FINAL RECOMMENDATIONS SUMMARY
TECHNICAL ASSESSMENT REPORT AND RECOMMENDATIONS
FOR ENGINEERED EARTH-BOTTOM FLOOD CONTROL CHANNELS
LOCATED WITHIN THE LOS ANGELES RIVER WATERSHED

INTRODUCTION

On February 4, 2010, the Los Angeles Regional Water Quality Control Board (Regional Board) issued Waste Discharge Requirements (WDR) Order No. R4-2010-0021 to the Los Angeles County Flood Control District (LACFCD), authorizing the maintenance of earth-bottom flood control channels located within the County of Los Angeles. Prior to this WDR, the Regional Board had issued a Section 401 Certification to the LACFCD to maintain 100 earth-bottom channel reaches located throughout the County. The Regional Board issued the current WDR in lieu of a Section 401 Certification.

The earth-bottom channels are an important component of the LACFCD's statutory mission, which in addition to flood control, is to infiltrate water for future beneficial use. Such channels must be regularly maintained, however, to ensure that their flood control capacity is not impaired.

The WDR requires that a Feasibility Study (FS) be conducted by watershed on each of the earth-bottom (sometimes referred to as "soft-bottom") channel reaches that were included in the WDR. The first FS has been prepared for channels within the Los Angeles River watershed. The goal of the FS is to determine whether "a potential may exist for native vegetation to remain within the soft-bottom portion of the channel or if additional hydraulic capacity is needed" (WDR, Condition 45). This condition recognizes both the opportunity for additional native vegetation to remain or to replace non-native vegetation and the need to ensure that flood control requirements are met.

To meet the WDR's requirement for a technical assessment report and recommendations, a Technical Assessment Report and Recommendations (TAR&R) Report has been prepared, which consists of this Final Recommendations Summary (Recommendations) as well as Appendix A, the Biological Technical Assessment report prepared by BonTerra Consulting, dated May 2013, plus appendices and exhibits (Biological Report); Appendix B, the Hydraulic Analysis Technical Assessment report prepared by LACFCD dated April 2013 plus appendices (Hydraulic Report); and Appendix C, the Water Quality Monitoring Report (Monitoring Report). The TAR&R was performed subject to the approved Study Workplan (SW) and has been released for stakeholder comment.

The WDR covers maintenance of 26 earth-bottom channels in the Los Angeles River Watershed (Reaches 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21,

22, 24, 25, 96, 99, and 100). The LACFCD subsequently determined that Reach 17, Sheep Corral – tributary to Verdugo Wash, is owned, maintained, and operated by the City of Glendale, and not by the LACFCD. Although discussed in the Biological Report for purposes of completeness, Reach 17 was not included in the Hydraulic or Monitoring Reports (since the LACFCD does not own or operate the reach) and is not otherwise discussed in the Recommendations.

TECHNICAL ASSESSMENTS

Pursuant to the SW, the TAR&R employed an analytical approach that involved first ranking the earth-bottom channel reaches from high to low according to their biological value. These rankings were determined by biological surveys conducted by BonTerra Consulting, an LACFCD contractor, and are discussed in the Biological Report. At the same time in the Hydraulic Report, LACFCD hydrologists analyzed the hydraulic capacity within each reach under various vegetation scenarios. A list of those reaches which had capacity for additional vegetation or the replacement of non-native with native vegetation was then reviewed by BonTerra Consulting for development of specific vegetation management recommendations.

BonTerra Consulting subsequently provided those detailed biological recommendations for further hydraulic analysis by the LACFCD hydrologists. The biological recommendations were also evaluated by LACFCD maintenance personnel for impacts on maintenance activities, including with regard to vector control issues.

Following those reviews, a list of final Recommendations (discussed in the following section) was developed. In summary, 7 reaches were recommended for additional native vegetation or the replacement of non-native vegetation with native vegetation. No change in current maintenance clearance practices was recommended for 11 reaches due to insufficient hydraulic capacity for additional vegetation. In 6 reaches, additional vegetation removal will be required. In one reach, concerns relating to vector control require further analysis of current maintenance activities.

RECOMMENDATIONS

EARTH-BOTTOM CHANNELS WITH CAPACITY FOR ADDITIONAL/REPLACEMENT NATIVE VEGETATION

The following 7 reaches were identified as having the capacity to contain additional native vegetation or the replacement of non-native with native vegetation. These reaches are presented below in order of their ranked biological value from highest to lowest (as discussed in the Biological Report) along with the recommendations for additional native vegetation and/or replacement of non-native vegetation. Aerial maps

showing these reaches and the areas of additional/replacement native vegetation are included as Exhibits 1A thru 1G of the Biological Report.

Reach 22, Halls Canyon Channel. Except on the crib structures, allow native shrubs (but not trees) to grow on the invert of the entire channel reach. Selectively protect native shrubs by removing non-native vegetation. Native trees will not be allowed to mature on the channel invert (See Exhibit 1A of Biological Report).

Reach 25, Los Angeles River. In the last 500 feet of the reach (i.e., the downstream end of reach) and on the left bank looking downstream, allow four willow trees to grow and mature at the edge of the water. The willow trees will be maintained under the existing maintenance plan that allows for trimming of lower branches (See Exhibit 1B of Biological Report).

Reach 1, Bell Creek. Allow willow canopy to spread outside the channel. Allow native shrubs such as coyote bush and mule fat to become established in this area. Relocate existing chain-link fence to protect this area (See Exhibit 1C of Biological Report).

Reach 20, Webber Channel, Tributary to Halls Canyon Channel. Allow native herbaceous and shrub species to grow on right bank looking downstream. Selectively remove non-native species from right bank. Do not allow oaks or other additional trees to grow on the banks (See Exhibit 1D of Biological Report).

Reach 21, Webber Channel (main channel inlet at bridge), tributary to Halls Canyon Channel. Allow native herbaceous and shrub species to grow on left bank looking downstream underneath the coast live oak woodland. Selectively remove non-native ground cover species (e.g., ivy) from the left bank. Do not allow additional oaks or other trees to grow on the banks (See Exhibit 1E of Biological Report).

Reach 19, Pickens Canyon, tributary to Verdugo Wash. Except on the crib structures, allow native shrubs to grow on the invert of the channel reach from the upstream end to the pedestrian bridge at Mountain Avenue. Selectively protect native shrubs by removing non-native vegetation. Native trees will not be allowed to grow in the invert (See Exhibit 1F of Biological Report).

Reach 9, Tributary to the Sepulveda Flood Control Basin Project No. 106. Remove non-native ash trees at the top of both banks and replace with native trees. Sycamore trees are the preferred native trees to be planted (See Exhibit 1G of Biological Report).

EARTH-BOTTOM CHANNELS LACKING CAPACITY FOR ADDITIONAL NATIVE VEGETATION

The following 17 earth-bottom channel reaches were identified in the Hydraulic Report as either having insufficient capacity to allow for additional native vegetation or insufficient capacity to allow current areas of vegetation to remain. The reaches in the first category are Reaches 3, 4, 5, 6, 8, 10, 15, 16, 24, 96, and 100. These reaches are already being fully cleared on an annual basis. The reaches in the second category are Reaches 2, 12, 13, 14, 18, and 99. These reaches have contained vegetation protected from removal under agreements originally negotiated in 1997. LACFCD will seek approvals from applicable agencies to remove the vegetation that now remains in these reaches.

EARTH-BOTTOM CHANNEL WITH VECTOR CONTROL ISSUE

Reach 7, Bull Creek. The Hydraulic Report identified this reach as having capacity for additional vegetation and BonTerra Consulting's biological recommendation was to allow willows to mature at the toe of both banks. The recommendation was then reviewed by LACFCD channel maintenance personnel. This reach contains nuisance flows on a continuous basis (making it a "wet reach"), and additional vegetation on the bank may interfere with Vector Control District inspections for mosquitoes that carry West Nile Virus. In light of this concern, LACFCD is continuing to analyze this reach.

WATER QUALITY MONITORING

As required by Condition 49 of the WDR, water quality monitoring was conducted during the 2011 annual maintenance clearing of certain earth-bottom channel reaches. Included as Appendix C is a tabular representation of the water quality monitoring results along with a discussion of those results and recommendations for future maintenance activities.

MITIGATION MEASURES

Condition 51 of the WDR requires that the recommendations concerning earth-bottom channel clearance "shall also include suggested schedules of vegetation removal frequency in order to ensure the maximum habitat preservation, consistent with necessary flood control, is achieved." These schedules already are in place, and are dictated primarily by the need to protect nesting birds and other species. The LACFCD has employed BonTerra Consulting to monitor the channel clearance activities so as to avoid impacts to such species. BonTerra Consulting also has advised on ways to leave, maintain, and protect trees and other vegetation within a number of the channel reaches to the extent practicable when flood control and vector issues permit. In

addition, invasive, exotic, and non-native vegetation is also removed during annual maintenance to ensure that native vegetation is preserved. These mitigation measures are ongoing, and are reflected in the biological and annual mitigation reports available on the LACFCD website. In addition, the LACFCD has mitigated impacts from its annual earth-bottom channel maintenance activities since the late 1990s, when it established 62.7 acres of habitat in the Big Tujunga Wash Mitigation Bank as mitigation for the clearance of vegetation in channels.

CONCLUSION

The LACFCD has completed the required FS analyses for the earth-bottom channel reaches that it maintains within the Los Angeles River Watershed. As discussed above, allowing additional native vegetation and/or replacement of non-native with native vegetation is recommended in 7 earth-bottom reaches. This additional vegetation will allow the LACFCD to offset mitigation required in other reaches.