and the role of microbes in Section 5.2.2. The District has developed the following mitigation measures to reduce impacts of maintenance on natural bio-filtration: B-1, B-2, W-3, and W-6.

7-46 Impacts on water quality due to maintenance activities are addressed in detailed in Section 5.2 of the EIR, and feasible mitigation measures have been identified. Several measures (Nos. B-1 and W-3) have been modified and several measures have been added (Nos. W-5 and W-5 through W-8) in the Final EIR to provide further water quality mitigation.

7-47 See Response to Comment No. 7-27.

7-48 The comment incorrectly states that the maintenance activities addressed in the 1991 EIR are the same as the current and updated program, and as such, the significant visual impacts identified in 1991 should still be considered significant. The current and updated program does not include the routine removal of bank vegetation, which is the major contributing factor in visual impacts. The reasons why the impact conclusions from the 1991 EIR are no longer applicable are provided in Section 5.9.2.

The commenter is incorrect in stating that the EIR concludes that visual impacts are not significant. The comment states further that the reason the impacts are less than significant is because the effects are localized. Contrary to the comment, the analysis in Section 5.9.2 concludes that there is a potentially significant visual impact associated with the routine maintenance program. This impact can be mitigated to less than significant levels.

The comment indicates that clearing 16 acres along 4.5 miles of the Santa Ynez River bed should be considered a significant impact. The visual impact assessment in Section 6.7

clearly states that the mowed areas would not be visible amongst natural occurring openings, and more importantly, there are no public viewpoints along the river. Hence, the conclusion that the visual impact is less than significant is clearly supported by substantial evidence.

Finally, the District does not consider the presence of maintenance equipment in or near a drainage to represent a visual impact. Such equipment is only present for hours to a day; as such, it is very ephemeral visual feature, and one that is common in urban and rural environments.

7-49 The cumulative impact assessment in the EIR is similar in nature to the certified 1991 EIR for routine maintenance program. It is programmatic in nature due to the large geographic extent, varied activities, long-time frame, and dispersed and ephemeral nature of the work. It is impractical to identify all probable projects in the County that could affect drainages. The analysis in Section 9.1 fulfills the requirements in the CEQA Guidelines for cumulative impacts by identifying the types of projects that cause impacts which could combine with those of the maintenance program to create significant cumulative impacts. Nine potentially significant cumulative impacts are identified in the EIR. The comment does not acknowledge the conclusions in Section 9.1. For the sake of public disclosure, the District has noted three projects in Section 9.1 that could involve site-specific cumulative impacts: Atascadero Creek Maintenance Project, Cachuma Fish Management Plan, and Lower Mission Creek Flood Control Project.

7-50 The Lower Mission Creek Flood Control Project is noted in Section 9.1. Maintenance of this project is not included in the routine maintenance program, and as such, its impacts are not evaluated. The project is located downstream of the reaches included in the routine maintenance program, and as such, would not affect the frequency and nature of routine maintenance upstream, as stated in the comment.

7-51 The potential cumulative effects of the releases for fish habitat to the Santa Ynez River from Bradbury Dam are included in Section 9.1.

7-52 The lower Atascadero Creek Maintenance Project is not included in the routine maintenance program because it is a separate project that was subjected to a separate environmental review, and which has separate permits from the routine maintenance program. Potential cumulative impacts with the routine maintenance program are addressed in Section 9.1.

7-53 The EIR states that the four significant impacts associated with the project (therefore, "project" related impacts) are <u>generally</u> [emphasis added] not significant at individual maintenance locations, but cumulatively significant for all sites combined. Mitigation measures to avoid or reduce these impacts are identified in the EIR, regardless of whether the impact is defined as a "project" or "cumulative" impact. It is unclear why this distinction is important to the commenter, as it does not affect the obligation of the District to seek mitigation or alternatives to avoid these impacts.

7-54 The project description has been revised to indicate that the frequency and extent of future routine maintenance may or may not increase over time. The data on the level of maintenance provided in Table 2-4 clearly shows that maintenance activity is correlated with flood damage during wet years. These data do not show a steady increase in maintenance despite the increase in population and residential development observed in the County in the last 10 years. Nevertheless, for the sake of disclosure, the potential for maintenance levels to increase is noted in Section 2.3. It should be noted that the County Planning and Development is requiring greater set backs from creeks for new development, and other riparian corridor protection, in their land use permits compared to 10 years ago, which often reduces the need for channel maintenance rather than increases the need.

The comment requests that the District disclose future "phases" or "expansion" of the routine maintenance program. There are no new phases or plans for expansion. The District has described the "whole" of the action in the EIR, and is not withholding a project element in order to "piecemeal" the project, as indicated in the comment. The District has gone to great effort to ensure that the entire program is described and fully understood by the public. The commenter fails to recognize that the District voluntarily prepared an update of the approved maintenance program and initiated a public review for the sake of full disclosure.

7-55 The EIR appropriately identified the beneficial impacts related to flood control by continuing the current program, and used the appropriate baseline condition in that impact assessment, as described below.

The key resources constituting the environmental setting for the maintenance program consist of riparian habitats, riparian fish and wildlife species, wetlands, and water quality. These resources are constantly changing due to variation in climatic, hydrologic, and land uses factors. Routine maintenance activities create certain environmental conditions upon their completion; however, these conditions will substantially change over time as the resources recover and adjust. As a result, most maintenance activities affect resources that have recovered from previous maintenance impacts, and may have reached a relatively natural state. In addition, maintenance activities may occasionally affect resources along reaches that have not been subject to previous maintenance.

Full public disclosure of impacts is hindered if the environmental setting is assumed to be the maintained state (i.e., brushed or sprayed channels). Under this scenario, the baseline condition in maintained reaches and basins would be a continually disturbed state, and therefore, the more environmentally sensitive approach of the updated program would only have neutral to minor impacts. This conclusion ignores the fact that the updated maintenance activities cause significant impacts in creeks with resources that have recovered to pre-maintenance conditions, or that have never been affected by maintenance. The District believes that it is more important to consider the environmental baseline as the creeks and basins in their condition prior to regular maintenance - that is, in a relatively natural condition, albeit in urban and agricultural landscapes. Using this approach, the impacts of the updated program can still be compared to the current program to identify what impacts are lessened by the revised program. This comparison is provided in Section 7 of the EIR, where the findings indicate that the proposed program has fewer impacts than the current program. However, the baseline used in this EIR also allows the District to disclose that significant, unavoidable impacts will occur under both the current and update program. The District believes that its Board of Directors must consider the full implications of approving a maintenance program again.

By using the above definition of the environmental baseline, the District is providing a complete and rigorous analysis of impacts of the update program (as if it were a new project), rather than artificially limiting the impact assessment to the incremental changes in impact levels due to proposed changes in the program. Use of this proper baseline condition also results in the conclusion that the maintenance program results in beneficial impacts by reducing bank erosion, protecting public infrastructure, and reducing flood frequency.

The comment unfairly discounts the beneficial impacts of the project based on the baseline used in the EIR analyses, while other comments in the EDC letter highlight adverse environmental impact of the project using the same baseline that is criticized in this comment.

7-56 The commenter requests that the updated routine maintenance program incorporate the 77 SMPs from the 1991 Final EIR. The new mitigation measures were developed based on the new impact assessment. They were developed to avoid or reduce specific impacts identified with the proposed updated maintenance program. The number and nature of the specific mitigation measures were derived largely from a review of actual impacts observed in the field over the past 10 years, and the effectiveness of the 1991 SMPs in addressing these impacts. The District has purposely sought to create new mitigation measures that are more effective, more precise, and with less overlap and redundancy among the measures. Inclusion of the 1991 SMPs would be contrary to the intent of updating a program to improve its effectiveness.

The commenter notes that SMP 1 ("Any federally state or local listed species and its habitat shall be protected and avoided") is replaced in the updated maintenance program with the new mitigation measures related to endangered species protection (i.e., Mitigation Measure Nos.B-5, B-6). The comment states that the new measures are less protective. The District has implemented SMP 1 for ten years by attempting to avoid habitat and populations of state and federal designated endangered species. When the avoidance is not possible, the District has received approval from California Department of Fish and Game and US Fish and Wildlife Service to temporarily relocate individuals of the species from the work area. This action results in avoidance of individual animals, which was the original intent of SMP 1. Proposed Mitigation Measure B-5 provides a greater emphasis on avoidance of the habitat of listed species than contained in SMP 1, and Measure B-6 provides additional protection for such situations compared to current SMPs. Hence, the new measures will provide more protection than the original SMPs, as intended.

It should be noted that many of the original SMPs no longer apply to the current and updated maintenance program because they address activities that are no longer included in the program, such as removal of bank vegetation and use of herbicides other than Rodeo.

Under the proposed project, these outdated SMPs would no longer be used. In addition, SMPs that were not used in the past 10 years because the impact was never observed will not be carried forward. The modification of the program mitigation measures is a practical matter, not an attempt to reduce environmental protection as implied throughout the comment letter.

7-57 The District is aware that all creeks on the South Coast and the three major rivers in the North County have been designated critical habitat by NMFS for southern steelhead. The commenter should be aware that this designation does not indicate that the species is present. The District plans and conducts its maintenance activity and sensitive species avoidance measures based on the actual presence or likely presence of such species. Hence, this designation does not preclude the maintenance activities of the District. The District must receive approval from NMFS to conduct its maintenance activities, and that such approval (through a Section 7 endangered species consultation) represents evidence that the habitat for the southern steelhead is not being significantly affected.

The comment states that channel shaping along a portion of San Jose Creek in February 2000 "violated" SMPs 1 and 11. The District did not remove occupied habitat of any endangered species, including the steelhead or riparian breeding birds (e.g., least Bell's vireo), nor displace such species because none were present.

7-58 The District has made good faith efforts over the past 10 years to comply with the 1991 SMPs during routine maintenance activities. The application of the SMPs to specific maintenance projects is fully documented each year in the pre-maintenance Annual Plan, and in the post-maintenance monitoring report. The District's compliance is a matter of public record, which has not been challenged in 10 years. The objective of the current EIR is to evaluate a modified, more environmentally sensitive approach to maintenance based on lessons learned in the past 10 years. Although the observations of the past 10 years are invaluable, the EIR provides a forward-looking analysis. It is not intended as an audit of past compliance, nor is it required to do so under CEQA.

7-59 SMP 77 states: "Where recovery plans exist, Flood Control shall work with other appropriate agencies in the implementation, monitoring, and maintenance." No recovery plans have been adopted for species in the County since 1991; hence, this mitigation measure could not be implemented. There is no evidence in the comment, nor available to the District, that listed species have declined in local creeks since 1991.

7-60 Under the current maintenance program, the Annual Plan describes the impacts for each proposed maintenance action, and identifies which SMPs apply to the action. The same process will occur under the updated Annual Plan process, however the District will augment the programmatic mitigation measures from this EIR with site-specific measures (based on the original mitigation measure) for each individual maintenance action, as necessary.

7-61 The comment correctly points out that the current and updated routine maintenance program and the lower Santa Ynez River maintenance program appear to be inconsistent with certain policies restricting work in riparian areas. However, as noted in Section 8 of the EIR, generally there are provisions or exceptions to such policies to allow public works actions to maintain and protect public facilities, prevent public hazards, and prevent flooding.

7-62 Comment noted. CEQA does not require an analysis of federal permitting requirements, jurisdictional issues, and definitions in the federal regulations. For the record, the Corps has not required a 404 permit for mowing in the river.

7-63 The District follows the most stringent habitat restoration requirements that apply to the program. Hence, if CDFG requires higher performance criteria for revegetation than contained in the EIR, then the District will observe the CDFG criteria. CDFG has discretion to use the criteria in the EIR, or their own criteria. The permitting requirements of the Corps and CDFG are not included in the routine maintenance program because they are subject to change independent of the District's mitigation measures.

7-64 See response 7-16.