

Recommended Updates and Revisions to Existing Maintenance Plan for the Annual Clearing of Earth-Bottom Flood Control Channels

February 23, 2005

This section provides recommended updates to the County of Los Angeles Department of Public Works' (Public Works) existing maintenance plan for the annual clearing of earth-bottom flood control channels to maintain design flood flow capacity. The maintenance standards were established by Public Works in November 1997 for the 100 channel reaches identified in the 1997 permits issued by the U.S. Army Corps of Engineers (ACOE), the California Department of Fish and Game (CDFG), and the California Regional Water Quality Control Board (RWQCB) to clear vegetation from the earth-bottom channels throughout the County. Since 1997, land use changes in the various watersheds have resulted in the loss of some channel reaches and also the addition of new channel reaches. In addition we need to resolve inconsistencies between the permits and the existing maintenance plan. This 2005 update of Public Works' existing maintenance plan includes these additions and deletions, and it also proposes new language for the maintenance plan intended to resolve the inconsistencies.

The following discussion addresses each reach separately. The first two sections are the existing maintenance plan followed by the CDFG permit requirements. Next is the background section that is provided to summarize BonTerra Consulting's survey and monitoring experience at each reach since 1997. The last section includes proposed changes to the Maintenance Plan text.

Reach No. 1: Bell Creek - MTD 963 MCI, SD3

Existing Maintenance Plan Language:

The channel clearing work will involve hand cutting a 15-foot-wide "tunnel" through the vegetation to the right-of-way boundary to train flows to the center of the channel inlet.

CDFG Permit Requirement:

Reach 1: The Operator shall not impact the 0.27 acre of vegetation that was allowed to remain in 1997. All removal shall be done by hand operated tools.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 2: Dry Canyon (Calabasas) PD T1845, SD3

The channel clearing work will involve maintaining and clearing a 20-foot-wide path along the centerline of the channel. A canopy of vegetation (trees along both banks) will be left in place. Hand clearing will be performed annually to keep the center portion of the channel clear and vegetation will be removed from the openings in the crib walls to the extent necessary to prevent structural damage to the crib walls.

CDFG Permit Requirement:

Reach 2: The Operator shall not impact the 0.39 acre of vegetation that was allowed to remain in 1997. All removal shall be done by hand operated tools. The width of clearing shall not exceed 20 feet and trees with a 3-inch DBH or greater shall not be removed. All exotics shall be selectively removed from the area during maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. Note that there are a number of exotic or ornamental trees within this channel reach that could be removed if Public Works was so inclined.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 3: Santa Susana Ck MCI, SD5

Hand cutting and clearing vegetation and trees will be done in an 18-foot-wide area by 75-foot-long area at the inlet to the channel. Oak trees will be left in place.

CDFG Permit Requirement:

Reach 3: Removal of vegetation shall be done by hand clearing only.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 4: Browns Creek, SD5

Mechanical equipment will be used to keep clear all vegetation from bank to bank within the rail and timber revetment.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 5: Caballero Creek MCI (West Fork) and Reach No. 6: Caballero Creek MCI (East Fork), SD3

The vegetation clearing work will involve hand clearing a 20-foot-wide path along the centerline of the channel.

CDFG Permit Requirement:

Reaches 5 & 6: The total amount of area impacted due to maintenance activities, for both reaches combined, was a 20-foot-wide path along the centerline of the channel for a total of 812 Linear feet (0.37 acre). The Operator shall use hand clearing only. Exotics shall be removed during maintenance activities. The vegetation (0.36 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 7: Bull Creek MCO, SD3

The work will involve hand clearing dead vegetation and trimming tree limbs along the banks to ensure clear flow within the channel. This work will be done only in the first 400 feet of natural channel downstream from the concrete channel outlet to ensure that flow does not back up into the concrete channel upstream of Victory Boulevard.

CDFG Permit Requirement:

Reach 7: The trimming and removal of dead vegetation along the banks within the 400 linear feet shall not exceed a width of 15 feet on each bank. The Operator shall not impact the 1.45 acres of vegetation that was allowed to remain in 1997.

Background:

Maintenance plan has been fully implemented. In 1997, the monitoring biologist found that the vegetation in this channel reach was dominated by ornamental and other non-native species. So at the request of the monitoring biologist, ornamental and other non-native species in this channel reach are being removed and replaced by native riparian species through the natural recruitment process (i.e. young reproductive growth that occurs naturally in every reach). Selected native species consist mostly of willows, although some mule fat has also been identified for replacement. The selected young willows and mule fat were done so by the monitoring biologist in concert with Public Works. The location of the native species selected for protection was the primary determining factor (i.e. outside the channel invert so as not to obstruct water flow).

Proposed New Maintenance Plan Language:

The work will involve *mechanical or manual methods to clear* dead vegetation and tree limbs along the banks to ensure clear flow within the channel. *Mechanical clearing is necessary due to hazardous conditions. The mechanical clearing will be accomplished from the top of bank. No equipment will be driven on the invert.* This work will be done only in the first 400 feet of natural channel downstream from the concrete channel outlet to ensure that flow does not back up into the concrete channel upstream of Victory Boulevard. *A biologist will monitor clearing activities in order to facilitate replacement of ornamental vegetation with native riparian vegetation.*

Reach No. 8: Project 470 Outlet, SD3

All vegetation in the channel will be kept clear during the dry season using mechanical or manual methods.

CDFG Permit Requirement:

Reach 8: Hand clearing only.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. Since the dry season in southern California overlaps the breeding season for birds, the phrase "cleared annually" is preferred.

Proposed New Maintenance Plan Language:

All vegetation in this channel reach will be *cleared annually* using mechanical or manual methods.

Reach No. 9: Project 106 Outlet, SD3

Brush and tree trimming will be performed where needed to keep growth at the levels that were left in November 1997.

CDFG Permit Requirement:

Reach 9: Hand Clearing Only. Impacts shall not exceed 0.12 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 10: Project No 469, SD3

Due to a recent toxic spill, no work was performed in November 1997, since virtually all of the vegetation was killed. Vegetation and dead vegetation will be mechanically removed to the extent necessary to prevent restricting flows in the storm drain upstream of Victory Boulevard.

This will require clearing the channel for approximately 4,000 feet downstream of Victory Boulevard. The reach will be maintained clear of all vegetation during the dry season.

CDFG Permit Requirement:

Reach 10: No work was done in 1997. The Operator shall not impact 2.11 acres of vegetation that was allowed to remain in the channel in 1997.

Background:

The maintenance plan has not been fully implemented for this channel reach because of a conflict between the maintenance plan and the permits. Issuance of the original CDFG permit coincided with a toxic spill in this channel reach and the statement that "no work was done in 1997." The result was the CDFG permit condition that stated "Operator shall not impact 2.11 acres of vegetation that was allowed to remain in the channel in 1997." Since the total area of this channel reach is about 2.11 acres, any meaningful clearing would not be in compliance with this condition. With direction from the monitoring biologist, Public Works has performed some clearing activities in this channel reach that have focused on removal of vegetation from the invert, protecting native riparian vegetation, and allowing some of the ruderal (weedy) vegetation to remain. This channel reach is dominated by ruderal vegetation with very limited amounts of native riparian vegetation. This channel reach needs structural repair as water can pond substantially, even after clearing of vegetation from the invert.

Proposed New Maintenance Plan Language:

The following would seem appropriate for this channel reach after structural repairs are complete.

Vegetation will be cleared annually to the extent necessary to prevent restricting flows in the storm drain upstream of Victory Boulevard. This will require mechanical clearing of vegetation in the channel for approximately 4,000 feet downstream of Victory Boulevard. Channel work will also include mechanical grading to train flows to the centerline of the channel.

Reach No. 11: Rowley Channel, SD5

No vegetation existed in November 1997. Mechanical or manual clearing methods will be used to maintain the reach clear of all vegetation during the dry season.

CDFG Permit Requirement:

Reach 11: No work was done in 1997. No vegetation was present in the channel.

Background:

Maintenance plan has been fully implemented and there are there are no outstanding issues. Since the dry season in southern California overlaps the breeding season for birds, the phrase "cleared annually" is preferred.

Proposed New Maintenance Plan Language:

All vegetation in this channel reach will be *cleared annually* using mechanical or manual

methods.

Reach No. 12: Haines Cyn MCO, SD5

Hand clearing of all vegetation will be used to keep the reach clear of vegetation, except for vegetation that was allowed to remain. This process will be repeated annually to prevent growth from restricting flows at the outlet to the channel.

CDFG Permit Requirement:

Reach 12: Hand Clearing Only.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the Santa Ana sucker in this channel reach; however, it was determined that this channel reach could support the Santa Ana sucker in subsequent years. Therefore, if suitable habitat is present (i.e. water is present), Santa Ana sucker surveys are required prior to any clearing activities. Due to concerns for sensitive or special status plant and wildlife species, the CDFG designated this as a "hand clearing only" reach. Substantial sediment build-up has occurred at this reach and has resulted in ponding water that not only is a public hazard (i.e., West Nile Virus), but also is not favorable habitat conditions for the Santa Ana sucker. Fall 2004 surveys found the Santa Ana sucker was not present and sediment removal was proposed with appropriate minimization measures. However, the proposed action could not be accomplished in a timely manner.

Proposed New Maintenance Plan Language:

Hand clearing of all vegetation will be used to keep the reach clear of vegetation, except for vegetation that was allowed to remain. This process will be repeated annually to prevent growth from restricting flows at the outlet to the channel. *If surface water is present, then surveys for the Santa Ana sucker are required prior to initiation of clearing activities.*

Reach No. 13: Project No 5215 unit 1, SD5

The channel clearing work involve mechanical clearing the earthen outlet channel with a backhoe and hand cutting all vegetation from the first 250 feet of channel bottom (12-feet wide) downstream at the end of Christie Avenue. Bank vegetation and the remaining 300 feet of channel will not be cleared.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 14: May Channel (MCO into Pacoima Canyon), SD3

Hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 14: No work was done in 1997 and 0.5 acre of vegetation was in the channel. The Operator shall not impact the 0.5 acre of vegetation that was allowed to remain in 1997.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 15: Pacoima Wash, SD3

Mechanical equipment and hand cutting will be used to keep the reach cleared of all vegetation.

CDFG Permit Requirement:

Reach 15: No work was done in 1997 and 0.01 acre of vegetation was in the channel. The Operator shall not impact 0.01 acre of vegetation that was allowed to remain in 1997.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 16: Verdugo Wash - Las Barras Cyn (chnl inlet), SD5

Hand clearing work will be used to keep the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 16: Hand Clearing Only. Impacts shall not exceed 0.07 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 17: Sheep Corral Chnl, SD5

All vegetation will be hand cleared within the channel bottom and portions of the banks for a length of 300 feet.

CDFG Permit Requirement:

Reach 17: Hand Clearing Only. Impacts shall not exceed 0.14 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 18: Engleheard Chnl, SD5

Hand clearing work will only involve dead vegetation and tree branches from between the pipe and wire revetments. All vegetation will be cleared by manual methods during the dry season.

CDFG Permit Requirement:

Reach 18: Hand Clearing Only.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. Since the dry season in southern California overlaps the breeding season for birds, the phrase "cleared annually" is preferred.

Proposed New Maintenance Plan Language:

Hand clearing work will *remove* dead vegetation and tree branches from *the area* between the pipe and wire revetments. All vegetation will be *cleared annually* by manual methods.

Reach No. 19: Pickens Cyn, SD5

Manual removal of all vegetation adjacent to or growing out of the crib structures will be performed.

CDFG Permit Requirement:

Reach 19: Hand Clearing Only.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 20: Webber Chnl (strm @ private bridge), SD5

Mechanical equipment will be used to keep the channel clear of all vegetation.

CDFG Permit Requirement:

Reach 20: Impacts shall not exceed 0.13 acre (115 linear feet by 50 feet wide).

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 21: Webber Chnl (main channel inlet d/s bridge), SD5

Hand clearing work will be performed to keep the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 21: Hand Clearing Only. Impacts shall not exceed 0.03 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 22: Halls Canyon, SD5

Manual removal of all vegetation adjacent to or growing out of the crib structures will be performed.

CDFG Permit Requirement:

Reach 22: Hand Clearing Only.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 23: Flint Cyn MCO, SD5

Hand clearing work will be performed to keep the reach clear of all invasive vegetation.

CDFG Permit Requirement:

Reach 23. Hand Clearing Only. Impacts shall not exceed 0.13 acre.

Background:

This channel reach has a grouted rock rubble bottom rather than an earth bottom and should be removed from Public Works' earth-bottom channel list.

Reach No. 24: Compton Creek - Los Angeles River to Artesia Freeway, SD2

Mechanical equipment will be used to keep the channel clear of all vegetation.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 25: Los Angeles River - Willow Street to Pacific Coast Highway, SD4

Using mechanical equipment, all exotic vegetation will be removed throughout this reach. Riparian vegetation will be kept in place at the level that was left in November 1997.

CDFG Permit Requirement:

Reach 25: The Operator shall not impact the 9.37 acres of vegetation that was allowed to remain in 1997 and maintenance activities shall not extend beyond the area cleared in 1997.

Background:

Maintenance plan has been fully implemented. However, a substantial amount of the riparian vegetation (9.37 acres) that was allowed to remain in 1997 was cleared in 2000 by the maintenance branch of the ACOE. The riparian vegetation that was not cleared in 2000 consisted of the larger willow trees. The clearing pattern established by the ACOE in 2000 has been maintained since then by Public Works.

Proposed New Maintenance Plan Language:

Using mechanical equipment, all exotic vegetation will be removed throughout this reach. Riparian vegetation *allowed to remain in 2000 shall not be impacted by future maintenance activities. Trimming of the riparian vegetation may be necessary in the future as growth occurs.*

Reach No. 26: Project 74 - 500-foot Upstream of Vermont Avenue to Dominguez Channel, SD2

The channel will be cleared using hand labor. Hand labor will be used to trim the vegetation which has been allowed to remain. New growth will not be allowed to become established and will be removed annually by manual methods.

CDFG Permit Requirement:

Reach 26: Hand Clearing Only.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 27: Wilmington Drain, Harbor Freeway to Pacific Coast Highway, SD4

All vegetation from the channel in the area upstream of Lomita Boulevard will be kept cleared. Between Lomita Boulevard and Pacific Coast Highway, vegetation will be kept clear from the two channels, but the island will remain. The work will be done with mechanical equipment.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. The channel outlet is in Ken Malloy Regional Park, on the downstream side of Pacific Coast Highway, and is not included in the description for Reach No. 27. The clearing in Ken Malloy Regional Park is performed under a separate permit (SBAA 5-353-96) from Reach No. 27. Therefore, the maintenance plan language will limit itself to the areas upstream of Pacific Coast Highway.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 28: Triunfo Ok (PD T2200), SD3

The channel clearing work will involve removing all vegetation from the ungrouted rock levee, hand clearing all vegetation along the levee from the base to a distance of 20 feet.

CDFG Permit Requirement:

Reach 28: Hand clearing only. The Operator shall avoid impacts to southwestern pond turtles. Clearing shall not extend beyond the area that was cleared in 1997 or as stated in the maintenance plan without

prior approvals from the Department. Surveys for sensitive species (i.e., pond turtles) may be required if additional clearing is needed. No native trees shall be removed with a 2 inch diameter at breast height or greater. The 0.2 acre of vegetation that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. Previous CDFG comments have indicated a concern for southwestern pond turtle and the need for "training" of Public Works personnel. The monitoring biologist has not yet detected any southwestern pond turtles during annual pre-clearing visits to this reach; however, these pre-clearing visits are not performed in conjunction with the actual clearing activities. BonTerra Consulting recommends that biological monitoring be conducted during clearing activities to avoid any potential impacts to the southwestern pond turtle.

Proposed New Maintenance Plan Language:

The channel clearing work will involve removing all vegetation from the ungrouted rock levee *and hand clearing of all vegetation along the levee from the base to an outward distance of 20 feet. A biologist will monitor clearing activities as existing conditions warrant, to avoid impacts on the southwestern pond turtle.*

Reach No. 29: Las Virgenes Creek (PD T1684) MCI, 803

The channel clearing work will involve hand clearing a 30-foot-wide strip along the watercourse low flow from the debris posts to the right-of-way boundary.

CDFG Permit Requirement:

Reach 29: Hand clearing only. The Operator shall avoid impacts to southwestern pond turtles. The Operator shall not impact the 0.61 acre of vegetation that was allowed to remain in 1997. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has been fully implemented. Previous CDFG comments have indicated a concern for southwestern pond turtle and the need for "training" of Public Works personnel. The monitoring biologist has not yet detected any southwestern pond turtles during annual pre-clearing visits to this reach; however, these pre-clearing visits are not performed in conjunction with the actual clearing activities. BonTerra Consulting recommends that biological monitoring be conducted during clearing activities to avoid any potential impacts to the southwestern pond turtle.

Proposed New Maintenance Plan Language:

The channel clearing work will involve hand clearing a 30-foot-wide strip along the watercourse low flow *channel* from the debris posts to the right-of-way boundary. *A biologist will monitor clearing activities as existing conditions warrant, to avoid impacts on the southwestern pond turtle.*

Reach No. 30: Las Virgenes Creek (PD T1350 unit 2) Outlet, SD3

Hand clearing work will be performed to keep the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 30: Hand Clearing Only. Impacts shall not exceed 0.11 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

This channel reach has been quitclaimed to the City of Calabasas and should be removed from Public Works' earth-bottom channel list.

Reach No. 31: Las Virgenes Creek (PD T2055), 503

Hand clearing work will be performed to keep the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 31: Hand Clearing Only. Impacts shall not exceed 0.09 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has not been fully implemented at this reach due to lack of access. Public Works is in the process of determining the appropriate course of action for this reach.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 32: Stokes Cyn Channel (PD T043), SD3

The work will involve hand clearing of all vegetation between the pipe and wire. Embankment vegetation outside the pipe and wire channel will be left in place.

CDFG Permit Requirement:

Reach 32: Hand Clearing Only. No vegetation was allowed to remain in 1997.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 33: Medea Creek (PD T1378 u.2), SD3

The work will involve mechanical clearing of all the vegetation in the channel.

CDFG Permit Requirement:

Reach 33: The Operator shall avoid vegetation clearing due to sensitive resources. If any vegetation needs to be cleared during future maintenance activities, the Operator shall provide additional mitigation for those impacts. The entire 0.69 acre mod. area is vegetated. Therefore, if clearing all vegetation, need to mitigate for an additional 0.69 acre of riparian vegetation. Vegetation shall be removed by hand clearing only. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has not been implemented in this channel reach since 1999 due to sensitive resources and expected mitigation requirements. Review of photo-documentation indicates that native riparian vegetation dominates the concrete-lined part of the channel reach with cattails (*Typha* sp.) and upstream in the natural part of the channel reach with willows (*Salix* sp.). Exotic or non-native species appear to be a minor component of the vegetation in this channel reach. Although the sensitive resources referred to in the CDFG permit are not identified, it assumed to be the southwestern pond turtle. Therefore, as with Reaches 28 and 29, BonTerra Consulting recommends that biological monitoring be conducted during clearing activities to avoid any potential impacts to the southwestern pond turtle. Furthermore, clearing of the cattails that presently "choke" the concrete-lined part of this channel reach were cleared in 1998 and were presumably mitigated for under the agreement signed in 1997. As a result, the cattails and other vegetation in the concrete-lined part of this channel reach can be cleared without any additional mitigation. However, the willow dominated riparian vegetation upstream has not been cleared post-1997; CDFG would probably require mitigation if these areas are to be cleared.

Proposed New Maintenance Plan Language:

The work will involve mechanical *or manual* clearing of all vegetation in *the concrete-lined part of the channel. A biologist will monitor clearing activities as existing conditions warrant, in order to avoid impacts to the southwestern pond turtle.*

Reach No. 34: Medea Creek (PD T1005) Main Channel Outlet, SD3

Hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 34: Hand Clearing Only. Impacts shall not exceed 0.19 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 35: Medea Creek Main Channel Inlet, Under Route 101, SD3

Hand clearing will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 35: Hand Clearing Only. Impacts shall not exceed 0.14 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 36: Cheseboro Main Channel Inlet, SD3

The clearing work will involve hand cutting/trimming three two-inch diameter trees. New vegetation will be cleared annually to prevent blockage of the inlet during the dry season.

CDFG Permit Requirement:

Reach 36: Hand Clearing Only. The Operator shall not impact the 0.05 acre of vegetation that was allowed to remain in 1997. The vegetation that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. However, since the dry season in southern California overlaps the breeding season for birds, the phrase "cleared annually" is preferred.

Proposed New Maintenance Plan Language:

The clearing work will involve hand cutting/trimming three two-inch diameter trees. New vegetation will be cleared annually to prevent blockage of the inlet.

Reach No. 37: Medea Ck/Cheseboro Ck Outlet, SD3

Hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 37: No work was done and 0.25 acres of vegetation was present in the channel in 1997. The vegetation that was allowed to remain in

1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 38: Lindero MCO, SD3

Hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 38: Hand Clearing Only. Impacts shall not exceed 0.19 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 39: Beatty Channel Outlet @ SGR 25+99.00 SD1

This is not an earth-bottom channel. Mechanical equipment will be used to keep the channel outlet clear of all vegetation.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the Santa Ana sucker in this channel reach; however, it was determined that this channel reach could support the Santa Ana sucker in subsequent years because water flow is contiguous with the natural stream bed downstream. Therefore, if suitable habitat is present (i.e. water is present), Santa Ana sucker surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

This is not an earth-bottom channel. Mechanical equipment will be used to keep the channel outlet clear of all vegetation. *If surface water is present, then surveys for the Santa Ana sucker are required prior to initiation of clearing activities.*

Reach No. 40: San Gabriel River - Santa Fe Dam to Thienes Ave., SD1

From Santa Fe Dam to the San Bernardino Freeway, most of the vegetation consists of mule fat interspersed with various exotic species. In this reach, a 10-foot-wide strip was hand cleared along the toe of each levee to provide room to maintain and inspect the levee. The 10-foot-wide strips along the levee toes will be kept clear of all vegetation annually using a combination of mechanical equipment and hand labor. In the center of the channel, the mule fat was mowed using various types of mowing equipment. The root structures of the plants were not disturbed. Two strips of vegetation, varying from 50 to 75 feet in width, were allowed to remain along each side of the channel invert. In subsequent years, mowing will be accomplished in alternate cycles between the center portion of the channel and the two strips of vegetation.

From the San Bernardino Freeway to Thienes Avenue, portion of the reach will be kept clear of all vegetation using mechanical equipment and hand labor, except for the riparian vegetation allowed to remain in place in November 1997. This process will be repeated annually.

CDFG Permit Requirement:

Reach 40 (Santa Fe Dam - San Bernardino Freeway): If the Department determines that interim habitat is provided, no additional mitigation will be required for the 44.2 acres. However, if the Department determines that it does not provide interim habitat, the Operator shall provide additional mitigation at a 1:1 ratio.

Background:

Maintenance plan has been fully implemented. Some of the riparian vegetation allowed to remain in place in November 1997, has been lost due to natural causes. For example, many willow trees have died recently due to drought conditions that stressed trees so that they became susceptible to a wood borer infestation. In 2003 and 2004, the monitoring biologist, in conjunction with Public Works' personnel, identified young willow trees at selected locations for replacement of lost trees. The trees have occurred through the natural recruitment process (i.e. young reproductive growth that occurs naturally in every reach), and were selected primarily due to location (i.e. located away from structure bases and not located in center of low-flow channels).

The riparian habitat in the portion of this reach from San Bernardino Freeway to Thienes Avenue, referred to as Reach 40b in the BonTerra Consulting 2002 focused survey results report, has been occupied by the least Bell's vireo. It is a migratory species that is not present during the fall when Public Works' annual clearing activities occur. However, the permits require protection of the habitat during clearing and require a biological monitor familiar with least Bell's vireo habitat requirements.

Proposed New Maintenance Plan Language:

From Santa Fe Dam to the San Bernardino Freeway (*Reach 40a*), most of the vegetation consists of mule fat interspersed with various exotic species. In this reach, 10-foot-wide strips were hand cleared along the toe of each levee to provide room to maintain and inspect the levee. The 10-foot-wide strips along the levee toes will be kept clear of all vegetation annually using a combination of mechanical equipment and hand labor. In 2004, two strips of vegetation varying from 50 to 75 feet in width, was mowed using various types of mowing equipment. The root structures of the plants were not disturbed. The mule fat in the center of the channel was

allowed to remain in 2004. In subsequent years, mowing will be accomplished in alternate cycles between the center portion of the channel and the two strips of vegetation. *The young willow trees selected in 2003 as replacements for riparian trees lost due to natural causes, will be protected as long as they do not become a maintenance problem.*

From San Bernardino Freeway to Thienes Avenue (*Reach 40b*), this portion of the reach will be kept clear of all vegetation using mechanical equipment and hand labor, except for the riparian vegetation allowed to remain in place in November 1997. This process will be repeated annually *and will be monitored by a biologist familiar with least Bell's vireo habitat requirements. The young willow trees selected in 2003 as replacements for riparian trees lost due to natural causes, will be protected as long as they do not become a maintenance problem.*

From Santa Fe Dam to Thienes Avenue (Reaches 40a and 40b), grading to reestablish baseline conditions will be performed on an as needed basis to maintain access ramps and low-flow channels from side outlets.

Reach No. 41: Walnut Creek - San Gabriel River to Baldwin Park Boulevard, SD1

Mechanical equipment will be used to keep the channel clear of all vegetation, except for the riparian habitat allowed to remain in November 1997. Hand work will be necessary to remove some of the vegetation growing in the rock riprap along the channel sides and on the riprap at the downstream end of the concrete channel. Some trimming of the riparian vegetation may be necessary to reduce the impact on flow in the channel as future growth occurs.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented. Some of the riparian vegetation allowed to remain in place in November 1997, has been lost due to natural causes. As with the contiguous San Gabriel River reaches, many willow trees have recently died due to drought conditions that stressed trees enough that they became susceptible to a wood borer infestation. In 2003, the monitoring biologist, in conjunction with Public Works' personnel, has identified young willow trees at selected locations for replacement of lost trees. The trees were selected primarily due to location (i.e. located away from structure bases and not located in center of channel).

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 42: San Jose Creek - Outlet of concrete channel downstream 700 ft., SD1

The vegetation will be cleared using mechanical equipment, except for riparian vegetation allowed to remain in November 1997. Trimming of the riparian vegetation may be necessary in the future as growth occurs. This process will be repeated annually.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented. Some of the riparian vegetation allowed to remain in place in November 1997, has been lost due to natural causes. The loss of willow trees in this channel is believed to be a result of high water flows during winter storms. The monitoring biologist, in conjunction with Public Works' personnel, has identified young willow trees within the same "line" of protected riparian trees in this channel reach that can be used to offset the loss of willows due to natural causes.

Proposed New Maintenance Plan Language:

The vegetation will be cleared using mechanical equipment, except for riparian vegetation allowed to remain in November 1997. Trimming of the riparian vegetation may be necessary in the future as growth occurs. *This process will be repeated annually. The young willow trees selected in 2002 as replacements for riparian trees lost due to natural causes will be protected as long as they do not become a maintenance problem.*

Reach No. 43: San Gabriel River - Whittier Narrows Dam to Beverly Boulevard, SD1

Mechanical equipment will be used to keep the channel clear of all vegetation, except for the riparian vegetation allowed to remain in November 1997. Trimming of the riparian vegetation may be necessary in the future as growth occurs.

CDFG Permit Requirement:

Reach 43: Maintenance activities shall not extend beyond the area cleared in 1997. The vegetation (5.27 acres) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. The riparian habitat in this reach has been occupied by the least Bell's vireo. It is a migratory species that is not present during the fall when Public Works' annual clearing activities occur. However, the permits require protection of the habitat during clearing and require a biological monitor familiar with least Bell's vireo habitat requirements.

Proposed New Maintenance Plan Language:

Mechanical equipment will be used to keep the channel clear of all vegetation, except for the riparian vegetation allowed to remain in November 1997. Trimming of the riparian vegetation may be necessary in the future as growth occurs. *The young willow trees selected in 2003 as replacement for riparian trees lost due to natural causes will be protected as long as they do not become a maintenance problem. Channel clearing activities in this channel reach will be monitored by a biologist familiar with least Bell's vireo habitat requirements.*

Reach No. 44: San Gabriel River - Rubber Dams, SD1, 4

Mechanical equipment will be used to keep the channel clear of all vegetation, except for the riparian vegetation allowed to remain in November 1997. Trimming of the riparian vegetation may be necessary in the future as growth occurs.

CDFG Permit Requirement:

Reach 44: Maintenance activities shall not extend beyond the area cleared in 1997. The vegetation (5.70 acres) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 45: Sand Canyon (PD T1307) Main Channel Inlet, SD5

Mechanical clearing will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 45: Impacts shall not exceed 0.05 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 46: Sand Canyon (PD T1307) Main Channel Outlet, SD5

Mechanical clearing will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 46: Impacts shall not exceed 0.06 acre. No native trees shall be removed with a 2 inch diameter at breast height or greater. If additional areas need to be impacted, the areas shall be quantified in the annual report and mitigation for impacts to vegetation will be required.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 47: Santa Clara River Main Channel (PDT 1733-Unit 1) SD5

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach.

CDFG Permit Requirement:

Reach 47: The Operator shall not impact the 4.51 acres of vegetation that was allowed to remain in 1997. Impacts shall not exceed 0.76 acre (1656 linear feet by 20 feet wide along each levee). Clearing shall not extend more than 20 feet beyond the toe of the levee.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 48: Mint Cyn Channel between Sierra Highway & Adon Avenue, SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 49: Mint Cyn Channel between Adon Ave. & Scherzinger Lane, SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation. This process will be repeated annually during the dry season.

CDFG Permit Requirement:

Reaches 48-49: No work was done in 1997 and no vegetation was present in the channel.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. Since the dry season in southern California overlaps the breeding season for birds, the phrase "cleared annually" is preferred.

Proposed New Maintenance Plan Language:

All vegetation in this channel reach will be *cleared annually* using mechanical and manual methods.

Reach No. 50: Mint Cyn Channel between Solamint & Soledad, SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 50: No work was done in 1997 and 0.01 acre of vegetation was present in the channel. The vegetation (0.01 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 51: Mint Cyn MCO (PD 1894)/Santa Clara River Main Channel, SD5

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach.

CDFG Permit Requirement:

Reach 51: Impacts shall not exceed 0.9 acre (932 linear feet by 20 feet wide along each levee). Clearing shall not extend more than 20 feet beyond the toe of the levee. The vegetation (0.01 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 52: Sierra Hwy Rd Drainage (CDR 523. 203), SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 52: Hand Clearing Only. Impacts shall not exceed 0.4 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 53: Santa Clara River Non-main Channel (PD 832) Main Channel Inlet, SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 53: Impacts shall not exceed 0.03 acre.

Background:

Maintenance plan has been fully implemented. Under high flow conditions, water in this reach can be contiguous with the Santa Clara River which harbors the unarmored threespine stickleback. Although this reach was not included in the fish surveys, it seems possible that surface waters here could serve as a reservoir for the stickleback.

Proposed New Maintenance Plan Language:

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation. *If adequate surface water is present, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 54: Santa Clara River Non-main Channel (PD 832) Main Channel Outlet, SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 54: Impacts shall not exceed 0.31 acre.

Background:

Maintenance plan has been fully implemented. Under high flow conditions, water in this reach can be contiguous with the Santa Clara River which harbors the unarmored threespine stickleback. Although this reach was not included in the fish surveys, it seems possible that surface waters here could serve as a reservoir for the stickleback.

Proposed New Maintenance Plan Language:

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation. *If adequate surface water is present, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 55: Santa Clara River Main Channel – Right Bank Reach (PD’s 374, 910, 1339, 1758, & 1562 Unit 2)

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach.

CDFG Permit Requirement:

Reach 55: Impacts shall not exceed [**x**] acres. Clearing shall not extend more than 20 feet beyond the toe of the levee.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Note that this is a new reach formed by combining previous Reaches 55, 58, 59 and 60 into one reach in order to reduce the paper work load. Its upstream limit is the Sierra Highway and downstream limit is Porretta Channel Outlet. These four reaches are continuous along the right bank of the Santa Clara River, have an identical maintenance plan, and biological constraints are also identical. The CDFG Permit Requirements for this new “Right Bank Reach” are not expected to change, although a new acre limit for impacts will need to be determined.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the right-side levee slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 56: Santa Clara River Main Channel – Left Bank Reach (PD 1832)

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach.

CDFG Permit Requirement:

Reach 56: Impacts shall not exceed [**x**] acre. Clearing shall not extend more than 20 feet beyond the toe of the levee.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Note that this reach has now changed to only include the left bank of the Santa Clara River. Its upstream limit is the outlet of PD 832 and downstream limit is the terminus of the levee. The CDFG Permit Requirements for this "Left Bank Reach" are not expected to change, although a new acre limit for impacts will need to be determined.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the left-side levee slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 57: Whites Cyn (PD T704 MCI), SD5

Mechanical or hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 57: No work was done in 1997 and 0.42 acre of vegetation was present in the channel. The vegetation that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 61: Santa Clara River Main Channel (PD 659), SD5

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach.

CDFG Permit Requirement:

Reach 61: Impacts shall not exceed 0.75 acre. Clearing shall not extend more than 20 feet beyond the toe of the levee.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 62: Santa Clara River Main Channel (PD 659 & 754), SD5

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach.

CDFG Permit Requirement:

Reach 62: Impacts shall not exceed 2.80 acre. Clearing shall not extend more than 20 feet beyond thy toe of the levee.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 63: Oak Ave Rd Drainage (CDR 523.081), SD5

The channel clearing work will involve mechanized removal of all vegetation bank to bank.

CDFG Permit Requirement:

Reach 63: Impacts shall not exceed 0.85 acre.

Background:

Maintenance plan has been fully implemented. Under high flow conditions, water in this reach can be contiguous with the Santa Clara River, which harbors the unarmored threespine stickleback. Although this reach was not included in the fish surveys, it seems possible that surface waters here could serve as a reservoir for the stickleback.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanized removal of all vegetation bank to bank. *If adequate surface water is present, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 64: Soledad Cyn Rd Drainage (CDR 523.071 D Outlet), SD5

The channel clearing work will involve clearing an 8-foot-wide path along the centerline of the channel. All vegetation will be removed by hand labor.

CDFG Permit Requirement:

Reach 64: Impacts shall not exceed 0.10 acre (8 feet wide by 577 linear feet).

Background:

Maintenance plan has been fully implemented. Previous clearing in this reach has been accomplished by backhoe, staged at the access road, with the attached bucket reaching into the channel to remove vegetation. The impacts for this clearing method are not considered to be greater than a hand crew walking through the channel to remove vegetation by hand. Under high flow conditions, water in this reach can be contiguous with the Santa Clara River, which harbors the unarmored threespine stickleback. Although this reach was not included in the fish surveys, it seems possible that surface waters here could serve as a reservoir for the stickleback.

Proposed New Maintenance Plan Language:

The channel clearing work will involve *mechanical and manual methods* to clear an 8-foot-wide path along the centerline of the channel. *If adequate surface water is present, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 65: Soledad Cyn Rd Drainage (CDR 523.071 E Outlet), SD5

The channel clearing work will involve clearing a 12-foot-wide path along the centerline of the channel. All vegetation will be removed by hand labor.

CDFG Permit Requirement:

Reach 65: Hand Clearing Only. Impacts shall not exceed 0.08 acre.

Background:

This channel reach has been developed and should be removed from Public Works' earth-bottom channel list.

Reach No. 66: Santa Clara River Main Channel (PD 1538), SD5

The channel clearing will involve mechanized removal of all vegetation within 20 feet from the slope lining along the entire reach.

CDFG Permit Requirement:

Reach 66: No vegetation was allowed to remain in 1997. Clearing shall not extend more than 20 feet beyond the toe of the levee.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the levee slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 67: Bouquet Cyn (PD's 451, 625, 700B, 722, 773, 802, 1201, 1065, 1930 MCI)

The channel clearing work will involve mechanical clearing and grading of all vegetation, except for a 10-foot-wide strip near the centerline of the channel. This process will be repeated annually, except that the 10-foot strip left will alternate from one side of the channel to the other.

CDFG Permit Requirement:

Reach 67: The vegetation (1.33 acres + 0.62 acre + 0.02 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. However, the continued protection of the 10-foot-wide strip of vegetation near the center of the channel is considered to be a liability for this channel reach. Therefore, a new clearing program is proposed for this channel reach. The clearing will be conducted in a rotational pattern where half the channel is cleared one year and then the other half is cleared the following year. This clearing pattern will consequently clear vegetation that is two years old. This clearing pattern will produce a dense growth of riparian herb vegetation and not allow the tall growth that can become a liability under high flow conditions. From a biological standpoint, the 10-foot-wide strip of vegetation is considered too narrow to attract the sensitive or special status bird species that breed in mature riparian habitats. In addition, as this narrow strip of riparian vegetation continues to grow, it becomes less dense near the ground and provides less cover for wildlife coming to the low-flow channel for water. It is BonTerra Consulting's position that for this channel reach, the young dense growth of riparian herb vegetation that would be present with the alternating clearing pattern, would be more productive for wildlife than the ageing narrow strip of willow riparian habitat.

The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Note that this is a new reach formed by combining previous Reaches 67, 69 and 70 into one reach in order to reduce the paper work load. Its upstream limit is the Hobb Avenue and downstream limit is Bouquet Canyon Road at Festividad Drive. These three reaches are continuous, have an identical maintenance plan, and biological constraints are also identical. The CDFG permit requirements for this new Bouquet Canyon Reach are not expected to change, although the acre limit for impacts will need to be adjusted.

Proposed New Maintenance Plan Language:

The channel clearing work will involve *an alternating pattern of mechanical clearing of vegetation. Only one-half of the channel will be cleared each year. The other one-half of the channel will be cleared the following year. Channel clearing work will also include mechanical grading of sediment to train flows to the centerline of the channel. Outlet structures will be*

graded to drain each year. If adequate surface water is present, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.

Reach No. 68: Haskell Cyn Chnl (PD T1930 MCI), SD5

Mechanical clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 68: No work was done in 1997. The vegetation (0.61 acres) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

This channel reach has been developed and should be removed from Public Works' earth-bottom channel list.

Reach No. 71: Santa Clara River Main Channel (PD 1946), SD5

The channel clearing work will involve mechanized removal of all vegetation within 20 feet from the base of the slope lining along the entire reach.

CDFG Permit Requirement:

Reach 71: Clearing shall not extend more than 20 feet beyond the toe of the levee.

Background:

Maintenance plan has been fully implemented, except that clearing activities were not conducted in 2003/2004. The ACOE permit dated December 9, 2003, did not authorize clearing activities in Reaches 71 and 82 because these reaches are considered occupied by the arroyo toad. Note that the 2003 focused surveys found the arroyo toad within one kilometer of this reach, which the survey protocol defines as occupied habitat (i.e., suitable habitat within one kilometer of a toad sighting is considered to be occupied). The 2003 surveys did not find the arroyo toad within the maintained part of the reach (i.e., the 20 feet at toe of slope lining where vegetation is mechanically removed), although aestivating individuals would not have been detectable. However, maintenance activities have resulted in compacted soils that are considered unsuitable for burrowing by toads. So despite the maintenance activities being carried out in an area considered "occupied" by the toad, the pre-clearing surveys are considered sufficient to avoid impacts on the toad. BonTerra Consulting therefore recommends that Public Works use the proposed new maintenance plan language.

The 2002 and 2003 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys are required prior to any clearing activities. Note that the December 9, 2003 ACOE permit included the unarmored threespine stickleback with the arroyo toad as reasons for not authorizing clearing activities in Reaches 71 and 82. The addition of the stickleback appears to be unnecessary since there appears to be no clear difference between these two reaches and the other stickleback reaches maintained by the Department (i.e., they have potential to support the stickleback when water is present and the

survey results for 2002 and 2003 were all negative).

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanized removal of all vegetation within 20 feet from the base of the slope lining along the entire reach. *If surface water is present, then surveys for the unarmored threespine stickleback and arroyo toad are required prior to initiation of clearing activities. Additionally, whether or not surface water is present, a qualified toad biologist must be present during clearing activities to salvage any adult arroyo toads that may appear during the clearing activities.*

Reach No. 72: South Fork-Santa Clara River (Smizer Ranch MCI), SD5

The channel clearing work will involve hand clearing dead vegetation and cutting invasive and trimming riparian vegetation that would obstruct flows. Tree canopy will be retained, yet a clear "tunnel" path will be provided to convey flows.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 73: Wildwood Cyn Chnl (PD T361) Main Channel Inlet SD5

Mechanical and hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 73: Impacts shall not exceed 0.05 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 74: Wildwood Cyn Chnl (PD T361), SD5

Mechanical or hand clearing work will be performed to keep reach clear of all vegetation.

CDFG Permit Requirement:

Reach 74: Impacts shall not exceed 0.02 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 75: South Fork - Santa Clara River (PD's 725, 916, 1041, & 1300), SD5

The channel clearing work will involve mechanical clearing and grading of all vegetation bank to bank from Lyons Avenue to Orchard Village Road.

Mechanical grading and clearing of invasive vegetation from bank to bank will be performed from Orchard Village Road to the confluence with Newhall Creek.

Mechanical clearing of all vegetation will be done along the base of the concrete levee from the confluence with Newhall Creek to Magic Mountain Parkway. A 20-foot-wide strip will be maintained clear along the entire length of the levee and 45 degree grading of low-flow channels from side outlets to the center of the watercourse will also be maintained clear of all vegetation to minimize pounding and blockage of side outlet flows. A centerline watercourse low flow 12-feet wide will be maintained clear of all vegetation and will be graded along the entire length in this reach. Two island areas supporting mature trees will be left in place as well as the riparian vegetation. Tree pruning of dead branches and limbs that could obstruct flow will be removed by hand labor.

CDFG Permit Requirement:

Reach 75: The vegetation (15.37 acres) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 76: Pico Cyn (PD 813), SD5

The channel clearing work will involve bank-to-bank removal of all vegetation using mechanical equipment.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 77: Newhall Ck outlet, SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 77: No work was done 1997 and 0.89 acre of vegetation was present in the channel. The vegetation (0.89 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. As with many other channel reaches, the methods used to arrive at the acreage total for vegetation allowed to remain in 1997 are unknown. For this reach, the 0.89 acre of vegetation that was allowed to remain in 1997 must be located downstream of its confluence with Placerita Creek as all vegetation upstream of this confluence is cleared. It is assumed that to change the acreage total(s) in the CDFG permit, maps would need to be provided to the CDFG that would show the extent of clearing within the well defined channel reach limits.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 78: Placerita Creek, SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 78: No work was done in 1997 and 0.01 acre of vegetation was present in the channel. The vegetation (0.01 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 79: South Fork - Santa Clara River (Valencia Blvd Bridge Stabilizer), SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 79: No work was done in 1997 and 0.02 acre of vegetation was present in the channel. The vegetation (0.02 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. The unarmored threespine stickleback cannot move upstream past the stabilizer under the Valencia Blvd. bridge. All waters upstream are unoccupied by the stickleback; all of the fish that have been observed occur only up to the base of the stabilizer.

Proposed New Maintenance Plan Language:

Mechanical equipment will be used to maintain the reach clear of all vegetation. *If adequate surface water is present downstream of the Valencia Blvd Bridge stabilizer, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities downstream of the bridge.*

Reach No. 80: South Fork - Santa Clara River (PD's 1947 & 1946), SD5

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the toe of the concrete levee along the entire length.

CDFG Permit Requirement:

Reach 80: Clearing shall not extend more than 20 feet beyond the toe of the levee. The vegetation (2.05 acres) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented, except that clearing activities were not conducted in 2003/2004. The ACOE permit dated December 9, 2003, did not authorize clearing activities in Reaches 71 and 82 because these reaches are considered occupied by the arroyo toad. Note that the 2003 focused surveys found the arroyo toad within one kilometer of this reach, which the survey protocol defines as occupied habitat (i.e., suitable habitat within one kilometer of a toad sighting is considered to be occupied). Reach 80 is contiguous with Reach 71 and the distinction between the two has not always been clear in the survey efforts; however, Reach 80 is within 1 kilometer of the toad sighting and would be considered occupied as well. Since Reach 80 is contiguous with Reach 71, it is probably best that the maintenance plan group this Reach 80 with Reaches 71 and 82 as reaches occupied by the arroyo toad.

Since this ACOE permit stated that the existing minimization measures are "not adequate to avoid possible take of the arroyo toad," it appears that something else will be required. The 2003 surveys did not find the arroyo toad within the maintained part of the reach (i.e., the 20 feet at toe of slope lining where vegetation is mechanically removed), although aestivating individuals would not have been detectable. However, maintenance activities have resulted in compacted soils that are considered unsuitable for burrowing by toads. So despite the maintenance activities being carried out in an area considered occupied by the toad, the pre-clearing surveys are considered sufficient to avoid impacts on the toad. BonTerra Consulting therefore recommends that Public Works use the proposed new maintenance plan language.

The 2002 and 2003 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities. Note that the December 9, 2003 ACOE permit included the unarmored threespine stickleback with the arroyo toad as reasons for not authorizing clearing activities in Reaches 71 and 82. The addition of the stickleback appears to be unnecessary since there appears to be no clear difference between these two reaches and the other stickleback reaches maintained by Public Works (i.e., they have potential to support the stickleback when water is present and the survey results for 2002 and 2003 were all negative).

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical removal of all vegetation within 20 feet from the toe of the concrete levee along the entire length. *If surface water is present, then surveys for the unarmored threespine stickleback and arroyo toad are required prior to initiation of clearing activities. Additionally, whether or not surface water is present, a qualified toad biologist must be present during clearing activities to salvage any adult arroyo toads that may appear during the clearing activities.*

Reach No. 81: Santa Clara River Non-main Channel (PD 2138), SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 81: No work was done in 1997 and no vegetation was present in the channel.

Background:

This channel reach has been developed and should be removed from Public Works' earth-bottom channel list.

Reach No. 82: Santa Clara River Main Channel (PD 2278), SD5

Channel clearing work will involve mechanically removing all vegetation within 20 feet of the toe of the concrete levee along the entire reach.

CDFG Permit Requirement:

Reach 82: No work done in 1997 and no vegetation was present in the channel. Future maintenance activities shall involve mechanical means and shall not extend more than 20 feet beyond the toe of the levee, impacts within this reach shall not exceed 0.40 acre.

Background:

Maintenance plan has been fully implemented, except that clearing activities were not conducted in 2003/2004. The ACOE permit dated December 9, 2003, did not authorize clearing activities in Reaches 71 and 82 because these reaches are considered occupied by the arroyo toad. Note that the 2003 focused surveys found the arroyo toad within this reach, although not

within the maintained part of this reach. Since this ACOE permit stated that the existing minimization measures are "not adequate to avoid possible take of the arroyo toad," it appears that something else will be required. The 2003 surveys did not find the arroyo toad within the maintained part of the reach (i.e., the 20 feet at toe of slope lining where vegetation is mechanically removed), although aestivating individuals would not have been detectable. However, maintenance activities have resulted in compacted soils that are considered unsuitable for burrowing by toads. So despite the maintenance activities being carried out in an area considered occupied by the toad, the pre-clearing surveys are considered sufficient to avoiding impacts on the toad. BonTerra Consulting therefore recommends that Public Works use the following language below for the new maintenance plan

The 2002 and 2003 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys are required prior to any clearing activities. Note that the December 9, 2003 ACOE permit included the unarmored threespine stickleback with the arroyo toad as reasons for not authorizing clearing activities in Reaches 71 and 82. The addition of the stickleback appears to be unnecessary since there appears to be no clear difference between these two reaches and the other stickleback reaches maintained by Public Works (i.e., they all have potential to support the stickleback when water is present and the survey results for 2002 and 2003 were all negative).

Proposed New Maintenance Plan Language:

Channel clearing work will involve mechanical removal of all vegetation within 20 feet from the toe of the concrete levee along the entire length. *If surface water is present, then surveys for the unarmored threespine stickleback and arroyo toad are required prior to initiation of clearing activities. Additionally, whether or not surface water is present, a qualified toad biologist must be present during clearing activities to salvage any adult arroyo toads that may appear during the clearing activities.*

Reach No. 83: Santa Clara River Non-main Channel (PD T1074) Lateral A.8 Inlet, SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 83: Impacts shall not exceed 0.33 acre (103 linear feet by 140 feet wide).

Background:

This channel reach has been developed and should be removed from Public Works' earth-bottom channel list.

Reach No. 84: Santa Clara River Non-main Channel (PD T1074) Main Channel Inlet, SD5

Mechanical equipment will be used to keep all vegetation clear in this reach.

CDFG Permit Requirement:

Reach 84: No work was done in 1997 and 0.02 acre of vegetation was present in the channel. The vegetation (0.02 acre) that was allowed

to remain in 1997 shall not be impacted during future maintenance activities.

Background:

This channel reach has been developed and should be removed from Public Works' earth-bottom channel list.

Reach No. 85: Santa Clara River Non-main Channel (PD T1074) Main Channel Inlet, SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 85: Impacts shall not exceed 0.16 acre (140 linear feet by 50 feet wide).

Background:

This channel reach has been developed and should be removed from Public Works' earth-bottom channel list.

Reach No. 86: Violin Cyn MCO, SD5

Mechanical equipment will be used to maintain the reach clear of all vegetation.

CDFG Permit Requirement:

Reach 86: No work was done in 1997 and 0.41 acre of vegetation was present in the channel. The vegetation (0.41 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

Mechanical equipment will be used to maintain the reach clear of all vegetation. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 87: Castaic - The Old Road Drainage (CDR 525.021D) Outlet, SD5

The channel clearing work will involve hand cutting and clearing a 20-foot path from the riprap outlet to the main watercourse, Castaic Creek.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. water), unarmored threespine stickleback surveys are required prior to any clearing activities.

Proposed New Maintenance Plan Language:

The channel clearing work will involve hand cutting and clearing a 20-foot path from the riprap outlet to the main watercourse, Castaic Creek. *If surface water is present, then surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 88: Hasley Canyon Upper (PD T1496), SD5

The channel clearing work will involve mechanical equipment to remove all vegetation from bank to bank from Sharp Road to 755 feet upstream. From 330 feet downstream of Sharp Road to Sharp Road, hand clearing will be done.

CDFG Permit Requirement:

Reach 88: Impacts shall not exceed 0.42 acre (1085 linear feet by 17 feet wide).

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

The channel clearing work will involve mechanical equipment to remove all vegetation from bank to bank from Sharp Road to 755 feet upstream. From 330 feet downstream of Sharp Road to Sharp Road, hand clearing will be done.

Reach No. 89: Hasley Canyon South Fork (PD T1496), SD5

The channel clearing work will involve hand labor clearing of alluvial sage scrub.

CDFG Permit Requirement:

Reach 89: The vegetation (0.02 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 90: Hasley Canyon Lower (North Fork PD T1496), SD5

The channel clearing work will involve hand clearing and mechanized removal of vegetation. Portions of the channel bottom will be denuded of vegetation while leaving the earthen bank vegetated, clusters of mature growth in the channel bottom will remain to the level it was left in November 1997.

CDFG Permit Requirement:

Reach 90: The vegetation (0.19 acre) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 91: San Martinez Chiquito Cyn Chnl u/s of Keningston Rd, SD5

The channel clearing work will involve removal of all the vegetation within the pipe and wire channel using hand labor, but the embankment vegetation will be left in place.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 92: San Martinez Chiquito Cyn Chnl unnamed tributary, u/s of Keningston Rd (N. Fork), SD5

The channel clearing work will involve removal of all the vegetation within the pipe and wire channel using hand labor, but the embankment vegetation will be left in place.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 93: San Martinez Chiquito Cyn Chnl between Keningston Road and Val Verde Park, SD5

The channel clearing work will involve removal of all the vegetation within the pipe and wire channel using hand labor, but the embankment vegetation will be left in place.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 94: San Martinez Chiquito Cyn Chnl between Val Verde Park to d/s of Madison St, SD5

The channel clearing work will involve removal of all the vegetation within the pipe and wire channel using hand labor, but the embankment vegetation will be left in place.

CDFG Permit Requirement:

Reach 94: No work was done in 1997 and no vegetation was present in the channel.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 95: Project No 1224, SD5

The channel clearing work will involve removal of all vegetation within the pipe and wire channel using mechanical equipment, but the embankment vegetation will be left in place.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 96: PD 1591, Calabasas, SD3

The channel clearing will involve removing all vegetation from the inlet and outlet approaches to the box culvert under Vicasa Drive. Clearing work will be done by hand labor and only within the dedicated right of way.

CDFG Permit Requirement:

Reach 96: Hand Clearing Only. No vegetation was allowed to remain in 1997.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 97: PD T1982, Castaic Creek, SD5

The channel clearing work will involve hand cutting and mechanized removal of all vegetation and trees along the entire length of the levee at a width of 20 feet and clearing and grading 45-degree, 12-foot-wide low flows from the side outlets to the center of the main watercourse.

CDFG Permit Requirement:

Reach 97: The Operator shall leave a total of 1.17 acre of vegetation. The vegetation (1.17 acres) that was allowed to remain in 1997 shall not be impacted during future maintenance activities.

Background:

Maintenance plan has been fully implemented. The 2002 focused surveys did not find the unarmored threespine stickleback in this channel reach; however, it was determined that this channel reach could support the unarmored threespine stickleback in subsequent years. Therefore, if suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys are required prior to any clearing activities. Note that the BonTerra Consulting 2002 focused survey results report did not list this channel reach separately; however, it is contiguous with and was included in the survey of Reach 87. Therefore, the survey results for Reach 87 apply also to Reach No. 97.

Proposed New Maintenance Plan Language:

The channel clearing work will involve hand cutting and mechanized removal of all vegetation and trees along the entire length of the levee at a width of 20 feet and clearing and grading 45-degree, 12-foot-wide low flows from the side outlets to the center of the main watercourse. *Surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 98: Walnut Creek - Channel Inlet, SD1

To the extent that storm flows do not keep the inlet free of vegetation, mechanical equipment will be used to keep the inlet clear of all vegetation. No regrowth will be allowed to remain.

CDFG Permit Requirement:

Reach 98: Impacts shall not exceed 0.03 acre.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 99: Kagel Canyon - Tujunga Wash, SD5

Hand clearing work will be performed to keep all vegetation clear in this reach.

CDFG Permit Requirement:

Reach 99: No work was done in 1997 and no vegetation was present in the channel.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

Reach No. 100: Dry Canyon, Calabasas Creek Inlet, SD3

The channel clearing work will involve hand clearing all vegetation at the channel inlet. Bank vegetation will be left in place.

CDFG Permit Requirement:

Although the CDFG Permit lists no specific requirements for this reach, general conditions and measures of permits apply.

Background:

Maintenance plan has been fully implemented and there are no outstanding issues.

Proposed New Maintenance Plan Language:

No Change Needed.

SEVEN NEW SOFT-BOTTOM CHANNEL REACHES:

Reach No. 101: Violin Cyn (PD 2312)

Due to the design criteria that were used for the channel, the vegetation that exists in the entire invert of the channel will be removed every two years (each year half of the soft bottom will be cleared of vegetation). On the side that is not being cleared, a 12-foot path along the toe of the lining and 12-foot training channels will be cut to aid in levee inspection and draining the inlets.

CDFG Permit Requirement:

Although not included with the prior CDFG Permit, the general conditions and measures of permits are expected to apply.

Background:

BonTerra Consulting's May 12, 2004 report titled "Habitat Assessment Reconnaissance Surveys of Debris Basins, Debris Retaining Inlets and Soft-bottom Channels" determined that this reach contains habitats that potentially support three Threatened and Endangered species: two plant species, the San Fernando Valley spineflower and slender-horned spineflower, and one wildlife species, the arroyo toad. However, BonTerra Consulting conducted focused surveys for the spineflower in 2003 and the survey results were negative. Although surveys for the toad were not recommended at that time, the Critical Habitat for the arroyo toad now includes a small portion of this reach. Therefore, surveys for the arroyo toad are recommended (survey window is during the breeding season which is from March 15 to July 1).

Implementation of the proposed maintenance plan would require clearing of vegetation that has not been impacted. As a result, the resource agencies would be expected to require mitigation for these impacts. However, repeating the current maintenance practice at the channel may not require mitigation from the resource agencies.

Proposed New Maintenance Plan Language:

The channel clearing work will involve *an alternating pattern of mechanical clearing of vegetation. Only one-half of the channel will be cleared each year. The other one-half of the channel will be cleared the following year.* In addition vegetation will be mechanically removed along a 12-foot path along the toe of the levee lining and 12-foot training channels will be cut to aid in levee inspection and draining the inlets.

Reach No. 102: Violin Cyn (PD 2275)

Every year mechanically remove vegetation bank to bank from the concrete invert (Station 12+40) to the furthest downstream invert (Station 14+32) and all vegetation within 20 feet of the right bank side slope lining upstream of that stabilizer. This amount of clearing equals 0.63 acres. The remaining 1.73 acres within our easement would only be cleared if sediment accumulates in the channel to a level where it is no longer capable of containing a capital flood event.

CDFG Permit Requirement:

Although not included with the prior CDFG Permit, the general conditions and measures of permits are expected to apply.

Background:

BonTerra Consulting's May 12, 2004 report titled "Habitat Assessment Reconnaissance Surveys of Debris Basins, Debris Retaining Inlets and Soft-bottom Channels" determined that this reach contains habitats that potentially support two Threatened and Endangered species outside the currently maintained area. Therefore, no focused surveys are required if maintenance activities are restricted to previously maintained areas.

The current maintenance practice appears to be what is described above as the proposed maintenance plan. Therefore, mitigation requirements from the resource agencies would not be expected.

Proposed New Maintenance Plan Language:

Every year, all vegetation within 20 feet of the right bank slope lining will be mechanically removed. In addition, the vegetation will be mechanically removed, bank to bank, from the furthest downstream stabilizer (Station 14+32) to the concrete invert (Station 12+40).

Reach No. 103: Bouquet Cyn Channel (PD2225)

Annual mechanized removal of all vegetation and accumulated sediment within 12 feet from the base of the slope lining on both sides of the channel from 150 feet downstream of the edge of Newhall Ranch Road Bridge to the Santa Clara River confluence. In addition, within the first 500 feet downstream of the bridge to where channel width is 200 feet wide, one half of the channel will be cleared alternating years by mechanized removal of all vegetation and the removal of accumulated sediment within the fully concrete portion and grouted rip-rap portion. In addition, from 500 feet downstream to the confluence of the Santa Clara River the channel will be cleared in thirds by mechanized removal of all vegetation, with the third year in the center of the channel.

CDFG Permit Requirement:

This reach is currently maintained under an amendment to MOU 5-076-99.

Background:

A new clearing program is proposed for this channel reach in order to lend to continuity and ease of clearing in the field. The clearing will be conducted in a rotational pattern where half the channel is cleared one year and then the other half is cleared the following year. This clearing pattern will consequently clear vegetation that is two years old. This clearing pattern will produce a dense growth of riparian herb vegetation and not allow the tall growth that can become a liability under high flow conditions.

BonTerra Consulting's May 12, 2004 report titled "Habitat Assessment Reconnaissance Surveys of Debris Basins, Debris Retaining Inlets and Soft-bottom Channels" determined that this reach contains habitats that potentially support three Threatened and Endangered species: unarmored threespine stickleback, southwestern willow flycatcher, and least Bell's vireo. Focused surveys for these species were recommended to determine their presence or absence.

Focused surveys for the unarmored threespine stickleback and the southwestern willow flycatcher were completed by Chambers Group, and the results are shown in the November 2004 report titled "Results of Focused Wildlife Surveys Conducted at Various LADPW Debris Basins, Debris Retaining Inlets, and Soft-Bottom Channels in Los Angeles County, California." The survey window for the vireo is April 10 through July. Note that one Threatened and Endangered species, the slender-horned spineflower, has the potential to occur immediately outside of the maintenance area.

Proposed New Maintenance Plan Language:

The channel clearing work will involve *an alternating pattern of mechanical clearing of vegetation. Only one-half of the channel will be cleared each year. The other one-half of the channel will be cleared the following year. Channel clearing work will also include mechanical grading of sediment to train flows to the centerline of the channel. Outlet structures will be graded to drain each year. If adequate surface water is present, surveys for the unarmored threespine stickleback are required prior to initiation of clearing activities.*

Reach No. 104: Castaic Creek (PD 2441 Unit 2)

The channel clearing will involve mechanized removal of all vegetation within 20 feet of the left bank side slope lining along the entire reach. In addition, grade to drain a 12-foot wide training channel from the tributary underground storm drains to the easement line. The training channel will be at a 45 degree angle to the side slope lining. This amount of clearing equals 1.2 acres of area. The remaining 3.3 acres within our easement would be cleared if sediment accumulates in the channel to a level where it is no longer capable of containing a capital flood event.

CDFG Permit Requirement:

Although not included with the prior CDFG Permit, the general conditions and measures of permits are expected to apply.

Background:

BonTerra Consulting's May 12, 2004 report titled "Habitat Assessment Reconnaissance Surveys of Debris Basins, Debris Retaining Inlets and Soft-bottom Channels" determined that this reach contains habitats that potentially support four Threatened and Endangered wildlife species: unarmored threespine stickleback, arroyo toad, southwestern willow flycatcher, and least Bell's vireo. Focused surveys for these species would be required prior to starting any maintenance activities. Focused surveys for the unarmored threespine stickleback and the southwestern willow flycatcher were completed by Chambers Group, and the results are shown in the November 2004 report titled "Results of Focused Wildlife Surveys Conducted at Various LADPW Debris Basins, Debris Retaining Inlets, and Soft-Bottom Channels in Los Angeles County, California."

Implementation of the proposed maintenance plan would require clearing of some riparian vegetation, including vegetation that may be part of a mitigation site. Since this reach is within Critical Habitat for the arroyo toad and least Bell's vireo, the resource agencies would be expected to require maximum mitigation ratios for any impacts within this reach.

Proposed New Maintenance Plan Language:

The channel clearing will involve mechanized removal of all vegetation within 20 feet of the left bank side slope lining along the entire reach. In addition, grading to drain a 12-foot wide

training channel from the tributary underground storm drains to the easement line will be prepared. The training channel will be at a 45-degree angle to the side slope lining.

Reach No. 105: San Francisquito Cyn Channel (PD 2456)

The channel clearing will involve mechanized removal of all vegetation within 20 feet of the side slope lining along both banks throughout the entire reach. In addition, grade to drain a 20-foot wide training channel from the left bank outlet at station 7 + 34 to the easement line. The training channel will be at a 45 degree angle to the side slope lining. This amount of clearing equals 0.74 acres of area. The remaining 2.11 acres within our easement would only be cleared if accumulates in the channel to a level where it is no longer capable of containing a capital flood event.

CDFG Permit Requirement:

Although not included with the prior CDFG Permit, the general conditions and measures of permits are expected to apply.

Background:

BonTerra Consulting's May 12, 2004 report titled "Habitat Assessment Reconnaissance Surveys of Debris Basins, Debris Retaining Inlets and Soft-bottom Channels" determined that this reach contains habitats that potentially supports two Threatened and Endangered species: unarmored threespine stickleback and arroyo toad. Focused surveys for these species would be required prior to starting any maintenance activities. Focused surveys for the unarmored threespine stickleback were completed by Chambers Group, and the results are shown in the November 2004 report titled "Results of Focused Wildlife Surveys Conducted at Various LADPW Debris Basins, Debris Retaining Inlets, and Soft-Bottom Channels in Los Angeles County, California." If suitable habitat is present (i.e. surface water), unarmored threespine stickleback surveys would be required prior to any clearing activities.

The current maintenance practice appears to be what is described above as the proposed maintenance plan. Therefore, mitigation requirements from the resource agencies would not be expected, unless clearing activities extend outside the area currently maintained.

Proposed New Maintenance Plan Language:

The channel clearing will involve mechanized removal of all vegetation within 20 feet of the side slope lining along both banks throughout the entire reach. In addition, grade to drain a 20-foot wide training channel from the left bank outlet at station 7 + 34 to the easement line. The training channel will be at a 45 degree angle to the side slope lining. *If surface water is present, then surveys for the unarmored threespine stickleback and arroyo toad are required prior to initiation of clearing activities. Additionally, whether or not surface water is present, a qualified toad biologist must be present during clearing activities to salvage any adult arroyo toads that may appear during the clearing activities.*

Reach No. 106: Castaic Drain Outlet (RMD Reach)

The channel clearing at this location will primarily affect the concrete and grouted rip-rap portion of the channel. A portion of the soft-bottom channel will be affected to create maintenance access. Clearing activities will include mechanized removal of vegetation along a 12 foot-wide access path aligned along toe of east bank; in addition Public Works will install and maintain crushed aggregate base for an equipment access path.

CDFG Permit Requirement:

Although not included with the prior CDFG Permit, the general conditions and measures of permits are expected to apply.

Background:

BonTerra Consulting's July 28, 2004 report titled "Results of Habitat Assessment for PD2012 Outlet, Castaic Drain Outlet, and The Old Road Channel, Los Angeles County, California" determined that this reach contains habitats that potentially support three Threatened and Endangered wildlife species: arroyo toad, southwestern willow flycatcher, and least Bell's vireo. Focused surveys for these three species were recommended.

Proposed New Maintenance Plan Language:

The channel clearing will involve mechanized removal of vegetation along 12 foot-wide access path aligned along toe of east bank; install and maintain crushed aggregate base equipment access path.

Reach No. 107: The Old Road Channel (RMD Reach)

The channel clearing will involve mechanized or hand-labor removal of all vegetation up to approximately 8 feet high from bank to bank within the 943-foot long soft bottom channel.

CDFG Permit Requirement:

Although not included with the prior CDFG Permit, the general conditions and measures of permits are expected to apply.

Background:

BonTerra Consulting's July 28, 2004 report titled "Results of Habitat Assessment for PD2012 Outlet, Castaic Drain Outlet, and The Old Road Channel, Los Angeles County, California" determined that this reach contains habitats that potentially support two Threatened and Endangered wildlife species: southwestern willow flycatcher and least Bell's vireo. Focused surveys for these two avian species were recommended.

Proposed New Maintenance Plan Language:

Mechanical equipment or hand labor will be used to clear all vegetation up to approximately 8 feet high from bank to bank within the 943-foot long soft bottom channel. *If surface water is present, then surveys for the unarmored threespine stickleback and arroyo toad are required prior to initiation of clearing activities. Additionally, a qualified toad biologist must be present during clearing activities to salvage any adult arroyo toads that may appear during the clearing activities.*

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