Initial Study/ Mitigated Negative Declaration

Big Tujunga Reservoir Sediment Removal Project

Prepared for

Los Angeles County Flood Control District
P.O. Box 1460
Alhambra, California 91802-1460

Prepared by

BonTerra Consulting
225 South Lake Avenue, Suite 1000
Pasadena, California 91101
T: (626) 351-2000 F: (626) 351-2030

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SECTION 1.0 EXECUTIVE SUMMARY

The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects requiring discretionary approval, consider the environmental consequences of such projects. An Initial Study/Mitigated Negative Declaration (IS/MND) is a public document designed to provide the public, responsible/trustee agencies, and other local and State governmental agencies with an analysis of the potential environmental consequences of Project implementation. This IS/MND has been prepared in accordance with CEQA and the State CEQA Guidelines for the Big Tujunga Reservoir Sediment Removal Project (Project).

The Los Angeles County Flood Control District (LACFCD), as lead agency, has authorized the preparation of this IS/MND pursuant to CEQA. The IS/MND indicates that, while the Project would have environmental impacts, modifications and/or mitigation measures have been incorporated into the Project to reduce its potentially adverse impacts to levels considered less than significant (State CEQA Guidelines §15070).

This Executive Summary presents a brief overview of the proposed Project; a tabular summary of the potential environmental effects of the Project; and the recommended mitigation program that would reduce potential impacts to a less than significant level. The reader is referred to the full text of this IS/MND and the technical appendices for a complete description and analysis of the potential environmental effects of the Project.

1.1 PROJECT DESCRIPTION SUMMARY

The proposed Project involves the removal of sediment from the Big Tujunga Reservoir (BTR) and placement of the sediment in the adjacent Maple Canyon Sediment Placement Site (SPS), which is located approximately 1.8 miles (when traveling via existing access roads) from the plunge pool of BTR to the upper reach of Maple Canyon SPS. The Project does not involve new construction, expansion or alteration of the BTR, but only involves sediment removal to restore capacity to the BTR and to allow it to adequately perform its main functions of flood control, debris flow reduction, and water conservation.

Maple Canyon SPS can accommodate approximately 4.4 million cubic yards (mcy) of additional sediment, which would bring the SPS to its ultimate planned sediment capacity. Currently, BTR contains approximately 2.0 mcy of sediment, which would be removed for the proposed Project. However, future storms have a potential to deposit additional sediment into BTR prior to the proposed Project implementation or during the storm seasons of the anticipated sediment removal period. Therefore, the Project has the potential to remove up to 4.4 mcy of sediment from BTR, which equates to the remaining capacity for sediment placement within Maple Canyon SPS. The actual amount of sediment removal would depend on the amount of rainfall and sediment deposition in coming years. It is anticipated that sediment removal could be accomplished within five years, but depending on the rate of flows into BTR; the volume of sediment to be removed; and the rate of removal by the LACFCD's Contractor, more time may be required.

Prior to the excavation of the accumulated sediment from BTR, the reservoir must be dewatered. All sediment removal operations that would occur within BTR—including dewatering, sediment removal activities, and equipment set-up and break-down—would be conducted annually from approximately April 16 to October 14 (i.e., the non-storm season). During dewatering, water held behind the Dam structure would be drained through the Dam valves to the maximum extent possible, and the remaining water would be discharged by mechanical pumping and/or through the hydraulic slide gate (once sediment has been removed below the level of the slide gate). During sediment removal activities during the non-storm season only, flows into BTR would

bypass the work area through a High Density Polyethylene (HDPE) pipeline that conveys inflow from the upstream reservoir, through the Dam's riser/penstock/valve, and outletting around the transition point between the plunge pool and the beginning of Big Tujunga Creek. The bypass pipeline would reduce the water content in the sediment to be removed from BTR and result in an inflow equal to outflow during the non-storm season, reflecting the non-storm season natural creek flow conditions.

Once the dewatering is complete and the bypass line is fully operational, sediment removal activities would begin. The excavation and transport of sediment from the BTR to Maple Canyon SPS via standard hauling trucks would be the most economical and proven method for sediment removal at BTR. However, the LACFCD has committed to designing and implementing the Project in an environmentally sensitive manner by minimizing air quality impacts through two alternative transport methods: (1) Low Emission Trucking Option or (2) Conveyor Belt System Option. Both of these potential sediment removal options would reduce air quality emissions when compared to typical sediment removal activities using standard hauling trucks and/or standard off-road equipment. The determination about which option will ultimately be selected for the Project would be made by the LACFCD's Contractor. Both options would reduce the need for mitigation measures and would ensure that all Project-related environmental impacts would be less than significant.

- If the Low Emission Trucking Option is selected, the LACFCD's Contractor would pave approximately 2 miles of currently unpaved haul routes (with the exception of existing access roads behind the Dam structure, which would be repaired to restore access to the reservoir bottom) to comply with SCAQMD thresholds for particulate matter (PM10). Additionally, the movement of sediment from BTR to Maple Canyon SPS would be implemented using low-emission vehicles (i.e., Tier 3 or better) for all off-road equipment, or 2010 or newer engines for all on-road trucks.
- If the Conveyor Belt System Option is selected, the LACFCD's Contractor would install a conveyor belt to carry the sediment from BTR to Maple Canyon SPS. This conveyor belt system would begin within BTR, cross over Big Tujunga Canyon Road, and deposit sediment into Maple Canyon SPS. Heavy equipment would be operational within BTR and Maple Canyon SPS for sediment excavation and placement, but no hauling trucks would be required for sediment transport to Maple Canyon SPS.

Other Project-related activities conducted outside the reservoir, including movement of the re-use material stockpile, would occur from approximately October 15 to April 15 (storm season). If encountered during sediment excavation, large rocks would be set aside and processed/crushed in the reservoir. Some material suitable for re-use would then be temporarily placed at an on-site stockpile for subsequent transport to aggregate processors or other approved sites permitted to accept/process such materials for beneficial reuse. During the storm season, all sediment removal and bypass equipment would be removed from BTR, and normal operations would resume. Therefore, from approximately October 15 to April 15 during each year of Project activity, there would be no sediment removal activities occurring within BTR and it would continue to perform its main functions of flood control, debris flow reduction, and water conservation.

The closure of Maple Canyon SPS is considered to be a part of the proposed Project, as sediment removal activities from BTR have the potential to fill the remaining capacity (i.e., 4.4 mcy) at Maple Canyon SPS. These closure activities are set forth in the *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance Document* and include a 5-year revegetation monitoring program; efforts to improve the visual aspects of the site upon closure of Maple Canyon SPS, including removal of irrigation and water tanks; and removal of the asphalt covering of the access road.

1.2 ORGANIZATION OF THE IS/MND

This IS/MND is organized into the following sections:

Section 1, Executive Summary: This section provides a summary of the Project description, Project impacts, and mitigation measures (MMs) required to reduce any potentially significant impacts to less than significant levels

Section 2, Introduction and Environmental Setting: This section provides an introduction to the IS/MND process; a brief summary of relevant previous CEQA/National Environmental Policy Act (NEPA) documents; an outline of the IS/MND organization; and a description of the Project location and existing environmental setting of the Project area.

Section 3, Project Description: This section provides the proposed Project description (i.e., sediment removal and placement activities).

Section 4, Environmental Checklist Form and Assessment: The completed CEQA checklist form provides an overview of the potential impacts that may result from proposed Project implementation. The environmental checklist form also includes "mandatory findings of significance", per CEQA requirements. This section contains the analysis of environmental impacts identified in the environmental checklist and identifies mitigation measures to eliminate potential significant effects or reduce them to a less than significant level.

Section 5, Document Preparers and Contributors: This section includes a list of those persons who participated in writing this document.

Section 6, References: This section identifies the references used in preparation of the IS/MND.

1.3 SUMMARY OF ENVIRONMENTAL IMPACTS

The analysis in Section 4.0 of this IS/MND evaluates the impacts associated with Project implementation under both sediment conveyance options: the Low Emission Trucking Option and the Conveyor Belt System Option. The Project Design Features (PDF) associated with sediment removal from BTR and placement within Maple Canyon SPS are summarized below. Due to the PDFs and compliance with Regulatory Requirements (RRs), the Project would have no impact or less than significant impacts on Aesthetics, Agriculture and Forest Resources, Greenhouse Gas Emissions, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, and Utilities and Service Systems.

The LACFCD will confirm that these PDFs and RRs are included in the Contractor Specifications, as appropriate, and verified as part of the Mitigation Monitoring Plan. These PDFs and RRs shall be implemented to the satisfaction of the LACFCD and are listed below.

1.3.1 PROJECT DESIGN FEATURES

Project Design Features – General

PDF AES-1 The LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document sets forth a plan for the fill placement and ultimate closure of Maple Canyon SPS. This plan regulates revegetation activities after completion of sediment placement in order to restore biological functions to the hillsides, to reduce visual impacts, and to control erosion at the SPS. The Plan requires the application of locally collected native seed mix

(i.e. seeds (or plantings) from local sources within the watershed or within ten miles of the mitigation site, unless otherwise approved by the USFS) and installation of container stock plants in all areas where vegetation has been removed and where sediment has been placed. The desired result of the revegetation effort is a survival rate of 75 to 100 trees and shrubs per acre at the end of five years from planting of container stock. This Plan requires the LACFCD to provide annual monitoring reports to the USFS to ensure the success of the revegetation efforts. Once plant growth has fully stabilized after the five year growing period, steps will be taken to enhance the visual aspects of Maple Canyon SPS from the manmade improvements on the site; including but not limited to removal of all irrigation and supporting water tanks infrastructure, as well as removal of the asphalt covering the access road.

PDF AQ-1 If the Low Emission Trucking Option is selected, daily hours of work would be scheduled to occur 8 hours per day of equipment activity (assuming approximately 400 round-trip trucks trips per workday (i.e., an average of 50 trucks per hour over an 8-hour workday). If work proceeds slower on some days than others, the 8-hour workday may be extended; however, the work would be limited to approximately 400 round-trip truck trips within a given day.

PDF AQ-2 If the Low Emission Trucking Option is selected, the LACFCD shall require that either: (1) All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 3 or better off-road emissions standards; or (2) All on-road diesel haul trucks shall have 2010 or newer engines. The LACFCD's Contractor shall provide a copy of each unit's certified Tier and/or engine specification to the LACFCD at the time of mobilization of each applicable unit of equipment.

PDF AQ-3 If the Low Emission Trucking Option is selected, the LACFCD shall ensure that all haul roads are paved, with the exception of the 0.33-mile portion of the route across Big Tujunga Reservoir, prior to the start of sediment removal activities.

PDF BIO-1 In order to avoid direct impacts on the arroyo toad and its critical habitat, the Project's sediment removal boundary has been reduced in the upper reach of the reservoir. No sediment removal activities shall occur within the designated critical habitat boundary.

PDF BIO-2 In order to minimize impacts on the Santa Ana sucker and its critical habitat, Dam releases for Project activities within the non-storm season (April 16 to October 14) shall not exceed 180 cubic feet per second (cfs), and Dam operations shall 'ramp' flows (i.e., step-wise increases and decreases) to mimic natural stream hydrology.

PDF BIO-3 The LACFCD's Contractor shall install water quality filtration best management practices (BMPs) between the plunge pool and the mouth of Big Tujunga Creek. These BMPs—such as sand/gravel bags, silt fencing and/or other filtering devices—shall be placed to prevent sediment from exiting the plunge pool into downstream waters. Once installed, the BMPs would allow the plunge pool to serve as a large sedimentation basin in which waters released from the Dam would be temporarily retained to allow for sediments to drop to the bottom of the pool. These BMPs would be designed with the goal of incorporating every reasonable effort to prevent or limit the flow of disturbed sediment and particulate matter downstream during Project activities.

PDF BIO-4 Though not anticipated, if any coast live oak tree branches or roots need to be trimmed or maintained during Project implementation, an arborist shall be consulted to obtain recommendations that would avoid adversely affecting the health and viability of the oak trees. Any work performed on coast live oak trees shall be done under the direction of a certified Arborist.

PDF HYD-1 Flows into BTR will bypass the work area through a High Density Polyethylene (HDPE) pipeline that conveys inflow from the upstream reservoir, through the Dam's riser/penstock/valve, and outletting around the transition point between the plunge pool and the beginning of Big Tujunga Creek. The bypass pipeline will reduce the water content in the sediment to be removed from BTR and result in an inflow equal to outflow during the non-storm season, reflecting the non-storm season natural creek flow conditions.

PDF HYD-2 The existing vehicular access road, debris basins, underground drainage pipes and surface drainage facilities (e.g., gutters, inlets, and surface drains) installed throughout Maple Canyon SPS during the previous sediment placement activities would be extended into new fill areas of Maple Canyon SPS to prevent erosion and to facilitate drainage within Maple Canyon SPS. All facilities will be constructed in compliance with the LACDPW Hydraulic Design Manual standards.

1.3.2 REGULATORY REQUIREMENTS

RR AQ-1 The South Coast Air Quality Management District's (SCAQMD's) Rule 403, Fugitive Dust, requires the implementation of best available control measures (BACM) for any activity or man-made condition capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement. The BACMs include stabilizing soil; watering surface soils and crushed materials; covering hauls or providing freeboard; preventing track-out; and limiting vehicle speeds and wind barriers, among others. Compliance with this rule will result in a reduction in short-term particulate pollutant emissions. During construction and sediment removal activities, Project contractors shall comply with SCAQMD Rule 403. This RR shall be included by the LACFCD as notes in the Contractor Specifications.

RR BIO-1 The LACFCD shall obtain all necessary permits for impacts to "waters of the United States" and "waters of the State" from applicable resource agencies, including the United States Army Corps of Engineers (USACE), the Los Angeles Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW).

RR CUL-1 If human remains are encountered during excavation activities, all work shall halt in the immediate vicinity of the discovery and the County Coroner shall be notified (*California Public Resources Code* §5097.98). The Coroner shall determine whether the remains are of forensic interest. If the Coroner, with the aid of the County-approved Archaeologist, determines that the remains are prehistoric, s/he will contact the Native American Heritage Commission (NAHC). The NAHC shall be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the *California Health and Safety Code.* The MLD shall make his/her recommendation within 48 hours of being granted access to the site.

The MLD's recommendation shall be followed if feasible, and may include scientific removal and non-destructive analysis of the human remains and any items associated with Native American burials (*California Health and Safety Code* §7050.5). If the landowner rejects the MLD's recommendations, the landowner shall rebury the remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (*California Public Resources Code* §5097.98).

RR GEO-1 Grading, excavation, and earthwork shall comply with the County Code (Appendix J of Title 26, Building Code), as they relate to excavations; fills; drainage and terracing; slope planting and erosion control; and other pertinent standards to prevent general hazards and flood hazards on and near areas proposed for ground disturbance.

RR HAZ-1 Activities at Big Tujunga Reservoir and Maple Canyon SPS shall comply with existing federal, State, and local regulations regarding hazardous material use, storage, disposal, and transport to prevent Project-related risks to public health and safety. All on-site generated waste that meets hazardous waste criteria shall be stored, manifested, transported, and disposed of in accordance with the *California Code of Regulations* (Title 22) and in a manner to the satisfaction of the local Certified Unified Program Agency (CUPA) and the U.S. Forest Service.

RR HAZ-2 If the Conveyor Belt System Option is chosen, it shall be installed and operated in accordance with Section 7-10.4.1, Safety Orders, of the 2009 Standard Specifications for Public Works Construction (Greenbook).

RR HAZ-3 The temporary extension of electrical power lines from existing nearby power lines or from the power lines at the Dam to Big Tujunga Reservoir shall be made in compliance with applicable regulations of the Uniform Fire Code and in coordination with Southern California Edison, as necessary.

RR HYD-1 Prior to the start of sediment removal activities, the LACFCD shall file a Permit Registration Document (PRD) with the State Water Resources Control Board (SWRCB) in order to obtain coverage under that National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with the Construction and Land Disturbance Activities (Order No 2009-009-DWQ, NPDES No. CAS000002) or the latest approved general permit. This permit is required for construction activities (including demolition, clearing, grading, and excavation) and other land disturbance activities that result in the disturbance of one acre or more of total land area. The PRD consists of a Notice of Intent (NOI); Risk Assessment; Site Map; Storm Water Pollution Prevention Program (SWPPP); annual fee; and a signed certification statement. Pursuant to permit requirements, the Contractor shall develop and incorporate Best Management Practices (BMPs) for reducing or eliminating construction-related pollutants in site runoff.

RR HYD-2 Discharges are regulated under SWRCB Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification", which requires compliance with all conditions of the Water Quality Certification issued by the Regional Water Quality Control Board (RWQCB). Compliance with the Water Quality Certification issued by the RWQCB would ensure that any discharge from the Project does not conflict with the applicable provisions of Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, or any other applicable requirements of State law.

1.3.3 MITIGATION MEASURES

Prior to mitigation, Project implementation would result in potentially significant impacts to Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards/Hazardous Materials, Hydrology/Water Quality, Land Use and Planning, and Traffic/Transportation. However, mitigation measures have been developed to avoid or reduce these impacts to levels considered less than significant. These MMs would be included in the Contractor Specifications, as appropriate, and verified as part of the Mitigation Monitoring and Reporting Program (MMRP). These MMs shall be implemented to the satisfaction of the LACFCD and are listed below in Table ES-1 along with the assigned responsibility for implementation and compliance monitoring.

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TABLE 1-1
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
Air Quality				
MM AQ-1	The unpaved approximate 0.33-mile portion of the access road that traverses through the reservoir shall be consistently maintained in a damp state to ensure dust reductions. The LACFCD shall prepare and implement an Exposed Soils Watering Plan, which shall establish a watering regime that ensures adequate soil saturation along the unpaved portion of the access route. A monitor shall be present on all days of truck activity on this portion of the access road to assess the dampness of the unpaved access roadway. Water trucks or other watering mechanisms will be available at all times of truck operation. If the monitor sees visible dust or particulate matter in the air caused by truck movement, watering shall occur immediately to stop fugitive dust. The requirement to implement and monitor the effectiveness of the Exposed Soils Watering Plan shall be included in the LACFCD's Contractor specifications.	Daily throughout all trucking activity within the reservoir	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under the Low Emission Trucking Option, sediment removal activities have the potential to exceed the SCAQMD threshold for particulate matter.
Biological Resources				
MM BIO-1	If the USFWS determines that there is a potential effect on the arroyo toad and/or its critical habitat, the LACFCD, in consultation with the USACE and USFS, shall conduct an informal or formal consultation in accordance with Section 7 of the Endangered Species Act. The LACFCD/USACE/USFS shall obtain written concurrence from the USFWS that the avoidance and minimization measures listed below are considered suitable by the resource agencies. A. A one-visit pre-construction focused survey shall be conducted for arroyo toad, eggs, and tadpoles within seven days prior to dewatering of the reservoir each year. The survey shall include both a diurnal and a nocturnal component and shall be conducted up to one kilometer upstream of the project limits of disturbance by a qualified Biologist (one with experience in identifying arroyo toads in	Prior to the initiation of dewatering or sediment removal activities	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact the arroyo toad.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
all life stages). If eggs or tadpoles are observed within the work area, dewatering shall be delayed until approval is obtained from the USFWS to relocate the eggs/tadpoles out of the work area. An Arroyo Toad Relocation Plan (ATRP) shall be prepared to describe the methodology to be used to handle/move the adults, eggs, and tadpoles and to describe the relocation site. The relocation site shall mimic site conditions as closely as possible; adequate food resources for the toad adults/tadpoles and shelter from predators shall be present at the relocation site. The ATRP shall describe any follow up monitoring necessary and additional contingency measures for management of the relocation site until tadpoles have metamorphosed into adults. The USFWS shall approve the ATRP prior to relocating any arroyo toad adults/eggs/tadpoles and prior to dewatering the reservoir (beyond normal Dam operations). If no arroyo toads are observed, dewatering can proceed as planned. B. No sediment removal activities shall take place within the arroyo toad critical habitat area (PDF BIO-1). The critical habitat boundary shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an adequate boundary for construction work. Signs shall be posted to indicate that the area upstream is an "Environmentally Sensitive Area" and that no work activities shall occur upstream of the fencing. The Biological Monitor shall periodically check the fencing/signage to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor if the fencing/ signage needs to be repaired. C. If arroyo toads are observed upstream of the work area during pre-construction surveys, exclusionary			

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
fencing shall be installed at the sediment removal boundary to prevent arroyo toads upstream of the Project from entering the construction area. The fencing plan shall be approved by the USFWS. The exclusionary fencing shall consist of silt fencing, buried to one-foot deep and installed with no gaps in the fencing; alternate fencing shall be approved by the USFWS. The fencing shall extend across Big Tujunga Creek around the perimeter of the sediment removal area or perpendicular to the creek up to 80 feet in elevation from the creek, or as otherwise approved by the USFWS. Fencing shall be installed under the supervision of a Biological Monitor in order to ensure that no arroyo toads or their eggs/tadpoles are impacted during installation of the fence. Pre-construction surveys shall be conducted for three consecutive nights after the exclusionary fencing is installed and prior to the commencement of sediment removal activities each year. Any toads (or other special status species) observed within the impact boundary shall be relocated by a qualified Biologist (one approved by the USFWS to handle arroyo toad/special status species) upstream beyond the impact boundary according to the USFWS-approved ATRP. D. A qualified Biological Monitor shall conduct periodic construction monitoring visits throughout sediment removal activities (April through October) to ensure that species protective measures are in place. The Biological Monitor shall also monitor any relocated eggs/tadpoles and shall notify the USFWS if any contingency measures are necessary at the relocation site. Monitoring reports describing construction activities as they pertain to the arroyo toad and arroyo toad critical habitat area shall be submitted to the USFWS.			

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
MM BIO-2	Prior to the initiation of sediment removal activities or paving of the haul route, the LACFCD shall retain a qualified Biologist to conduct a protocol focused survey for the arroyo toad along Big Tujunga Creek downstream of the plunge pool to one kilometer beyond the downstream boundary of the access roads. If no arroyo toads are found downstream of the reservoir, no further mitigation would be required for arroyo toad downstream of the reservoir. If arroyo toads are observed during the surveys, the USFWS shall be notified and exclusionary fencing shall be installed (see MM BIO-1) along the entire length of the haul route or until the haul route occurs more than 80 feet in elevation from the wash unless otherwise agreed to by the USFWS. Monitoring requirements listed in MM BIO-1 shall apply to the access roads areas as well. If surveys are not conducted prior to construction, the area shall be presumed occupied and all avoidance and exclusionary measures described shall apply.	Prior to the initiation of sediment removal activities or paving of the haul route, each year	LACFCD	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact the arroyo toad.
MM BIO-3	If the USFWS determines that there is a potential effect on the Santa Ana sucker and/or its critical habitat, the LACFCD, in consultation with the USACE and USFS, shall conduct an informal or formal consultation in accordance with Section 7 of the Endangered Species Act. The LACFCD/USACE/USFS shall obtain written concurrence from the USFWS that the avoidance and minimization measures listed below are considered suitable by the resource agencies. A. No construction activities shall take place downstream of the plunge pool boundary within the Santa Ana sucker critical habitat area, unless additional water quality filtration BMPs are implemented to satisfy permitting requirements from the USACE, RWQCB, and/or CDFW. Filtration BMPs—such as sand/gravel bags, silt fencing and/or other filtering devices—shall be placed between the plunge pool and Big Tujunga Creek to	Prior to initiation of dewatering or sediment removal activities	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact the Santa Ana sucker.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
prevent sediment from exiting the plunge pool into downstream waters (PDF BIO-3). Signs shall be posted to indicate that the area downstream is an "Environmentally Sensitive Area" and that no work activities shall occur downstream of the BMPs. The Biological Monitor shall periodically check the fencing/signage to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor if the fencing/ signage needs to be repaired. B. A qualified Biological Monitor (one with experience with the Santa Ana sucker) shall conduct periodic construction monitoring visits throughout stream bypass installation, dewatering and sediment removal activities each season to visually monitor the condition of the habitat (flow and depth of water through Big Tujunga Creek), to ensure that species protective measures are in place, and to confirm that no release of sediment is observed downstream of the plunge pool. Monitoring reports describing construction activities as they pertain to the Santa Ana sucker and Santa Ana sucker critical habitat area shall be submitted to the USFWS. C. If the Biological Monitor notices that water levels in the creek decrease to shallow conditions or that isolated pools develop as a result of natural rainfall conditions, the Biological Monitor shall notify the USFWS and USFS of the conditions to allow the agencies to consider relocating fish to avoid potential mortality. Because this would be a result of weather conditions and not a result of the Project, the LACFCD shall not be responsible for relocating the fish (if needed), but shall cooperate with agency efforts to rescue fish.			

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
MM BIO-4	Prior to the initiation of dewatering the plunge pool each year (approximately late April), a pre-construction survey (seining) for arroyo chub shall be conducted in the plunge pool by a qualified Biologist with experience with native fish survey techniques. The purpose of the surveys shall be to capture any arroyo chubs within the plunge pool. If arroyo chubs are captured during the survey, they shall be relocated to a suitable site along Big Tujunga Creek downstream of the plunge pool. Prior to relocating any arroyo chubs, the USFS and CDFW shall approve the potential relocation site(s) and methods for transferring the fish from the plunge pool to the relocation site(s). Additionally, a qualified Biologist shall be present during dewatering of the plunge pool to ensure no native fish are stranded. If any native fish are observed during the monitoring, they shall be captured by the Biologist through seining (or use of other appropriate nets) and released at the relocation site. A Letter Report shall be prepared to document the results of the pre-construction surveys and monitoring and shall be provided to the USFS and CDFW.	Prior to the initiation of dewatering the plunge pool each year	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact the special status fish species within the plunge pool.
MM BIO-5	Prior to the initiation of dewatering/installation of the bypass line each year (March or April, depending on water levels in the reservoir), pre-construction trapping for the Pacific pond turtle shall be conducted by a qualified Biologist. Concurrently with the trapping effort, the Biologist shall also visually search for two-striped garter snakes in the Project impact area. If any pond turtles or two-striped garter snakes are captured, they shall be relocated to a suitable site along Big Tujunga Creek upstream of the construction area or along Big Tujunga Creek downstream of the downstream access road boundary. Prior to relocating any pond turtles or two-striped garter snakes, the USFS and CDFW shall approve the potential relocation site(s) and methods for transfer to the relocation site(s). Additionally, a qualified Biologist shall be present during	Prior to the initiation of dewatering/installation of the bypass line each year (March or April, depending on water levels in the reservoir)	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact the Pacific pond turtle within the reservoir and plunge pool.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
	dewatering of the plunge pool to ensure no native turtles or two-striped garter snakes are stranded. If any native turtles or two-striped garter snakes are observed during the monitoring, they shall be captured by the Biologist and released at the relocation site. A Letter Report shall be prepared to document the results of the pre-construction surveys and monitoring and shall be provided to the USFS and CDFW.			
MM BIO-6	Prior to the initiation of road paving and sediment removal each year, special status plant locations within 100 feet of the Project limits shall be clearly marked using lath and flagging, orange snow fencing, or other suitable fencing to provide an adequate boundary for construction work. Signs shall be posted to indicate the area as an "Environmentally Sensitive Area" and shall state that no work activities shall occur within the fencing. The Biological Monitor shall periodically check the fencing/signage to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor if the fencing/signage needs to be repaired.	Prior to the initiation of road paving and sediment removal, each year	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under the Low Emission Trucking Option, Project implementation has the potential to impact special status plant species located near the access roads.
MM BIO-7	Prior to initiation of sediment removal activities, the LACFCD shall obtain all necessary permits to impact USACE and CDFW jurisdictional areas. Mitigation for the loss of jurisdictional resources shall be negotiated with the resource agencies during the regulatory permitting process and shall ensure mitigation to compensate for permanent impacts on jurisdictional resources is equivalent or superior to biological functions and values impacted by the Project. Potential mitigation options shall, at a minimum, include payment of an in-lieu mitigation fee to a mitigation bank or regional riparian enhancement program (e.g., invasive plant or wildlife species removal).	Prior to initiation of sediment removal activities	LACFCD	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact jurisdictional resources.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
MM BIO-8	The Project shall be conducted in compliance with the conditions set forth in the Migratory Bird Treaty Act and *California Fish and Game Code* and with methods approved by USFS and CDFW to protect active bird/raptor nests. The nature of the Project requires that work would be initiated during the breeding season for nesting birds (March 15–September 15) and nesting raptors (February 1–June 30). In order to avoid direct impacts on active nests, a pre-construction survey shall be conducted by a qualified Biologist for nesting birds and/or raptors within 7 days prior to clearing of any vegetation or any work near existing structures (i.e., within 50 feet for nesting birds and within 500 feet for nesting raptors). If the Biologist does not find any active nests within or immediately adjacent to the impact area, the vegetation clearing/construction work shall be allowed to proceed. If the Biologist finds an active nest within or immediately adjacent to the construction area and determines that the nest may be impacted or breeding activities substantially disrupted, the Biologist shall delineate an appropriate buffer zone around the nest depending on the sensitivity of the species and the nature of the construction activity. Any nest found during survey efforts shall be mapped on the construction plans. The active nest shall be protected until nesting activity has ended. To protect any nest site, the following restrictions to construction activities shall be required until nests are no longer active, as determined by a qualified Biologist: (1) clearing limits shall be established within a buffer around any occupied nest (the buffer shall be 25–100 feet for nesting birds and 300–500 feet for nesting raptors), unless otherwise determined by a qualified Biologist and (2) access and surveying shall be restricted within the buffer of any occupied nest, unless otherwise determined by a qualified Biologist. Encroachment into the buffer area around a known nest shall only be allowed if the	During the breeding season for nesting birds (March 15–September 15) and nesting raptors (February 1–June 30), surveys shall occur within 7 days prior to clearing of any vegetation or any work near existing structures (i.e., within 50 feet for nesting birds and within 500 feet for nesting raptors)	LACFCD	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact nesting birds and raptors.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
	Biologist determines that the proposed activity would not disturb the nest occupants. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest or the nest has failed.			
Cultural Resources				
MM CUL-1	Should archaeological resources be found during ground-disturbing activities for the Project, an Archaeologist shall be hired to first determine whether it is a "unique archaeological resource" pursuant to Section 21083.2(g) of the *California Public Resources Code* (PRC) or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines. If the archaeological resource is determined to be a "unique archaeological resource" or a "historical resource", the Archaeologist shall formulate a mitigation plan in consultation with the LACFCD that satisfies the requirements of the above-referenced sections. If the Archaeologist determines that the archaeological resource is not a "unique archaeological resource" or "historical resource", s/he may record the site and submit the recordation form to the California Historic Resources Information System at the South Central Coastal Information Center at California State University, Fullerton.	Ongoing during all sediment removal activities and any ground-disturbing activities, each year	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to impact archaeological resources.
Hazards and Hazardous Material				
MM HAZ-1	The LACFCD shall require in the Contractor's Specifications that the following measures be implemented during proposed sediment removal and placement activities at BTR and Maple Canyon SPS: • Trucks and equipment entering BTR shall be inspected to be free from oil, gasoline, or other vehicle fluid leaks. • Equipment fueling areas shall be located at least 50 feet from water bodies, drainages and areas with riparian vegetation, including dewatered	Ongoing during all sediment removal and sediment placement activities, each year	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to result in the accidental release of hazardous materials.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
portions of BTR. • All refueling activities shall be conducted in accordance with the refueling requirements identified in the LACDPW BMP Manual. • Hazardous materials shall not be stored within the limits of BTR or near drainages. Instead, the hazardous materials shall be stored within the lower staging area, away from BTR, and shall be removed prior to the start of the storm season each year. • All hazardous material spills and contaminated soils shall be excavated from BTR, or covered if outside the reservoir limits, immediately upon discovery to minimize soil and water contamination and the potential of wildlife being poisoned or otherwise harmed. • The contractor shall maintain hazardous materials spill control, containment, and cleanup kits of adequate size and materials for potential accidental instream spills and releases.			
MM HAZ-2 If the LACFCD proceeds with the Conveyor Belt System Option, the LACFCD shall require that calculations and structural details for the conveyor belt be prepared by a Civil or Structural Engineer currently registered in the State of California, and the designs shall be reviewed and approved by the LACFCD prior to commencement of any sediment removal activities. The conveyor belt system shall be designed in accordance with all applicable seismic standards and shall be enclosed along the portion of the system that crosses Big Tujunga Canyon Road to prevent falling rocks, sediment, or debris from posing a hazard to workers or vehicular traffic. The minimum vertical clearance for vehicles passing under the conveyor belt at Big Tujunga Canyon Road shall be 17 feet tall to ensure adequate fire and emergency	Prior to commencement of any sediment removal activities in the first year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under the Conveyor Belt Option, Project implementation has the potential to result in hazards from falling soils/rocks/debris from the conveyor belt crossing over Big Tujunga Canyon Road.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
	vehicular access. The conveyor belt system shall be located along one side of the on-site access road to ensure the safe passage of vehicular traffic on the access roads between BTR and Maple Canyon SPS.			
MM HAZ-3	Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall require that the Contractor prepare a Site-Specific Health and Safety Plan for review and approval. The Plan would be implemented throughout the sediment removal and sediment placement activities. The Site-Specific Health and Safety Plan shall be prepared in accordance with the Occupational Safety and Health Administration's (OSHA's) Safety and Health Regulations for Construction (29 *Code of Federal Regulations* 1926) and include, at a minimum, the following: • A Site Health and Safety Officer. • An Access and Evacuation Plan. • A Conveyor Safety Plan to ensure safety of the workers and the public around the conveyor belt system and Maple Canyon SPS site both during working and non-working hours. • Identification of site hazards for the construction Project with a Job Hazard Analysis included for each major construction task, including response in the event of an earthquake. • A Site Specific Health and Safety Plan, which shall be signed and stamped by an American Board of Industrial Hygiene (ABIH)-Certified Industrial Hygienist (CIH) or Safety Professional (CSP) certified by the Board of Certified Safety Professionals.	Prior to commencement of any sediment removal activities in the first year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to result in the hazards to employees.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
MM HAZ-4 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall require that the Contractor prepare an Emergency Procedures-Fall Protection Program developed specifically for the Project site where the construction work shall be performed. The Fall Protection Program shall be current and in accordance with Section 1926.500 of the Occupational Safety and Health Administration's (OSHA's) Safety and Health Regulations for Construction and the *California Code of Regulations* (Title 8, Article 24, §1669 and 1670). The Plan shall identify for following: • Type of equipment. • Inspection procedures and inspection intervals. • Location(s) where fall protection equipment shall be used. • Documentation that site personnel have been trained in the proper use of the fall protection equipment.	Prior to commencement of any sediment removal activities in the first year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to result in the hazards to employees.
MM HAZ-5 Prior to commencement of any sediment removal activities in the first year of Project implementation and in compliance with Article 87 of the California Fire Code and National Fire Protection Association Standard No. 1, the LACFCD shall prepare a Fire Protection Plan that includes emergency reporting procedures; emergency notification, evacuation, and/or relocation of all persons on site; procedures for "hot work" operations; management of hazardous materials and removal of combustible debris; maintenance of emergency access roads; identification of exit routes and assembly areas; and identification of fire apparatus. The Fire Protection Plan shall be provided to the USFS for review and approval prior to commencement of any sediment removal activities.	Prior to commencement of any sediment removal activities in the first year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to result in the increased risks of wildland fires.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
Land Use and Planning			
MM USE-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall submit a complete application to the U.S. Forest Service for the issuance of a Special Use Permit (SUP) for the continued operation of Maple Canyon Sediment Placement Site for the placement of sediment removed from Big Tujunga Reservoir. Prior to commencement of sediment removal activities, the application and all supporting technical information, including the LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document, shall be completed to the satisfaction of the USFS.	Prior to commencement of any sediment removal activities in the first year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	The LACFCD is not permitted by the USFS to deposit sediment within Maple Canyon SPS.
Transportation/Traffic			
MM TRA-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall require the Contractor to prepare a Traffic Control Plan, which shall be prepared and implemented in compliance with the California Manual for Uniform Traffic Control Devices (MUTCD) that addresses potential traffic hazards and impacts to traffic congestion related to Project implementation. The Plan shall include, but not be limited to, the following requirements: (1) a flag person(s) shall be stationed at the intersection of the Project access road and Big Tujunga Canyon Road during all trucking operations under the Low Emissions Truck Option; (2) truck traffic shall be managed such that no queuing shall occur on Big Tujunga Canyon Road or along the ramps of Interstate (I) 210, including the Sunland Boulevard interchange, during transport of gravel from the Project to Sunland; (3) the construction crew shall be required to attend traffic safety meetings to ensure that the Plan is fully implemented; (4) periodic monitoring of trucking operations along affected I-210 ramps shall occur to confirm that no queuing occurs: (5) requirements shall	Prior to commencement of any sediment removal activities in the first year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Under both the Low Emission Trucking Option and the Conveyor Belt Option, Project implementation has the potential to result in increased traffic hazards associated with truck traffic.

TABLE 1-1 (Continued)
MITIGATION MEASURES TO AVOID
POTENTIALLY SIGNIFICANT ENVIRONMENAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced by Mitigation
be set for the design and use of traffic signs, driveway access, barricades, and other measures to maintain public convenience and safety for motorists, cyclists, pedestrians, and construction workers; and (6) the coordination protocol shall be confirmed with law enforcement and other emergency agencies, as necessary.			

SECTION 2.0 INTRODUCTION AND ENVIRONMENTAL SETTING

2.1 INTRODUCTION

2.1.1 PURPOSE OF THE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

In accordance with the California Environmental Quality Act (CEQA) (*California Public Resources Code* §21000 et seq.) and the State CEQA Guidelines (*California Code of Regulations,* Title 14, §15000 et seq.), this Initial Study (IS) has been prepared as documentation for a Mitigated Negative Declaration (MND) for the proposed Los Angeles County Flood Control District (LACFCD) Big Tujunga Reservoir Sediment Removal Project (Project). This IS/MND includes a description of the proposed Project; location of the Project site; evaluation of the potential environmental impacts of Project implementation; and recommended mitigation measures to lessen or avoid impacts on the environment.

Pursuant to Section 15367 of the State CEQA Guidelines, the LACFCD is the Lead Agency for the Project. The Lead Agency is the public agency that has the principal responsibility for carrying out a project and also has the authority for approval of the Project and its accompanying environmental documentation. In addition to addressing the potential environmental impacts that would result from the proposed Project, this IS/MND serves as the primary environmental document for future activities associated with the Project, including discretionary approvals requested or required for Project implementation.

The LACFCD, as the Lead Agency, has reviewed and revised, as necessary, all submitted drafts and technical studies and has commissioned the preparation of this IS/MND to reflect its independent judgment, including reliance on applicable LACFCD technical personnel and review of all technical subconsultant reports. Data for this IS/MND was obtained from on-site field observations; discussions with affected agencies; review of available technical studies, reports, guidelines, and data; and review of specialized environmental assessments prepared for the Project. The LACFCD has the authority for Project approval and adoption of this IS/MND.

This IS/MND evaluates the potential environmental impacts of Project implementation under both the Low Emission Trucking Option and the Conveyor Belt System Option; it includes significance determinations from the environmental analyses; it identifies project design features (PDFs) and regulatory requirements (RRs) to be incorporated into the Project; and it sets forth mitigation measures (MMs) that will lessen or avoid potentially significant Project impacts on the environment.

2.1.2 PREVIOUS ENVIRONMENTAL DOCUMENTATION

In compliance with the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) was prepared in 1981 for the disposal of sediment removed from the Big Tujunga Reservoir (BTR). The EA evaluated the environmental impacts of the removal of 2.6 million cubic yards (mcy) of sediment from BTR and its placement at either Fusier Canyon, Maple Canyon, or an unspecified off-site location outside the Angeles National Forest. The Record of Decision (ROD) selected the Maple Canyon site for the placement of sediment from BTR. The EA was used by the U.S. Forest Service (USFS) to issue a Special Use Permit (SUP) for use and operation of Maple Canyon Sediment Placement Site (SPS). The EA was also used by the LACFCD for the environmental clearance under CEQA and a Negative Declaration was adopted in 1981 for the cleanout of BTR.

In 1994-95, the LACFCD undertook a sediment cleanout of BTR, resulting in the removal of approximately 1.5 mcy of sediment, which was deposited at Maple Canyon SPS. Since the same activities were proposed as in the 1981 cleanout, the SUP from the USFS was supported by the 1981 NEPA EA, and the LACFCD relied on the same EA for CEQA compliance.

In 2006, an IS/MND and an EA were prepared for the Big Tujunga Dam Seismic Upgrade project, which involved the placement of new concrete on the downstream face of the existing arch dam; armoring of the downstream plunge pool; construction of a permanent access road; and other modifications (e.g., raised parapet walls, dam crest modifications, new elevator, new lighting, valves, and control house). The objective of this seismic upgrade project was to strengthen the Dam, removing the threat of failure during a seismic event. This project involved an informal Section 7 consultation with the U.S. Fish and Wildlife Service that determined the bypass pipeline used during the non-storm season for the project (similar to the one proposed for the Project) would not negatively impact the Santa Ana sucker in waters downstream of the Dam.

Due to changes in existing conditions at the Project site since the 1981 EA, new regulations applicable to the Project since the 1981 EA, and the expiration of the existing LACFCD's SUP issued by the USFS, this IS/MND is being prepared independent of the previous environmental documentation and in accordance with current CEQA regulations. A separate EA is being prepared for the Project to comply with NEPA.

2.1.3 PROJECT APPROVAL

The IS/MND has been submitted to potentially affected agencies. A Notice of Intent to Adopt an MND was published in the Los Angeles Times and San Fernando Valley Sun and is on file at the Los Angeles County Registrar-Recorder/County Clerk in the City of Norwalk. The IS/MND and associated technical reports can be viewed online at www.dpw.lacounty.gov/wrd/Projects/BigTujunga/. Hard copies are available for public review during business hours at the LACDPW Headquarters (900 South Fremont Avenue, 2nd Floor, Alhambra, CA 91803) and at these libraries: La Crescenta Library (2809 Foothill Boulevard, La Crescenta, CA 91214), San Fernando Library (217 North Maclay Avenue, San Fernando, CA 91340), and Sunland Tujunga Library (7771 Foothill Boulevard, Tujunga, CA 91042) during business hours.

In accordance with Section 15073 of the CEQA Guidelines, a Negative Declaration or Mitigated Negative Declaration must be subject to a 30-day public review period when submitted to the State Clearinghouse for review by state agencies. However, the LAFCD has voluntarily established an extended 45-day public review period for this IS/MND, from Monday, May 13, 2013 to Wednesday, June 26, 2013. In reviewing the IS/MND, the reviewer should focus on the sufficiency of the document in identifying and analyzing the potential impacts on the environment and ways in which the potentially significant effects of the proposed Project are avoided or mitigated. Comments or questions, postmarked by 5:00 PM on June 26, 2013, on the IS/MND can be sent in writing by mail to LACFCD at the address below, via email to reservoircleanouts@dpw.lacounty.gov, or by fax to (626) 979-5436. Please include "Big Tujunga Reservoir Sediment Removal Project" in the subject line. Comments can also be mailed to the following address:

Los Angeles County Flood Control District
Attn: Water Resources Division – Reservoir Cleanouts
P.O. Box 1460
Alhambra, CA 91802-1460

A public information open house meeting to discuss the Project will be held on Monday, May 20, 2013 from 6:00 PM to 8:00 PM at the Elk's Lodge, Upstairs Lodge Room (10137 Commerce Ave, Tujunga CA 91042). For more information, please visit the Project website for more information at www.dpw.lacounty.gov/wrd/Projects/BigTujunga/.

In accordance with Section 15074 of the CEQA Guidelines, prior to approving the Project, the Los Angeles County Board of Supervisors (Board), acting as governing body of the LACFCD, will consider the proposed IS/MND together with any comments received during the public review process. The Board will adopt the proposed MND only if it finds that that there is no substantial evidence that the Project will have a significant effect on the environment and that the MND reflects the independent judgment and analysis of the Board.

2.2 ENVIRONMENTAL SETTING

The LACFCD proposes to conduct the Big Tujunga Reservoir Sediment Removal Project, which involves the excavation of sediment within the BTR and the deposition of the sediment in SPS. This section presents a brief overview of the existing conditions within and surrounding the Project site, as well as a brief overview of the Project need and background. The information provided in this section is used as the "baseline" condition from which Project-related impacts are assessed.

2.2.1 PROJECT LOCATION

The Project site is located in Big Tujunga Canyon within the Angeles National Forest (i.e., San Gabriel Mountains), as depicted in Exhibit 2-1, Regional Location and Local Vicinity Map. BTR and Maple Canyon SPS are located within the unincorporated Los Angeles County on lands owned by the USFS.

BTR is located on the west side of Big Tujunga Canyon Road, approximately 4.5 miles north of the La Crescenta-Montrose community and approximately 7.0 miles northeast of the community of Sunland. The Dam structure is approximately 0.7 mile northwest of the Project site's access road connection to Big Tujunga Canyon Road. The Maple Canyon SPS access road extends approximately 1.1 miles in an easterly direction up the terraced hillsides from the entrance gate at Big Tujunga Canyon Road to the top of the existing fill area. Maple Canyon SPS is approximately 1.8 miles (when traveling via existing access roads) from the plunge pool of BTR. BTR and Maple Canyon SPS can be accessed from the southwest in the community of Sunland via Big Tujunga Canyon Road or from the southeast in the City of La Cañada-Flintridge by the Angeles Crest Highway (State Route [SR] 2) to Big Tujunga Canyon Road.

2.2.2 PROJECT BACKGROUND

For centuries, storm waters have periodically swept out of the San Gabriel Mountains into the Los Angeles River and San Gabriel River Basins. Large rain events have historically resulted in extensive property damage and loss of life in Los Angeles County due to extensive flooding. Such a flood occurred after heavy rains in 1914, causing over $10 million in property damage. As a result, the State legislature created the LACFCD in 1915 to reduce flood hazards in the County. The LACFCD is responsible for the operation and maintenance of LACFCD-owned dams and reservoirs, including BTR.

BTR was created with construction of the Big Tujunga Dam in 1930–1931 for the purposes of flood control, debris control, and water conservation along Big Tujunga Creek. BTR controls storm water and debris from a watershed extending over 82 square miles within the San Gabriel

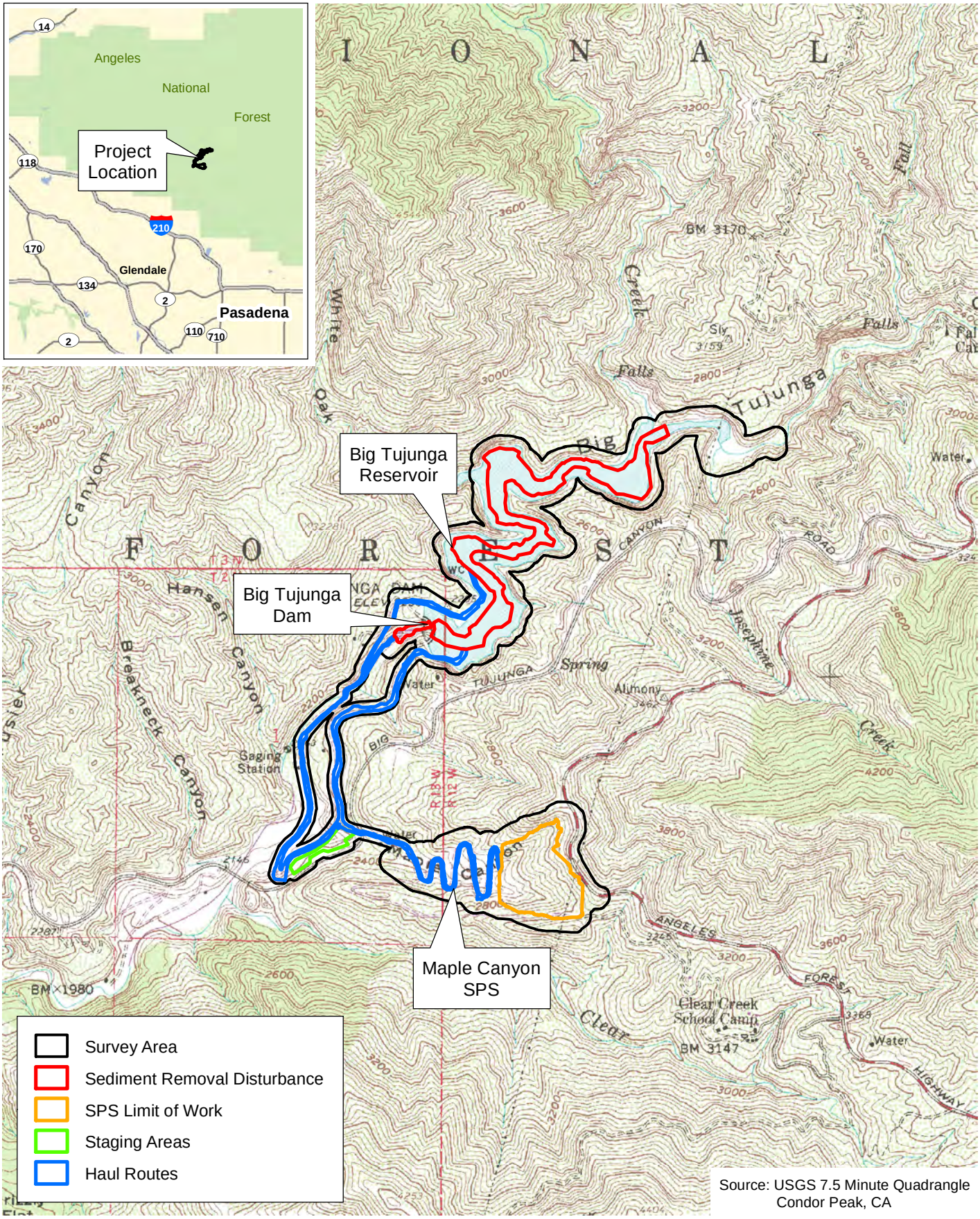
Mountains. BTR is designed to intercept and retain large amounts of water and debris (e.g., rock, mud, sand, vegetation) from upslope areas, while the Dam allows controlled releases of storm waters to pass through to the downstream channel. BTR protects downstream residences, businesses, and infrastructure from potential damage from floodwaters, mudflows, and debris that could rapidly fill and/or damage downstream drainages and flood-control facilities (i.e., storm drain pipes). In order to maintain the capacity and operability of BTR, periodic sediment removal is required.

Since the completion of BTR in 1931, the LACFCD has conducted several sediment removal projects. In order to accommodate sediment generated by a cleanout in 1981, Maple Canyon SPS was approved for use as a debris disposal area (USFS 1981). The 1981 clean-out of BTR resulted in the transfer of approximately 2.6 mcy of sediment and debris to Maple Canyon SPS. The 1994-95 clean-out resulted in the removal of approximately 1.5 mcy of sediment from BTR into Maple Canyon SPS.

The Station Wildfire started on August 26, 2009, in the Angeles National Forest near the USFS ranger station along SR-2, and burned over 160,000 acres before the fire was completely contained on October 16, 2009. Approximately 87 percent of the watershed tributary to the Big Tujunga Dam was affected by this wildfire. A watershed generally takes five years to recover from a wildfire burn. During this recovery time, increased amounts of debris (e.g., scorched vegetation and topsoil) are transported from burned areas during rain events due to the denuded ground surface. Through a comparison of pre- and post-2009/2010 and 2010/2011 storm season surveys, an estimated 1.2 mcy of sediment was deposited in BTR after the wildfire, increasing the total amount of sediment in the reservoir to approximately 2.0 mcy. Currently, Maple Canyon SPS is estimated to have approximately 4.4 mcy of remaining capacity for sediment.

In recent years, the Big Tujunga Dam was subject to substantial rehabilitation. The LACFCD commenced the Big Tujunga Dam Seismic Upgrade project in April 2008, and completed it in February 2012. The purpose of the retrofit project was to improve the safety of Big Tujunga Dam and to prevent downstream flooding, human injury, property damage, and damage to sensitive species habitat downstream. The retrofit project seismically strengthened the Dam to remove the threat of failure during a significant seismic event and constructed a new spillway to pass the “Probable Maximum Precipitation” flood downstream. This eliminated the seismic restrictions imposed on the facility by the State of California Division of Safety of Dams and restored the ability to impound water to spillway level.

The seismic upgrade project included rehabilitating and strengthening the Dam by adding structural concrete against the existing structure to create a thick-arch Dam. As a result, the Dam is almost twice as thick as when originally constructed, sloping from 10 feet thick at the top to 138 feet thick at the base/footing. Outlet valves were replaced, and a new low-flow valve was added to allow smaller releases of water for recharge of downstream pools to benefit habitat, including that for the Santa Ana sucker (*Catostomus santaanae*), which is a federally listed Threatened species and a California Species of Special Concern and which is located downstream of the Dam’s plunge pool. Additional modifications included raising parapet walls; modifying the crest of the Dam to function as an auxiliary spillway; installing a new Dam control system; constructing a new control house and valve house; and installing a new emergency generator and fuel tank. In addition to improving seismic stability and flood safety of the Dam, the seismic upgrade project provides increased water conservation and habitat enhancement opportunities, and increases the annual average water conservation capacity by 4,500 acre-feet (af).



Regional Location and Local Vicinity Map

Exhibit 2-1

Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

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2.2.3 TOPOGRAPHY AND DRAINAGE

Big Tujunga Canyon is northeast-to-southwest trending and located on the southern slopes of the San Gabriel Mountains. This canyon is defined by sheer cliffs and steep slopes to the canyon bottom, with elevations ranging from approximately 2,150 to 3,400 feet above mean sea level (msl). Water flows into BTR from an undeveloped watershed of naturally vegetated mountain slopes. The portion of Big Tujunga Creek located upstream of BTR is a perennial stream (i.e., water flows all year), while Big Tujunga Creek downstream of BTR maintains flowing water on a semi-permanent or seasonal basis. Ground elevations on the site range from approximately 2,170 feet above msl at the Dam to 2,310 feet above msl at its upstream end. Exhibit 2-1 depicts the elevations on a USGS base map, and Exhibit 2-2, Project Site Aerial and Watershed, depicts an aerial of the Project site, including BTR and Maple Canyon SPS, the surrounding mountainous lands, and the Big Tujunga Creek Watershed.

Big Tujunga Creek begins in the San Gabriel Mountains above the Dam. The upper portion of Big Tujunga Creek flows from east to west, and several tributaries that flow from the north and south join it as it flows toward BTR. Downstream (below) of the reservoir and Dam, Big Tujunga Creek runs southwesterly toward the Hansen Flood Control Basin. Over time, erosion has deposited alluvium (including boulders, cobbles, gravel, and coarse to fine sandy soils) within the stream bed of Big Tujunga Creek. Topography is irregular within Big Tujunga Canyon, and the stream grade, width, and flow velocity vary but are generally moderate. The creek channel morphology in the Project area includes portions with narrow, incised, fast-moving water; portions with wider, slow-moving water; deep pools; and a relatively broad alluvial wash with multiple meanders.

The Big Tujunga Dam releases flows through valves in the Dam structure into Big Tujunga Creek, which flows approximately 13.5 miles from BTR through the Angeles National Forest until it reaches the Hansen Flood Control Basin in the community of Lake View Terrace near the intersection of Foothill Boulevard and the Interstate (I) 210 freeway.

2.2.4 EXISTING OPERATIONS

BTR consists of an arched Dam across Big Tujunga Creek and a reservoir with an ultimate storage capacity of approximately 6,240 acre-feet (af). The maximum capacity elevation is 2,290 feet above msl, which is the height of the spillway. Water inflow to BTR varies considerably from day to day and from year to year, based on storm events. The Dam is operated with varied release regimes during the non-storm season to provide low flows in Big Tujunga Creek to benefit recreation, groundwater recharge, and habitat in downstream areas. The factors affecting the amount of water released in the non-storm season are varied and include factors such as (1) frequency and intensity of rainfall/runoff events; (2) water conservation releases; (3) minimum pool requirements (issues with sediment and operating valves); (4) Dam maintenance projects (routine and emergency projects); and (5) amount of sediment impounded in the reservoir.

On an annual basis during the storm season, the reservoir flows are released on an as-needed basis, particularly after a large storm event, to ensure adequate capacity behind the Dam. Per discussions with LACFCD staff, the Dam operators typically release flows from the Dam to reach a “minimum pool” by April 15th (i.e., the end of the rainy season). Currently, the minimum pool for BTR is at elevation 2,188 feet above msl.

2.2.5 EXISTING DAM STRUCTURE

The Big Tujunga Dam structure is connected to two Risers located within the body of the reservoir. Risers are large cylindrical concrete pipelines topped with an inlet grate that rises above the water level and allows reservoir waters to flow into the Dam and out of the valves into the plunge pool below. Water flowing into Riser 1, which has an inlet elevation of 2,188 feet above msl, outlets through Valve 2 into the plunge pool. Water flowing into Riser 2, which has an inlet elevation of 2,202 feet above msl, can outlet through Valves 1, A-1, and/or 3 into the plunge pool.[1] A 60-foot by 60-foot hydraulic slide gate is located on the upstream face of the Dam at an elevation of 2,144 feet above msl. As previously discussed, current minimum pool is at elevation 2,188 feet above msl, which is the same elevation as the inlet to Riser 2. The current sediment elevation on the most recent topographic survey is at elevation 2,170 feet above msl.

2.2.6 LAND USES

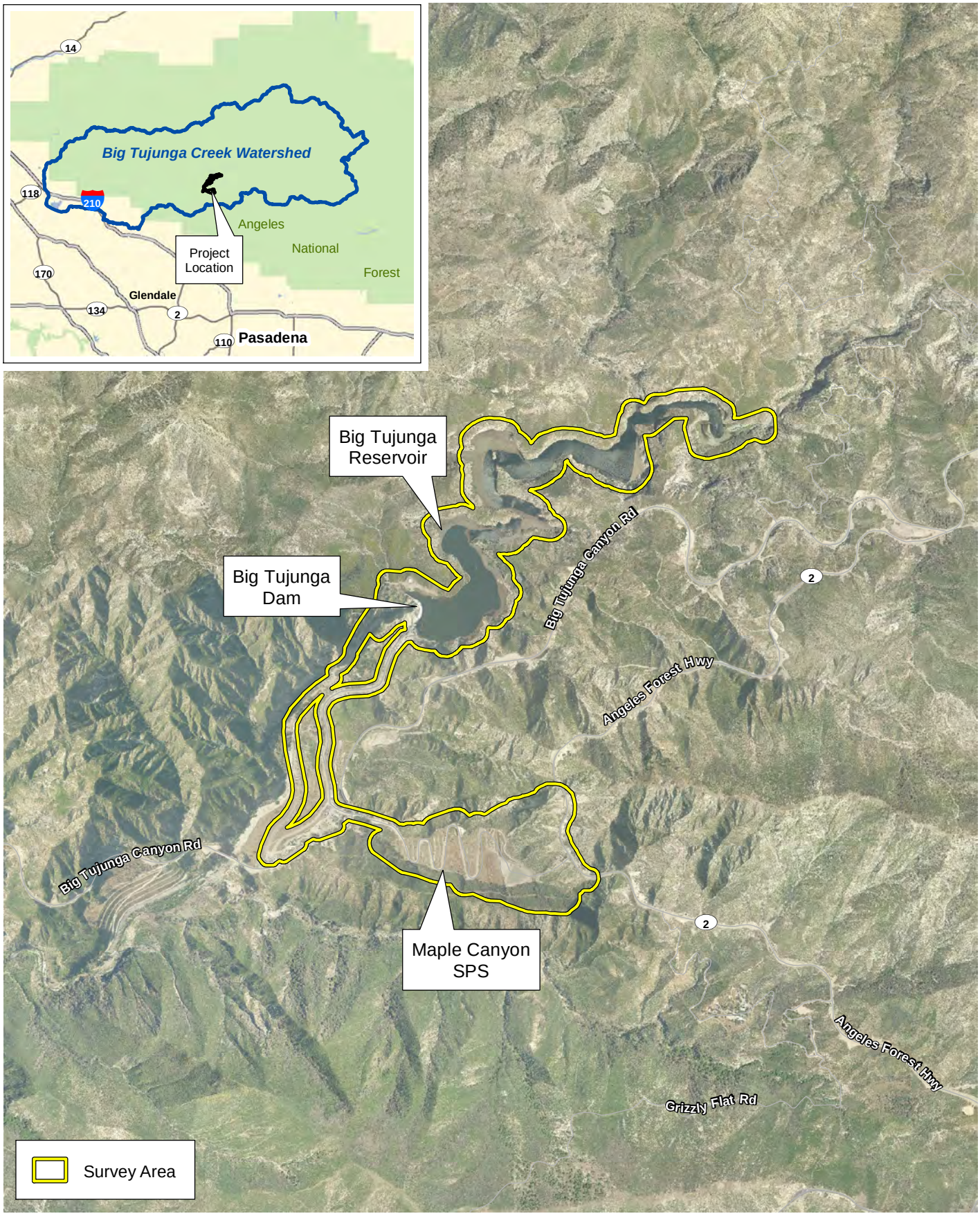
Land Use Plans

BTR and Maple Canyon SPS are existing public facilities maintained by the LACFCD. These facilities are located on federal land within the Angeles National Forest, and BTR is operated by the LACFCD under an existing SUP from the USFS. Continued operation of Maple Canyon SPS requires a new SUP to be issued by the USFS. Maple Canyon SPS is designated as a sediment placement location per the USFS Land Management Plan.

BTR and Maple Canyon SPS have a land use designation of O-NF – National Forest in the County General Plan Land Use Map, and a zoning designation of O-S (Open Space) in the County's Zoning Map (LACDRP 2012a). The USFS Land Management Plan for the Angeles National Forest designates the Project site as "Back Country" within the "Angeles Uplands (West)" for areas north of the Dam structure, and areas south of the Dam structure are designated as "Big Tujunga Canyon Place" and "Developed Area Interface" (USFS 2005).[2]

[1] The Valve House, located on the plunge pool side of the Dam, contains three Penstocks (i.e., pipelines that connect the risers to the valves); Penstock 1 connects to Valve 1 (42-inch fixed cone valve) and Valve 1-A (24-inch low-flow valve). Penstock 2 connects to Valve 2 (66-inch fixed cone valve), and Penstock 3 connects to Valve 3 (54-inch fixed cone valve).

[2] The "Angeles Uplands West Place" designation is described in the Land Management Plan as a popular, expansive, chaparral-covered landscape that provides dramatic canyon panoramas along the Angeles Crest Scenic Byway. It is one of the "Key Places" representing the most picturesque national forest locations, containing its own landscape character. The "Back Country" designation includes areas that are generally undeveloped and managed for motorized public access on designated roads and trails (USFS 2005). The "Big Tujunga Canyon Place" designation is described the Land Management Plan as a year-round day-use recreation landscape in a river-based woodland setting. The wooden riparian area serves as an important wildlife corridor and as a habitat for sensitive animal species. The land use designation is "Developed Area Interface", which includes areas adjacent to communities or concentrated use areas and developed sites with more scattered or isolated community infrastructure (USFS 2005).



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Project Site Aerial and Watershed

Exhibit 2-2

Big Tujunga Reservoir Sediment Removal Project

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On-Site and Surrounding Land Uses

Exhibit 2-3, On-Site Facilities at Big Tujunga Dam, provides an aerial depiction of the locations of notable features adjacent to Big Tujunga Dam. There are no residential land uses in the vicinity of BTR, with the exception of the home of the Dam Operator at the Dam site. BTR is in a remote location within the San Gabriel Mountains, and the Dam Operator resides on site to ensure the continual presence of trained staff in the event of an emergency. The nearest residences to the Project site include a few rural homes located along Vogel Flat Road/Stoneyvale Road located within the boundaries of the Forest approximately 2 miles west of the Project site, or approximately 2.7 miles via vehicular travel down Big Tujunga Canyon Road.

Adjacent to the southern side of the Dam is an operational office building/control house and parking lot and a paved access road that runs southerly from the Dam to its connection with Big Tujunga Canyon Road. The Dam Operator's house is located adjacent to the on-site access road. The former residence of the Assistant Dam Operator is located west of the Dam, but is abandoned. A helipad is located just northwest of the Dam and is used for emergency fire fighting in the Forest. A maintenance yard is located at the southwest corner of the intersection of the paved access road with Big Tujunga Canyon Road. In addition, there are two water tanks, one on each side of the canyon, which retrieves perched groundwater for use on site.

Some of the existing facilities within BTR and Maple Canyon SPS are identified in Exhibit 2-4, Photograph Locations, and Exhibits 2-4A and 2-4B, Site Photographs, and are described below:

- ***Photo 1:*** This photograph depicts the Dam structure looking north. It shows the recently reconstructed spillway. The plunge pool (Photo 3) is located directly beneath the spillway.
- ***Photo 2:*** This photograph depicts the impounded water located at the beginning of the Dam structure, looking north. As shown, the reservoir is surrounded by steep rocky slopes with no publicly accessible roads or trails leading to the water.
- ***Photo 3:*** This photograph depicts the plunge pool south of the Dam structure, followed by Big Tujunga Creek. The access road that allows for the periodic maintenance and sediment removal from the plunge pool is also depicted.
- ***Photo 4:*** This photograph depicts Big Tujunga Creek and its associated vegetation, looking south. This photograph was taken at the access road crossing of the Creek on the Project site and depicts the riparian vegetation in the process of recovering from the 2009 Station Fire.
- ***Photo 5:*** This photograph depicts Big Tujunga Canyon Road looking north at the entrance to the Big Tujunga Dam to the left and Maple Canyon SPS to the right. As shown, surrounding mountainous topography and mature vegetation are located adjacent to the roadway.
- ***Photo 6:*** This photograph depicts the constructed access road within Maple Canyon SPS, looking south. As shown, previous sediment deposits were placed in terraced slopes with mitigation trees and vegetation planted on the slopes. The access roads include V-ditches to convey storm water down the terraced slopes and ultimately into Big Tujunga Creek.
- ***Photo 7:*** This photograph depicts a portion of the remaining capacity in the eastern plateau of Maple Canyon SPS, looking west.

- ***Photo 8:*** This photograph depicts a portion of the remaining capacity of the far eastern edge of Maple Canyon SPS, looking east. The storm water inlet structure is located in the lower right portion of the photograph, which captures runoff from the surrounding mountain slopes and conveys the flows through Maple Canyon SPS and ultimately into Big Tujunga Creek.

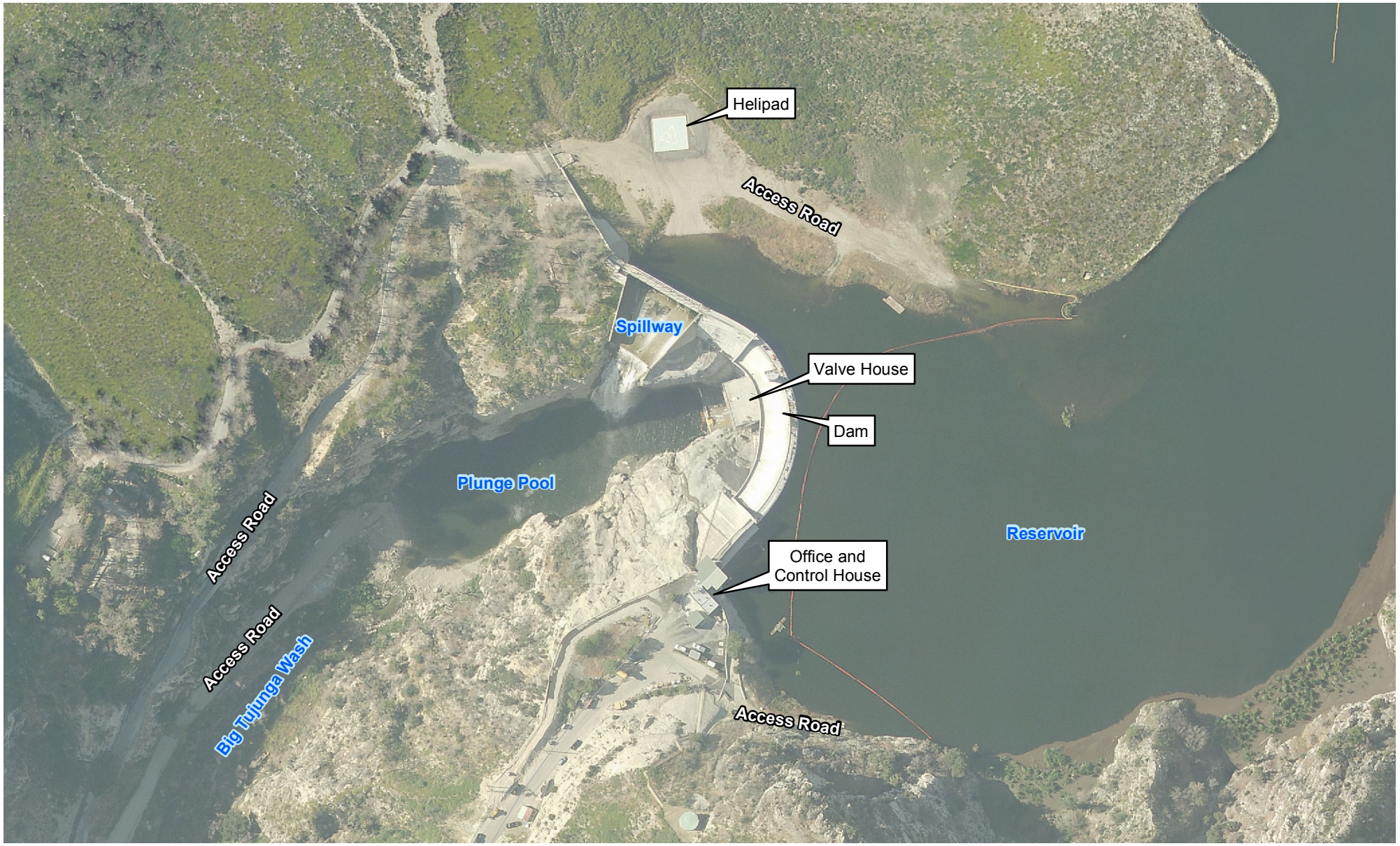
While the Angeles National Forest offers various opportunities for hiking and biking, there are no designated trails near the Project site. The nearest trailhead is Condor Peak located approximately 1.2 miles southeast of the entrance road to BTR, which leads to a trail designated as "13W05" that travels northerly into the Forest. This trail has no views of the Project site.

2.2.7 BIOLOGICAL RESOURCES

Exhibits 4-3A and 4-3B, from Section 4.4, Biological Resources, depict the vegetation communities in the Project study area. Much of the area surrounding BTR was burned in the 2009 Station Wildfire, but is now recovering. Vegetation on the slopes surrounding BTR include, but are not limited to, mixed chaparral, chamise chaparral, scrub oak chaparral, willow riparian scrub, bare cliffs, and small patches of coastal sage scrub, coast live oak stands, and California annual grassland. The majority of BTR is open water or streambed. Chamise chaparral, mixed chaparral, willow riparian forest, coast live oak stands, disturbed freshwater seep, California annual grassland, and ornamental plantings are found along existing haul roads that connect BTR to Maple Canyon SPS. Scrub oak chaparral, mixed chaparral, chamise chaparral, California sycamore woodland, creeks, and unvegetated cliff faces are found within the natural and undeveloped portions of Maple Canyon SPS. The portion of Maple Canyon SPS that has been previously developed through sediment placement is generally vegetated with California annual grassland and developed access roads. Jurisdictional drainages containing California sycamore woodland and unvegetated streambeds are located at the upper end of Maple Canyon SPS.

"Critical habitat"[3] is designated for the Santa Ana sucker (*Catostomus santaanae*) downstream of the Dam and including a portion of the plunge pool. Critical habitat is designated for the arroyo toad (*Anaxyrus californicus*) in the upper reach of BTR. The Santa Ana sucker is a federally Threatened species known to occur in small shallow streams that contain coarse substrate (e.g., gravel, rubble, and boulders) with growths of algae. The Santa Ana sucker is known to occur along Big Tujunga Creek downstream of the plunge pool. The Santa Ana sucker has not been observed within the plunge pool and it is not expected to occur there because it does not meet the preferred habitat requirements of the sucker. The Santa Ana sucker does not occur within BTR or upstream of the reservoir in Big Tujunga Creek. The arroyo toad is a federally Endangered species known to occur within flood-prone areas, with breeding occurring in shallow pools with fine gravelly/sandy substrate, and with a moderate riparian canopy of cottonwood (*Populus* spp.), willow (*Salix* spp.), or oak (*Quercus* spp.) trees. One arroyo toad was observed upstream of the reservoir along Big Tujunga Creek. Potentially suitable habitat for the arroyo toad is located along Big Tujunga Creek downstream of the Dam although focused surveys have not been conducted in this portion of the creek. Maple Canyon SPS does not contain any designated critical habitat areas, and it does not contain habitat for either species. These areas of critical habitat are depicted on Exhibit 4-5, Critical Habitat, in Section 4.4, Biological Resources.

[3] "Critical habitat" is defined as a specific geographical area, whether occupied by listed species or not, that are determined to be essential for the conservation and management of listed species, and that have been formally described in the *Federal Register* (i.e., the daily journal of the United States government).



On-Site Facilities at Big Tujunga Dam

Exhibit 2-3

Big Tujunga Reservoir Sediment Removal Project

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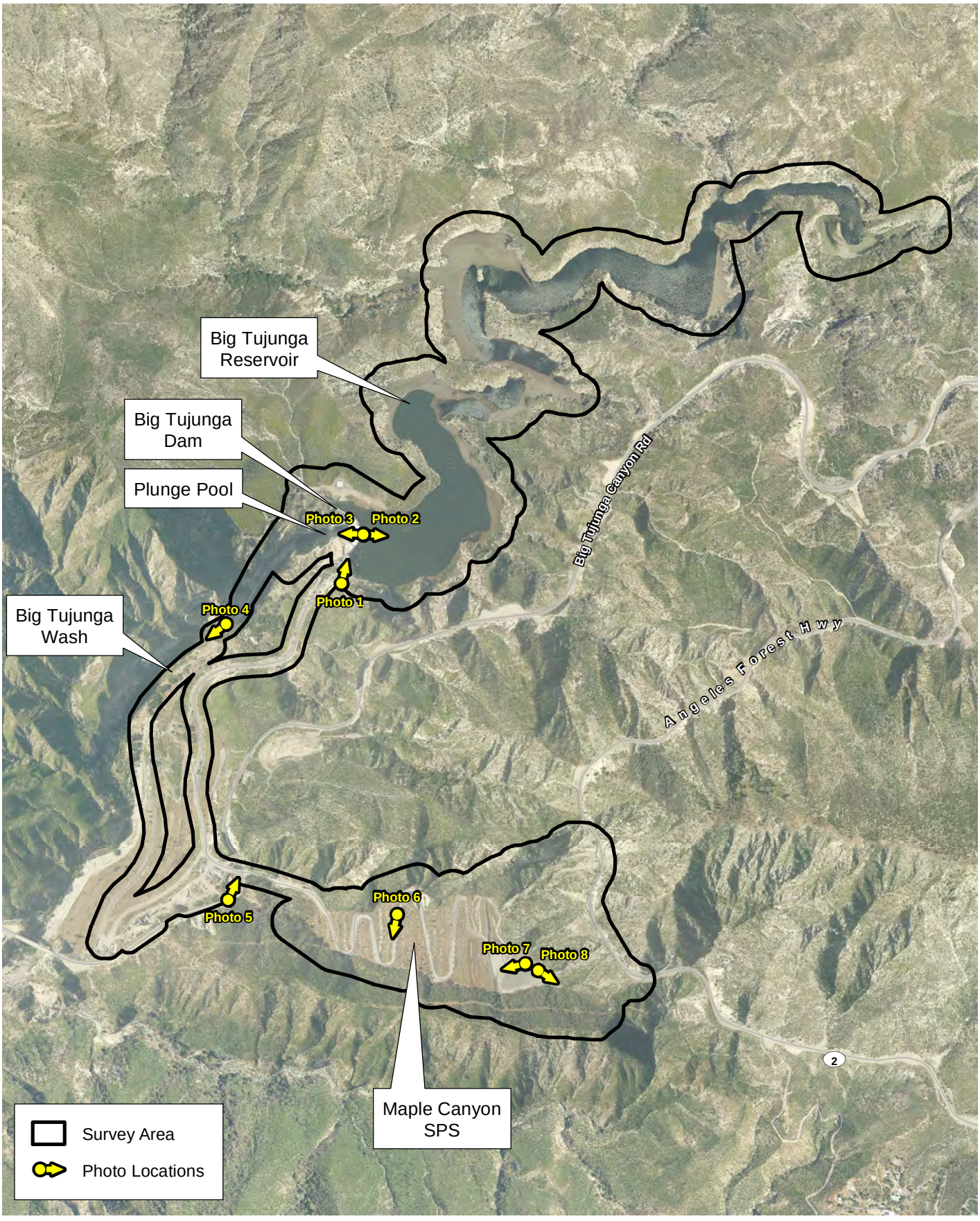

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Photograph Locations

Exhibit 2-4

Big Tujunga Reservoir Sediment Removal Project

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Feet

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Photo 1: Photo depicts BTR dam structure looking north.

Photo 2: Photo depicts water within BTR behind dam structure looking north.

Photo 3: Photo depicts plunge pool south of BTR dam structure, followed by Big Tujunga Creek and access road, looking south.

Photo 4: Photo depicts Big Tujunga Creek south of small bridge crossing on access road, looking south.

Site Photographs

Exhibit 2-4A

Big Tujunga Reservoir Sediment Removal Project

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Photo 5: Photo depicts Big Tujunga Road in proximity to site access road to BTR (located west of Road) and Maple Canyon SPS (located east of road), looking north. Low Emission Truck Option and Conveyor Belt Option would cross Big Tujunga Road at this location.

Photo 6: Photo depicts access roadway area on developed portion of Maple Canyon SPS, complete with mitigation trees, looking south.

Photo 7: Photo depicts remaining capacity in eastern plateau of Maple Canyon SPS, looking west.

Photo 8: Photo depicts remaining capacity in far eastern edge of Maple Canyon SPS, looking east.

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Site Photographs

Exhibit 2-4B

Big Tujunga Reservoir Sediment Removal Project

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The LACDPW has been participating in the Santa Ana Sucker Working Group (SASWG) since 2000 in order to develop an adaptive management approach to making releases to minimize adverse effects and to increase beneficial effects of releases on the Santa Ana sucker population in Big Tujunga Creek. Through LACDPW's efforts with the SASWG, Section 7 consultation with the USFS and USFWS in accordance with the Federal Endangered Species Act (FESA) has been initiated for particular aspects of the Big Tujunga Dam Operations and Maintenance Plan, including sediment removal projects.

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SECTION 3.0 PROJECT DESCRIPTION

The LACFCD proposes to conduct sediment removal activities at BTR, with deposition of sediment into Maple Canyon SPS. Both facilities are located within Big Tujunga Canyon in the Angeles National Forest. The purpose of the Project is to protect and enhance life and property downstream of BTR by removing accumulated sediment from behind the Dam in order to maintain capacity within the reservoir. Operating capabilities of the outlet works in an effort to contain future storm water flows, debris, and sediment and to enable release of captured storm water for flood attenuation, downstream water conservation, and enhancement of downstream habitat, including that for the Santa Ana sucker.

Currently, BTR contains approximately 2.0 mcy of sediment, but future storms could rapidly increase the amount of sediment held behind the Dam due to the recently burned nature of the watershed resulting from the 2009 Station Wildfire. Storm water runoff from a recently burned watershed can result in greatly increased flows and higher quantities of sediment and debris in the flows due to burned and dislodged vegetation and lowered infiltration rates.

The need for a sediment removal project is determined based on the amount of sediment deposition behind the dam. Too much sediment accumulation can affect the ability of the outlet works (valves, gates and spillway) to function correctly and can reduce available reservoir capacity below that necessary for flood control storage or to safely contain future sediment inflow including the “Design Debris Event” (DDE). The DDE is the predicted amount of sediment that will flow into the reservoir after the undeveloped portion of the tributary watershed is completely burned and a 50-year design storm event occurs after 5 years of watershed recovery. The 50-year design storm and the DDE are defined by the Los Angeles County Department of Public Works (LACDPW) Hydrology and Sedimentation Manuals, respectively. The DDE for the BTR is approximately 6,900,000 cubic yards.

In order to preserve BTR’s capacity to retain storm flows and debris, and to maintain the outlet works (valves, gates, and spillway) free of sediment and debris so they can function properly, the LACFCD proposes to remove between 2.0 mcy (i.e., the existing amount of sediment within BTR) and 4.4 mcy (i.e., the existing remaining capacity of Maple Canyon SPS) of sediment from BTR and deposit the sediment in Maple Canyon SPS. Sediment excavations would be conducted over an area of approximately 45 acres within BTR. The actual amount of sediment removal beyond the existing 2.0 mcy would depend on the amount of sediment deposition in the coming years.

3.1 PROJECT ACTIVITIES AND SCHEDULE

3.1.1 SEDIMENT REMOVAL SCHEDULE

Sediment excavations are anticipated to begin approximately April 16, 2015, and would continue through approximately October 14 (non-storm season) each year for approximately five years, depending on the rate of flows into BTR; the volume of sediment to be removed; and the rate of removal by the LACFCD’s Contractor. All sediment removal operations that would occur within BTR, including dewatering, sediment removal activities, and equipment set-up and break-down, would be conducted annually from approximately April 16 to October 14 (i.e., the non-storm season). Other Project-related activities conducted outside the reservoir (including movement of the re-use material stockpile) would occur from approximately October 15 to April 15 (storm season). Sediment placement activities at Maple Canyon SPS would occur concurrent with sediment removal activities from BTR and would extend into the storm season, as needed.

3.1.2 PRE-DEWATERING ACTIVITIES

As previously discussed, during each storm season, the reservoir flows are released from the Dam on an as-needed basis, particularly after a large storm event, to ensure adequate capacity within BTR. Per discussions with LACFCD staff, the Dam operators typically release flows from the Dam to reach a "minimum pool" by April 15 (i.e., the end of the rainy season); therefore, Dam operations prior to April 15 are part of normal operations and are not considered to be dewatering activities associated with the Project.

During each year of sediment removal, dewatering activities would start on or shortly after April 16. The LACFCD's Contractor would be responsible for three initial tasks: (1) installing a bypass line to divert inflow from the reservoir (behind the Dam) into Big Tujunga Creek; (2) dewatering the plunge pool and fish removal; and (3) installing sediment filtration best management practices (BMPs) at the plunge pool's outfall into Big Tujunga Creek. These efforts are anticipated to take approximately five days.

Creek Flow Diversion

During Project implementation during the non-storm season, the LACFCD would not have the ability to make periodic releases from the Dam because no water would be retained within BTR during sediment-removal activities. Therefore, all dry season outflows to Big Tujunga Creek would be equal to the dry season inflows. To facilitate creek flow diversion during the non-storm season, a High Density Polyethylene (HDPE) creekflow bypass line would be constructed to allow natural flows from the upstream Big Tujunga Creek to bypass the reservoir (see PDF HYD-1).

The bypass would include a temporary cofferdam in the upstream area of the reservoir to direct the upstream creek flows into the bypass line. The bypass line would be laid along the length of the reservoir and passed through a Penstock within the Dam, through a valve, and would outlet at the mouth of Big Tujunga Creek near the plunge pool. Once the bypass line is fully installed and operational, all seasonal flows in Big Tujunga Creek would flow in an amount and rate dictated by natural conditions, as if the Dam were not there. Therefore, all outflows to Big Tujunga Creek downstream of the plunge pool would be equal to the inflows at the upstream portion of the reservoir. This bypass line is consistent with the control of water approach that was successfully implemented during the 2009–2010 Big Tujunga Dam Seismic Rehabilitation and Spillway Modification Project.

Plunge Pool Dewatering

The plunge pool would be dewatered using pumps in order to prepare the plunge pool to receive dewatering flows. During this time, all Dam valves would be closed; no water releases would occur from the Dam into the plunge pool. Because special status fish species[4] may be present in the plunge pool (excluding Santa Ana sucker, which has never been found within the pool), biologists would relocate any special status fish species prior to dewatering the plunge pool (see MM BIO-4). After dewatering of the plunge pool is complete, the LACFCD's Contractor would evaluate whether removal of any existing sediment within the plunge pool would be required. Any sediment removed from the plunge pool would be deposited within Maple Canyon SPS. Accumulated sediment within the plunge pool would be removed periodically, as necessary.

[4] Arroyo chub (*Gila orcutti*) is known to occur in the plunge pool. Santa Ana sucker and Santa Ana speckled dace (*Rhinichthys osailolus*) have not been found within the plunge pool, but are known to occur in the Big Tujunga creek just below the plunge pool.

Water Quality Filtration BMPs

During this time, the LACFCD's Contractor would install water quality filtration BMPs between the plunge pool and the mouth of Big Tujunga Creek. These BMPs—such as sand/gravel bags, silt fencing, and/or other filtering devices—would be placed to prevent sediment from exiting the plunge pool into downstream waters. Once installed, the BMPs would allow the plunge pool to serve as a large sedimentation basin in which waters released from the Dam would be temporarily retained to allow for sediments to drop to the bottom of the pool. These BMPs would be designed with the goal of incorporating every reasonable effort to prevent or limit the flow of disturbed sediment and particulate matter downstream during Project activities (see PDF BIO-3).

3.1.3 DEWATERING OF RESERVOIR AND CONTROL OF WATER

As the creek flow diversion, plunge pool dewatering, sediment removal, and BMP installation efforts are occurring during the first five days of Project activity, all Dam valves would be closed; no water releases would occur from the Dam into the plunge pool. During this time, recession flows (i.e., inflow into the reservoir) would pond behind the Dam. An analysis of data from the LACFCD's database of daily releases, which contains outflow data in the month of April from 1998 through the present, determined the typical inflow that can be expected during wet, average, and dry years.[5] Wet and average season recession flows (which are estimated through modeling) show that, in a wet year, the reservoir would rise to elevation of 2,221 feet and in an average year, the reservoir would rise to 2,207 feet (calculated using the average recession flow rates). In a dry year, the flows would be negligible.

Wet Year Dewatering

Flow rates are a factor for consideration when determining the impacts of dewatering on the hydrology and aquatic habitat of Big Tujunga Creek. Taking into consideration historic flows experienced in wet years (i.e., rainfall greater than 32 inches), the LACFCD's ARRS system data was used to develop a Dewatering Schedule for this "worst case" scenario (i.e., need for high-flow releases from the Dam). The average inflow to BTR during the month of April in a wet year is estimated to be 72.5 cubic feet per second (cfs).

Table 3-1 below presents the Wet Year Dewatering Schedule. This is the anticipated schedule that LACFCD would adhere to during a wet year to dewater the reservoir after April 15 (see PDF BIO-2).

[5] The wet year data is the average inflow during the month of April in the wettest year between 1998 and today. The dry year average inflow is the average inflow in April during the driest year between 1998 and today. The average year data is the average between the wet and dry year average inflow.

TABLE 3-1
"WET YEAR" DEWATERING SCHEDULE

Day	Time	Dam Flows	Estimated Elevation (feet above msl)	Activity
1	All Day	None (Close Valves)	2,188	Dewater plunge pool, install bypass line, and install filtration BMPs
2	All Day	None (Close Valves)	–	
3	All Day	None (Close Valves)	–	
4	All Day	None (Close Valves)	–	
5	All Day	None (Close Valves)	2,221	
6	8:00 AM to 3:00 PM	15 cfs to 60 cfs	2,222	Ramp Up Water Releases from Dam
7	8:00 AM to 3:00 PM	75 cfs to 100 cfs	2,221	
8	All Day	120 cfs	2,220	
9	All Day	140 cfs	2,216	
10	All Day	160 cfs	2,210	
11	All Day	180 cfs	2,202	Peak Water Releases from Dam to Reach Minimum Pool[a]
12	8:00 AM to 5:00 PM	180 cfs	2,188	
13	All Day	82.5 cfs	–	Pumping of 10 cfs and bypass pipeline flows of 72.5 cfs until dewatering is complete
14	All Day	82.5 cfs	–	
15	All Day	82.5 cfs	–	
16	All Day	82.5 cfs	–	
17	All Day	82.5 cfs	–	
18	All Day	82.5 cfs	–	
19	All Day	82.5 cfs	–	
20	All Day	82.5 cfs	–	
21	All Day	82.5 cfs	–	
22	All Day	82.5 cfs	–	
23	All Day	82.5 cfs	–	
24	All Day	82.5 cfs	–	
25	12:00 AM to 3:00 AM	82.5 cfs	2,170	

msl: mean sea level; BMPs: best management practices; cfs: cubic feet per second;

[a] Although not specifically shown through a change in valve pressure in this table, the flows would ramp down naturally from 180 cfs as the water approaches minimum pool (Chimienti 2013).

Source: Malihulikar 2013.

At the end of the 5 days of pre-dewatering activities, ponded water would reach an elevation of 2,221 feet above msl based on an average inflow of 72.5 cfs in a wet year. At this time, Valve A-1 would be used to release water starting at 15 cfs and ramping flows up to 180 cfs (Table 3-1). It would take approximately 5 days of ramping flows to reach an outflow of 160 cfs. After 2 additional days of releasing at 180 cfs, the water elevation would be below the elevation of the inlet on Riser 1 for Penstock 2, which is 2,188 feet above msl. At this time, either Valve 2 would be used or pumps would be used to continue to dewater the reservoir. The pumps would be powered by electricity available at the Dam control house. In total, approximately 5 days of ramping releases from 0 to 160 cfs and 2 additional days of releases at 180 cfs would be required to dewater the reservoir in a wet year from an elevation of 2,221 feet above msl to an elevation of 2,188 feet above msl. Flows would ramp down (decrease) naturally as the water approaches minimum pool and there is less water pressure from water in the reservoir (Chimienti 2013).

At this point, the LACFCD's Contractor would have completed installation of the upstream bypass line, and inflows to the reservoir would then be diverted through the HPDE line directly into Penstock 1 or 2. The Contractor would use a floating barge and pumps to continue to dewater the reservoir from an elevation of 2,188 feet above msl to the top of sediment elevation at 2,170 feet above msl. The pumps would release approximately 10 cfs through either Penstock 1 or 2. The pumped water would combine with the bypass water for a total of approximately 82.5 cfs, and this outflow would continue for approximately 13 days until the reservoir is completely dewatered to an elevation of 2,170 feet above msl (i.e., the sediment level). In addition, a 60-foot by 60-foot hydraulic slide gate is located on the upstream face of the Dam at elevation 2,144 feet above msl. The slide gate may be used for dewatering in Year 2 and subsequent years, once sediment is excavated from the vicinity of its inlet.

In total, the dewatering process in a wet year would require a minimum of 25 days; however, only 2 days would include releases as high as 180 cfs. It should be noted that this time frame is an estimate only; dewatering activities may take longer if storms occur late in the rainy season or after April 15.

Average Year Dewatering

Average year dewatering would follow a similar pattern of "ramping up" and "ramping down" flows (as shown in Table 3-1) to prevent impacts to fish and other aquatic resources downstream of the plunge pool in Big Tujunga Creek.

The average inflow to Big Tujunga Reservoir during the month of April in an average rainfall year is 37 cfs. With no outflow from the Dam during the first 5 days of pre-dewatering activities, the water would rise from an elevation of 2,188 feet above msl to approximately 2,207 feet above msl. Valve A-1 would be used to dewater the reservoir from an elevation of 2,207 feet above msl to an elevation of 2,202 feet above msl. Flows would be ramped starting at 15 cfs until 100 cfs is reached, which would require approximately 2 days. Flows would be released for approximately 2 days at 100 cfs to reach an elevation of 2,188 feet above msl, and would be done by either opening Valve 2 to less than 10 percent, or with the use of pumps.

Once the water level is at an elevation of 2,188 feet above msl, the bypass line would be completely installed and inflows to the reservoir would be bypassed through either Penstock 1 or 2. The LACFCD's Contractor would pump water through either Penstock 1 or 2 at 10 cfs and this flow would mix with the bypass flow of 37 cfs for a total outflow of 47 cfs. It would take 13 days to release the remaining water from the reservoir using pumps at a rate of 47 cfs. In total, the dewatering process in an average year would require 21 days at a minimum.

Dry Year Dewatering

Dry year dewatering would follow a similar pattern of "ramping up" and "ramping down" flows as shown in Table 3-1 to prevent impacts to fish and other aquatic resources downstream of the plunge pool in Big Tujunga Creek. The average inflow to Big Tujunga Reservoir during the month of April in a dry year is 1.7 cfs. With an inflow of only 1.7 cfs, the reservoir elevation would not change during the 5 days of pre-dewatering activity and would remain at an elevation of 2,188 feet above msl. After 5 days, the bypass line installation would be complete and the Contractor would begin pumping 10 cfs into either Penstock 1 or 2. The pumped flow would combine with the bypass flow for a total outflow of 11.7 cfs. Releasing water at this rate would require approximately 12 days to lower the reservoir level from an elevation of 2,188 feet above msl to 2,170 feet above msl. In total, the dewatering process in a dry year would take 17 days minimum.

3.1.4 SEDIMENT REMOVAL

Once the reservoir is fully dewatered, excavation of the sediment from BTR and transport to Maple Canyon SPS would begin. The footprint of sediment removal would cover approximately 45 acres within BTR. Sediment-removal activities would avoid critical habitat for the arroyo toad in the uppermost reach of the reservoir (see PDF BIO-1). The contractor will have two options for transport of the sediment to Maple Canyon SPS: the Low Emission Trucking Option and the Conveyor Belt System Option, as discussed below.

Under both options, after October 14, work would continue until the first storm is forecasted (if regulatory permits allow), which would require the contractor to demobilize, removing equipment from the reservoir before the first storm. The transport of stockpiled materials and grading within Maple Canyon SPS would continue through the storm season, when sediment excavation activities have ceased within BTR. Under both options, sediment removal activities at BTR would continue to occur until the remaining ultimate capacity of Maple Canyon SPS has been exhausted or until the required reservoir capacity is achieved. The removal could occur for approximately five years, depending upon the amount of sediment to be removed.

Low Emission Trucking Option

For the Low Emission Trucking Option, there would be 8 hours per day of equipment activity scheduled to occur, (assuming approximately 400 round-trip trucks trips per workday (i.e., an average of 50 trucks per hour over an 8-hour workday). If work proceeds slower on some days than others, the 8-hour workday may be extended; however, the work would be limited to approximately 400 round-trip truck trips within a given day (see PDF AQ-1). It is anticipated that approximately 20 double dump trucks with capacities of 18 cy per load would be used to transport the sediment from BTR to Maple Canyon SPS. Work could be conducted Monday through Saturday, during the dry season between approximately April 16 and October 14. Work would typically be conducted Monday through Friday on a weekly basis; however, this MND has assumed work may occur Monday through Saturday for a conservative analysis.

All on-road trucks would be required to meet the 2010 or newer Model Year nitrogen oxide (NOx) emissions standards, or all off-road equipment would be required to be Tier 3[6] to significantly reduce air quality pollutants (see PDF AQ-2). Bulldozers and other heavy equipment would be operated continuously at Maple Canyon SPS in order to spread and compact the sediment. Under the Low Emission Trucking Option, the access roads behind the Dam on either side of the reservoir would be repaired to restore access to the dewatered reservoir bottom. This connection would allow trucks to travel via a one-way loop using the internal access roads, but would not limit the contractor to using this route as long as all South Coast Air Quality Management District (SCAQMD) thresholds and County specifications are met.

Maple Canyon SPS is the closest designated sediment placement site to BTR. Empty trucks would travel approximately 1.8 miles from the top of Maple Canyon SPS, across Big Tujunga Canyon Road to the westernmost leg of the access road, to the Dam structure. Trucks would

[6] The engines for the off-road equipment must be certified by the U.S. Environmental Protection Agency (USEPA) or the California Air Resources Board (CARB) to meet the Tier 3 emission requirements listed in the *Code of Federal Regulations* (Title 40, Part 89, Control of Emissions from New and In-use Nonroad Compression-Ignition Engines), as shown in the SCAQMD's Best Available Control Technologies Guidelines for Non-Major Polluting Facilities (BACT Guidelines Part D), or equipment would need to otherwise demonstrate that it meets the Tier 3 emission limits shown in the BACT Guidelines.

travel through the approximate 0.7-mile loop behind the Dam, of which approximately 0.3 mile would be unpaved along the reservoir bottom, where the trucks would be filled with sediment.

Full trucks would then travel approximately 2.4 miles from the Dam, down the easternmost leg of the access road and across Big Tujunga Canyon Road to Maple Canyon SPS. The entire truck loop would be approximately five miles total. Of this access road loop, approximately two miles are currently unpaved. Under the Low Emission Trucking Option, the two miles of unpaved roadway would be paved in order to reduce fugitive dust emissions (see PDF AQ-3). The existing three miles of paved access roads would be maintained in their existing condition.

Conveyor Belt System Option

For the Conveyor Belt System Option, work could be conducted Monday through Saturday, during the non-storm season between approximately April 16 and October 14. Work will typically be conducted Monday through Friday on a weekly basis; however, the analysis in this MND has assumed work may occur Monday through Saturday for a conservative analysis. Hours of equipment operation could exceed the typical 8-hour workday without violating air quality standards.

The Conveyor Belt System Option would begin within BTR, behind the Dam. The conveyor belt alignment between BTR and Maple Canyon SPS would be assembled in the most safe and efficient manner, given the terrain and slopes in the Project area. The likely conveyor belt alignment would travel from the BTR along the access road shoulder until meeting Big Tujunga Canyon Road. From there, it would cross over Big Tujunga Canyon Road, allowing for traffic to pass beneath the conveyor belt, and enter the Maple Canyon SPS, for a total distance of approximately two miles. A catchment system would be installed on both sides of the portion of the conveyor system that would span Big Tujunga Canyon Road to prevent any sediment from falling onto the roadway.

After October 14, work would continue until the first storm is forecasted, which would require the contractor to demobilize, removing equipment from the reservoir and breaking down portions of the conveyor belt that would conflict with flood maintenance vehicle use, such as on the boat ramp. The conveyor belt would remain in place annually across Big Tujunga Canyon Road for the duration of the Project.

3.1.5 SEDIMENT PLACEMENT AND REVEGETATION AT MAPLE CANYON SPS

Maple Canyon SPS currently holds approximately 2.5 mcy of sediment. An additional 4.4 mcy of sediment from this Project would cover approximately 29 acres within Maple Canyon SPS, of which approximately 8 acres currently contains sediment from previous projects; this would eliminate the remaining capacity of the SPS. If only 2.0 mcy is removed from BTR, fewer acres of Maple Canyon SPS would be impacted, which would leave 2.4 mcy of remaining capacity for future projects.

The design for Maple Canyon SPS is based on LACDPW Hydraulic Design Manual standards and incorporates features to reduce erosion. The vehicular access road, underground drainage pipes and surface drainage facilities (e.g., gutters, inlets, and surface drains) were installed throughout Maple Canyon SPS during the previous sediment placement activities to convey surface runoff through Maple Canyon SPS and to intercept any natural seepage from the underlying strata. Debris basins were also installed at the upstream end of each underground drainage pipe to catch eroded sediment from the natural drainages. With Project

implementation, these drainage facilities would be extended into new fill areas of Maple Canyon SPS (see PDF HYD-2).

Previous revegetation efforts performed at the completion of sediment placement activities at Maple Canyon SPS were conducted in full compliance with *Maple Canyon Sediment Placement Site Revegetation Plan,* which was approved in conjunction with the 1981 EA and Special Use Permit (SUP). However, the USFS-issued 1981 SUP is expired; therefore, the LACFCD must prepare a new revegetation plan. In 2012, the LACFCD prepared a *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document that sets forth a plan for the fill placement and ultimate closure of Maple Canyon SPS (see PDF AES-1). This revegetation plan is currently under review and subject to approval by the USFS as part of the issuance of the SUP for the Project. In accordance with the *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document, filling the SPS is expected to be completed in two phases.

Phase 1 includes removal of approximately 2.0 mcy of sediment from BTR and placement in Maple Canyon SPS as a result of the proposed Project. In order to cover the 2.0 mcy of sediment, approximately 13 acres of fill would be revegetated, with the top plateau to remain unvegetated to accommodate sediment from Phase 2. Prior to any sediment placement, areas within the fill footprint would be cleared of vegetation and grubbed. Sediment brought to Maple Canyon SPS would be dumped by trucks or the conveyor belt into a temporary stockpile, where dozers would push the sediment and spread it into fill areas. This would involve the creation of benched terraces and access roads that zigzag through the SPS. Benching at regular intervals and low slopes (i.e., 3:1) would be incorporated as an additional measure to reduce erosion.

Phase 2 would be completed at a later date and may include multiple subphases to place the remaining 2.0 mcy of sediment. This would require revegetation of the remaining 16 acres of the SPS following the same concepts as Phase 1. Although not anticipated, partial removal of previously planted vegetation from Phase 1 may be required to fill the remainder of Maple Canyon. Once Phase 2 is complete, the entire fill area would be revegetated.

As with the previously approved revegetation plan for Maple Canyon SPS, this plan would regulate revegetation activities after completion of sediment placement in order to restore biological functions to the hillsides; to reduce visual impacts; and to control erosion at the SPS. In order to improve vegetation establishment for Phases 1 and 2, the revegetation plan includes the application of locally collected native seed mix and installation of container stock plants. Stock plants would include trees; however, the majority of the plants would be native shrubs. All seeds for native trees, shrubs, and grasses would be selected from those that are growing naturally on the sides of and around Maple Canyon and would be collected from the Angeles Forest, Zone 993.

Once the fill placement is completed and planted with container stock and seed mix, the newly covered area would have a drip irrigation system installed. Watering would continue for at least three years with an additional two years, as necessary, as shown in surveys of plant health and growth. Planting would occur in the wetter months, between October and April. This Plan would require the LACFCD to provide annual monitoring reports to the USFS to ensure the success of the revegetation efforts. After the completion of Phase 2, once plant growth has fully stabilized after the five year growing period, steps will be taken to enhance the visual aspects of Maple Canyon SPS from the manmade improvements on the site, including but not limited to removal of all irrigation and supporting water tanks infrastructure, as well as removal of the asphalt covering the access road.

3.1.6 TEMPORARY STOCKPILE STAGING AREA

Sediment removal operations would also involve the crushing and stockpiling of rock and gravel materials that are determined to be suitable for beneficial re-use. During sediment removal activities, large rocks would be set aside within the dewatered reservoir; processed/crushed to reduce the size of the rocks; and sorted by size. From this aggregate staging area, crushed materials would be temporarily placed at one of two on-site stockpiles for subsequent transport to aggregate processors or other approved sites permitted to accept/process such materials.[7] This staging area would be completely removed from the reservoir prior to each storm season.

One stockpile area would be located within the plunge pool, which could only be used during the non-storm season. The second stockpile area would cover approximately 2.7 acres located between Big Tujunga Canyon Road (near the access entrance to the Dam) and the Big Tujunga Upper SPS. The materials would be stockpiled up to approximately 28,000 cy. The materials would be transported to aggregate processors or other approved sites in the San Fernando Valley area permitted to accept/process such materials during the wet or storm season, or at other times when the transport would not add to other sediment removal air quality impacts.[8] The vast majority of sediment would be deposited within Maple Canyon SPS.

3.1.7 STORM SEASON OPERATIONAL CHARACTERISTICS

BTR would continue to be operated according to standard operating guidelines during the rainy season from approximately October 15 through April 15 during the years when sediment is removed. The LACFCD's Contractor would demobilize from the reservoir once the first storms of the storm season begin. The contractor would be required to remove all equipment and remove or secure structures within the reservoir, including temporary water diversion structures and BMPs. The LACFCD's Contractor would demobilize at the beginning of each storm season and remobilize at the end of each storm season. However, the conveyor belt would remain in place all year, if this option is selected, with the exception of the portion of the conveyor belt located behind the Dam within the reservoir, which would be removed during the storm season. As previously discussed, the transport of stockpiled materials and grading in Maple Canyon SPS would continue through the storm season, as necessary. Once the Project is complete and all equipment and structures are removed from BTR and Maple Canyon SPS, there would be no long-term changes to the regular inspection, maintenance, or operations at BTR.

3.2 AGENCY APPROVALS AND PERMITS

3.2.1 REQUIRED APPROVALS AND PERMITS

Sediment removal activities in BTR are under the jurisdiction of various resource agencies, including the United States Army Corps of Engineers (USACE), the Los Angeles Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW)[9] due to the presence of "waters of the U.S." and "waters of the State" within the BTR

[7] For analysis purposes, crushed aggregate would be moved from the reservoir staging area to the on-site stockpiles at an average rate of 224 cy/day (or approximately 28,000 cy total per season, assuming 125 days per year).

[8] For analysis purposes, it is assumed that an approximate 40-mile round trip would be required via 10 cy capacity dump trucks at a maximum of 28 truck trips per day for 125 days during the wet or dry season (assumes an 8-cy load on each truck).

[9] On January 1, 2013, the name of the California Department of Fish and Game (CDFG) was changed to the "California Department of Fish and Wildlife". This change was mandated as part of Assembly Bill (AB) 2402, which amends the *California Fish and Game Code* to implement the results of a strategic vision process created to better reflect the Department's evolving responsibilities to protect and enhance California's fish and wildlife.

100 percent capacity contour (i.e., the topographical limit of storage capacity). Additionally, since BTR and Maple Canyon SPS are located within the Angeles National Forest on property owned by the USFS, the USFS would need to issue an SUP to allow for the deposition of sediment and subsequent revegetation at Maple Canyon SPS.

This IS/MND is intended to serve as the primary environmental document pursuant to CEQA for actions associated with BTR Sediment Removal Project, including discretionary approvals requested or required to implement the Project. In addition, this is the primary reference document for the formulation and implementation of a mitigation monitoring program for the Project. The Board, acting on behalf of the LACFCD, may adopt the IS/MND if it finds, on the basis of the whole Project record, that there is no substantial evidence the Project would have a significant effect on the environment. Table 3-2 lists all agencies with permit or approval authority over the Project.

TABLE 3-2
OTHER AGENCY APPROVALS AND REQUIREMENTS

Agency	Approval Required	Purpose
USACE	Section 404 Permit	To allow the discharge of dredge and fill material into "Waters of the U.S.".
USFS	Special Use Permit	To authorize activities at Maple Canyon SPS within the Angeles National Forest.
USFWS	Section 7 Consultation	To authorize activities that have the potential to impact the arroyo toad and the Santa Ana sucker.
RWQCB	Section 401 Water Quality Certification	To protect water quality within "Waters of the U.S.".
CDFW	Section 1605 Streambed Alteration Agreement	To authorize changes to the natural flow or bed, channel, or bank of any river, stream, or lake and associated impacts to biological resources.
USACE: U.S. Army Corps of Engineers; USFS: U.S. Forest Service; USFWS: U.S. Fish and Wildlife Service; RWQCB: Regional Water Quality Control Board; CDFW: California Department of Fish and Wildlife.		

SECTION 4.0 ENVIRONMENTAL CHECKLIST FORM AND ASSESSMENT

This section includes the completed CEQA environmental checklist form, as provided in Appendix G of the State CEQA Guidelines, as well as substantiation and clarification for each checklist response. The checklist form is used to assist in evaluating the potential environmental impacts of the Big Tujunga Reservoir Sediment Removal Project for both the Low Emission Trucking Option and the Conveyor Belt System Option and identifies whether the Project is expected to have potential significant impacts.

1. Project Title: Big Tujunga Reservoir Sediment Removal Project

2. Lead Agency Name and Address: Los Angeles County Flood Control District
   P.O. Box 1460
   Alhambra, California 91802-1460

3. Contact Person and Phone Number: Los Angeles County Flood Control District
   Los Angeles County Department of Public Works
   Water Resources Division – Reservoir Cleanouts
   P.O. Box 1460
   Alhambra, California 91802-1460
   reservoircleanouts@dpw.lacounty.gov

4. Project Location: The Big Tujunga Reservoir (BTR) is located in the San Gabriel Mountains within the Angeles National Forest, Tujunga District (Section 1, T2N, R13W, SBBM) along Big Tujunga Canyon Road, approximately 7 miles north of the community of Sunland near the Foothill Freeway (Interstate 210 Freeway). Maple Canyon Sediment Placement Site (Maple Canyon SPS) is located southeast of BTR, just east of Big Tujunga Canyon Road (Sections 1 and 6, T2N, R13W and R12W, SBBM).

5. Project Sponsor's Name and Address: Los Angeles County Flood Control District
   Los Angeles County Department of Public Works
   Water Resources Division – Reservoir Cleanouts
   P.O. Box 1460
   Alhambra, California 91802-1460

6. General Plan Designation/Zoning: O-NF - National Forest/OS - Open Space

7. Description of Project: The Project involves excavations of up to 4.4 mcy of sediment within BTR and the placement of sediment within Maple Canyon SPS up to its capacity. Sediment removal would occur via low emission trucks or conveyor belts over the course of approximately five years. Sediment removal would occur during the non-storm season, with BTR functioning normally during the rainy season. If a total of 4.4 mcy of sediment would be removed from BTR, the sediment would cover a total area of approximately 29 acres within Maple Canyon SPS and would eliminate the remaining capacity of the facility.

8. Surrounding land uses and setting: BTR and SPS are located along the foothills of the San Gabriel Mountains within the Angeles National Forest. These public facilities are surrounded by undeveloped open space.

9. Other public agencies whose approval is required: the U.S. Forest Service, the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the Los Angeles Regional Water Quality Control Board.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Less Than Significant With Mitigation", as indicated on the following pages.

- ☐ Aesthetics
- ☒ Air Quality
- ☒ Cultural Resources
- ☐ Greenhouse Gas Emissions
- ☒ Hydrology and Water Quality
- ☐ Mineral Resources
- ☐ Population and Housing
- ☐ Recreation
- ☐ Utilities and Service Systems
- ☐ Agriculture and Forest Resources
- ☒ Biological Resources
- ☒ Geology and Soils
- ☒ Hazards and Hazardous Materials
- ☒ Land Use and Planning
- ☐ Noise
- ☐ Public Services
- ☒ Transportation/Traffic
- ☒ Mandatory Findings of Significance

DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature of Lead Agency Representative — Date: 5/8/2013

KEITH LILLEY
Printed name

Los Angeles County Flood Control District
Agency

4.1 AESTHETICS	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

4.1.1 EXISTING CONDITIONS

BTR and Maple Canyon SPS are located within the San Gabriel Mountains, along Big Tujunga Canyon Road, which runs between BTR and Maple Canyon SPS. The BTR access road crosses Big Tujunga Canyon Road and runs west through the canyon that leads to the concrete Dam, and then runs east into Maple Canyon SPS. Both BTR and Maple Canyon SPS are gated to prevent public access. BTR is located at the bottom of the canyon, west of Big Tujunga Canyon Road, and is minimally visible from transient vehicular traffic due to intervening topography and vegetation. Maple Canyon SPS is located in the hillsides, east of Big Tujunga Canyon Road, and is not visible from transient vehicular traffic along Big Tujunga Canyon Road due to intervening topography, tall trees, and vegetation, and is minimally visible from Angeles Forest Highway.

The *County of Los Angeles General Plan's* Conservation and Open Space Element describes various scenic resources that "contribute to tourism and the intellectual and emotional development of local inhabitants". These resources include the peaks of the San Gabriel and Santa Monica Mountains; the Antelope Valley floor; stands of trees that cover the higher slopes of the mountains; waters and beaches of the Pacific Ocean; historical and distinctive architecture; the downtown skyline; residential enclaves; and scenic drives. Policy 16 in this Element calls for the protection of the visual quality of scenic areas, including ridgelines and scenic views from public roads, trails, and key vantage points (LACDRP 1980).

The County's Scenic Highway Element calls for the development of a scenic highway system in the County through a corridor protection program and the design of roadways. Nearby scenic highways include the following (LACDRP 1980):

1. Angeles Crest Highway (State Route [SR] 2) within the Angeles National Forest is an adopted route, with the segment south of the Forest identified as a first priority route (i.e., proposed for further study);
2. Angeles Forest Highway, from Angeles Crest Highway to the Antelope Valley Freeway (SR-14), is a second priority route (i.e., proposed for further study); and
3. Big Tujunga Canyon Road, from the Foothill Freeway (I-210) to the Angeles Forest Highway, is also a second priority route (i.e., proposed for further study).

SR-2 is located approximately 1.2 miles south-southeast of Maple Canyon SPS at its nearest point. BTR and Maple Canyon SPS are not visible from SR-2 due to the higher elevations of the roads and the presence of intervening trees and hills. Angeles Forest Highway is located approximately 650 feet from the top eastern end of Maple Canyon SPS. Maple Canyon SPS is visible as it slopes down from the western edge of Angeles Forest Highway. I-210 is approximately 5.4 miles south of the Project site, and neither BTR nor Maple Canyon SPS are visible from the freeway.

Several freeways and highways have been included in the California Scenic Highway Mapping System as "Officially Designated Scenic Highways" or "Eligible State Scenic Highways". The nearest Officially Designated Scenic Highway is SR-2, which runs through the San Gabriel Mountains from I-210 in La Cañada Flintridge to the San Bernardino County line (Caltrans 2012). As previously discussed, the Project site is not visible from SR-2.

Under the Land Management Plan (Forest Plan) for the Angeles National Forest, BTR and Maple Canyon SPS are located in an area designated to have High Scenic Integrity Objectives. The Scenic Integrity Objectives relate to the natural appearance of an area. Areas with High Scenic Integrity include those where the natural landscape appears unaltered and human disturbance is not evident. Scenic integrity objectives can be achieved through the use of best environmental design practices to harmonize changes in the landscape and advance environmentally sustainable design solutions and by mitigating ground disturbance to maintain scenic integrity (USFS 2005).

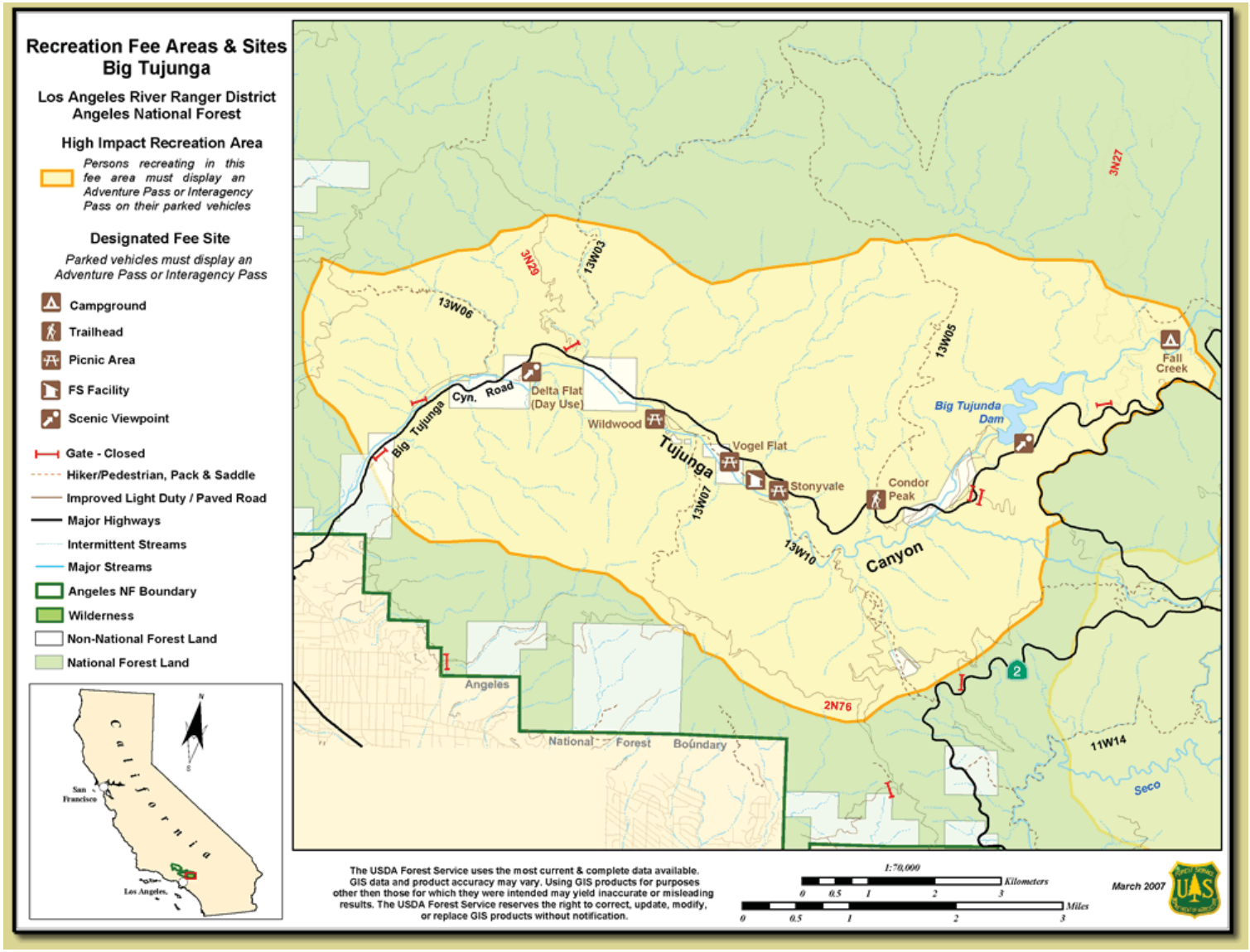
The USDA Land Management Plan for the Angeles National Forest defines the "Angeles Uplands West", which contains BTR, as "a popular, expansive, chaparral-covered landscape that serves as a mid-elevation gateway to the high country (Angeles High Country Place). This area provides dramatic canyon panoramas along the Angeles Crest Scenic Byway. Visitors can also find recreation experiences that provide challenge in a remote setting. It is one of the "Key Places" representing the most picturesque national forest locations, containing its own landscape character" (USFS 2005).

The USFS identifies the area surrounding the Project site as a "High Impact Recreation Area" as shown on Exhibit 4-1, USFS Recreation Areas. As shown on Exhibit 4-1, a Scenic Viewpoint is identified along Big Tujunga Canyon Road just north of the Dam structure to the east of the reservoir. This viewpoint is a location where vehicles can pull off the road and temporarily park in order to view the surrounding scenery. This viewpoint contains six parking spaces and has views of the surrounding mountainsides; the north side of the Dam structure; and the water within the reservoir.

4.1.2 IMPACT ANALYSIS

Project Design Feature

PDF AES-1 The LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document sets forth a plan for the fill placement and ultimate closure of Maple Canyon SPS. This plan regulates revegetation activities after completion of sediment placement in order to restore biological functions to the hillsides, to reduce visual impacts, and to control erosion at the SPS. The Plan requires the application of locally collected native seed mix (i.e. seeds (or plantings) from local sources within the watershed or within ten miles of the mitigation site, unless otherwise approved by the USFS) and installation of container stock plants in all areas where vegetation has been



USFS Recreation Areas

Exhibit 4-1

Big Tujunga Reservoir Sediment Removal Project

Bonterra CONSULTING

removed and where sediment has been placed. The desired result of the revegetation effort is a survival rate of 75 to 100 trees and shrubs per acre at the end of five years from planting of container stock. This Plan requires the LACFCD to provide annual monitoring reports to the USFS to ensure the success of the revegetation efforts. Once plant growth has fully stabilized after the five year growing period, steps will be taken to enhance the visual aspects of Maple Canyon SPS from the manmade improvements on the site; including but not limited to removal of all irrigation and supporting water tanks infrastructure, as well as removal of the asphalt covering the access road.

Regulatory Requirements

None applicable.

Impact Discussion

a) Would the project have a substantial adverse effect on a scenic vista?

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Sediment Removal/Placement at BTR and Maple Canyon SPS

Less Than Significant Impact. The proposed Project would occur within the Angeles National Forest, which offers views of natural mountain landscapes, as defined by rugged hillsides, canyons, creeks, mountain ridges, forests, and native vegetation. Trucks, equipment, and workers would be brought to BTR and Maple Canyon SPS, which would introduce views of maintenance activities involving heavy equipment into the natural landscape.

Views into the reservoir would be available to those who choose to stop at the Scenic Viewpoint along Big Tujunga Canyon Road, as identified in Exhibit 4-1. Sediment removal activities would result in a temporary visual change to the existing conditions due to dewatering and elimination of the water body behind the Dam during the non-storm season. Dewatering of BTR would temporarily expose underlying soils and would introduce dump trucks and other equipment into an area that previously offered views of the water. These visual changes would occur generally between April 16 and October 14 annually for approximately five years, depending on the amount of sediment removed. Unless stopping at the Scenic Viewpoint, these activities would be minimally visible and fleeting to vehicle drivers, hikers, and bicyclists on Big Tujunga Canyon Road due to the lower elevation of BTR; the curvy design of Big Tujunga Canyon Road in the vicinity of BTR; and the intervening vegetation and topography. Because sediment is below the water surface, its removal would have no long term effect on the visual aesthetic of the reservoir.

Maple Canyon SPS is designated and approved for sediment placement within the USFS Land Management Plan for the Angeles National Forest (USFS 2005). Therefore, sediment placement and the aesthetic impacts associated with filling the canyon are fully anticipated in accordance with the USFS land use designation. Sediment placement at Maple Canyon SPS would raise the ground elevation at the SPS for those areas not yet utilized for sediment deposition. These permanent changes in the local topography include engineered terraces and a continuation of the existing access road that would alter the 29 acres of land to be filled, of which 8 acres currently contain sediment from previous projects.

Hikers come to the Big Tujunga Canyon area for natural and scenic views. Recreational visitors are generally found along Big Tujunga Creek downstream of the Dam and, thus, have no or very limited views of BTR and Maple Canyon SPS. As previously discussed, views of Maple Canyon SPS are only available to vehicular activity along a portion of the Angeles Forest Highway, which is located approximately 650 feet from the top of the eastern end of Maple Canyon SPS. There are no designated hiking trails within, or public access to, Maple Canyon SPS or BTR. The nearest trailhead is approximately 1.2 miles west of the Project site and hikers would have no view of Project maintenance activities due to distance and intervening vegetation, slopes, and hillsides. Thus, changes in scenic views would only be visible to a few select travelers or hikers that may be walking on undesignated trails or hillsides, or stopping at the scenic outlook; these travelers would be present for short periods of time (from a few minutes to a few hours) in areas adjacent to BTR and Maple Canyon SPS. Therefore, sediment removal and placement activities within BTR and Maple Canyon would not have a substantial adverse impact on a scenic vista or substantially degrade the visual character or quality of the of the area.

Additionally, the LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document sets forth a plan for the fill placement and ultimate closure of Maple Canyon SPS. This plan would regulate revegetation activities after completion of sediment placement in order to restore biological habitat to the hillsides; to reduce visual impacts; and to control erosion at the SPS. This Plan would require the LACFCD to provide annual monitoring reports to the USFS to ensure the success of the revegetation efforts. Once plant growth has fully stabilized after the five year growing period, steps will be taken to enhance the visual aspects of Maple Canyon SPS from the manmade improvements on the site, including but not limited to removal of all irrigation and supporting water tanks infrastructure, as well as removal of the asphalt covering the access road. The LACFCD *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document would ensure that aesthetic impacts at Maple Canyon SPS would be less than significant and no mitigation is required (see PDF AES-1).

Low Emissions Trucking Option

Less Than Significant Impact. Under the Low Emissions Truck Option, dump trucks would be regularly travelling across Big Tujunga Canyon Road between BTR and Maple Canyon SPS. Cross traffic at Big Tujunga Canyon Road would be controlled in compliance with MM TRA-1, which requires a Traffic Control Plan to be prepared and implemented during sediment removal activities, in compliance with the California Department of Transportation's (Caltrans') *Manual on Uniform Traffic Control Devices* (MUTCD), as discussed in Section 4.16, Transportation. Since travelers, bicyclists, and hikers on Big Tujunga Canyon Road would see these trucks and flag person(s) for short periods of time as they pass through the area, changes in views would be short-term and temporary. Also, trucks and employees would be moving objects that would leave at the end of each day, and all equipment would be removed and sediment removal and placement activities would cease during the rainy season of each year. Impacts on scenic vistas and resources due to temporary truck traffic associated with sediment excavation from BTR and sediment placement in the SPS would be less than significant under the Low Emission Trucking Option and no mitigation is required.

Conveyor Belt System Option

Less Than Significant Impact. The Conveyor Belt System Option includes the construction of a conveyor belt from BTR to Maple Canyon SPS, with a crossing at Big Tujunga Canyon Road. The conveyor belt system would remain in place for the duration of the Project (i.e., approximately five years depending on the amount of sediment to be removed). The conveyor belt would be visible to travelers, hikers, and bicyclists on Big Tujunga Canyon Road as they pass through the Project area. Exhibit 4-2, Conceptual Depiction of Conveyor Belt, provides a view simulation of the conveyor belt crossing Big Tujunga Canyon Road. As shown in Exhibit 4-2, the conveyor belt is an industrial looking system that would introduce an incongruent element into the natural landscape and thus, would represent a human disturbance that is not part of the natural environment.

However, this visual disturbance would be minimal in size and visible only to transient vehicles along Big Tujunga Canyon Road. They are also not likely to be regular commuters since Big Tujunga Canyon Road is mainly used by travelers to the Forest for recreational purposes, rather than for access between a residential community and an employment base.

The Project would not conflict with USFS Land Management Plan's Scenic Integrity Objectives, which are intended to ensure harmony in the landscape and advance environmentally sustainable design solutions and by mitigating ground disturbance. The conveyor belt would be only a fleeting visual obstruction for vehicles traveling the speed limit along Big Tujunga Canyon Road. The conveyor belt system would be visible for approximately five to ten seconds coming from either the north or the south. Additionally, the conveyor belt system would be a temporary structure that would be removed after sediment placement activities at Maple Canyon SPS are completed. After Project completion, the conveyor belt would be dismantled and the visual quality of the area would return to existing conditions. Impacts to scenic vistas and the existing visual character of the Project area would be less than significant under the Conveyor Belt System Option and no mitigation is required.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. As discussed above under Thresholds (a) and (c) above, the Project would have no permanent visual impacts with the exception of the sediment placement within Maple Canyon SPS. The LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document would regulate revegetation activities after completion of sediment placement in order to restore biological habitat to the hillsides; to reduce visual impacts; and to control erosion at the SPS. Once plant growth has fully stabilized after the five year growing period, steps will be taken to enhance the visual aspects of Maple Canyon SPS. The LACFCD *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document would ensure that aesthetic impacts at Maple Canyon SPS would be less than significant and no mitigation is required (see PDF AES-1).

The nearest designated State scenic highway is SR-2. As previously discussed, the Project would not be visible from SR-2 due to the presence of intervening trees and mountainsides. Thus, there would be no impacts to a scenic highway under either the Low Emission Trucking Option or the Conveyor Belt System Option.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. Project-related activities would not introduce new sources of light or glare to BTR, Maple Canyon SPS, or the surrounding area. No activities are proposed during the nighttime hours, and no new light sources or reflective materials are proposed at BTR or Maple Canyon SPS. Therefore, there would be no impacts related to light and glare under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.1.3 MITIGATION MEASURES

There would be no significant adverse impacts relating to visual quality and aesthetics; therefore, no mitigation measures are required.

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Conceptual Depiction of Conveyor Belt

Exhibit 4-2

Big Tujunga Reservoir Sediment Removal Project

BonTerra CONSULTING

4.2 AGRICULTURE AND FOREST RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104[g])?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

4.2.1 EXISTING CONDITIONS

The Big Tujunga Dam and Reservoir was built in 1930–1931 under a Special Use Permit issued by the USFS that has no designated expiration date. Maple Canyon SPS was first used in 1981 under a Special Use Permit that has been renewed through the years but expired in 2010. There are no agricultural activities or designated Farmland within or near BTR and Maple Canyon SPS (FMMP 2011). The Project area is not located within the USFS Land Management Plan as an Inventoried Roadless Area of the Forest, which are areas proposed for conservation, and there are no special designations for lands within Big Tujunga Canyon (USFS 2005).

4.2.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. As discussed above, there are no agricultural activities or designated Farmland within or near BTR and Maple Canyon SPS. No farmland conversion or impacts to agricultural uses would occur with the Project. Also, the Project area is not zoned for agricultural use and there are no Williamson Act Contracts on or near BTR or Maple Canyon SPS. Thus, no impacts on agricultural resources would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, Section 12220[g]), timberland (as defined by Public Resources Code, Section 4526), or timberland zoned Timberland Production (as defined by Government Code, Section 51104[g])?

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The Project area is designated as O-NF – National Forest in the County's Land Use Plan (LACDRP 1980). The proposed sediment removal and placement activities would occur in an existing reservoir and SPS, where forest and timberland resources are not present. The Project would not conflict with the forest use of the surrounding area.

BTR is located in an area zoned by the Angeles National Forest Plan as Back Country, Motorized (USFS 2005). Sediment removal would not change the use of the existing reservoir and would not conflict with the natural character of this zone, as discussed in Section 4.10, Land Use and Planning. Maple Canyon SPS is a designated sediment placement site within the USFS Land Management Plan for the Angeles National Forest and is located in an area zoned as Developed Area Interface; proposed sediment placement activities are consistent with this zone (USFS 2005). No conversion of forest land to non-forest use is proposed with the Project. Sediment removal would not induce the conversion of forest land to other uses because it is not a growth-inducing activity. The proposed Project would comply with the conditions of the Special Use Permits issued by the USFS for the continued use of these LACFCD facilities. Thus, no impacts on forest resources would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.2.3 MITIGATION MEASURES

There would be no impacts to agriculture and forest resources; therefore, no mitigation measures are required.

4.3 AIR QUALITY	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

4.3.1 EXISTING CONDITIONS

The Project site is located in the Los Angeles County portion of the South Coast Air Basin (SoCAB) and, for air quality regulation and permitting, is in the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Both the State of California (State) and the U.S. Environmental Protection Agency (USEPA) have established health-based Ambient Air Quality Standards (AAQS) for air pollutants, which are known as “criteria pollutants”. The AAQS are designed to protect the health and welfare of the populace within a reasonable margin of safety.

The AAQS for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter with a diameter of 10 microns or less (PM10), fine particulate matter with a diameter of 2.5 microns or less (PM2.5), and lead are shown in Table 4-1.

TABLE 4-1
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as Primary
PM10	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
PM2.5	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12 µg/m^{3c}	Same as Primary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM10: large particulate matter; AAM: Annual Arithmetic Mean; PM2.5: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter; NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

[a] *National Primary Standards:* The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[b] *National Secondary Standards:* The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[c] On December 14, 2012, the USEPA Administrator approved a reduction of the federal annual PM2.5 standard from 15 µg/m^3 to 12 µg/m^3 effective March 18, 2013 (USEPA 2013).

Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).

Source: CARB 2012a.

Regional air quality is defined by whether the area has attained or not attained State and federal air quality standards, as determined by air quality data from various monitoring stations. Areas that are considered in "nonattainment" are required to prepare plans and implement measures that will bring the region into "attainment". When an area has been reclassified from nonattainment to attainment for a federal standard, the status is identified as "maintenance",

and there must be a plan and measures established that will keep the region in attainment for the following ten years.

For the California Air Resources Board (CARB), an "Unclassified" designation indicates that the air quality data for the area are incomplete and there are no standards to support a designation of attainment or nonattainment. Table 4-2 summarizes the attainment status of the SoCAB for the criteria pollutants.

TABLE 4-2
DESIGNATIONS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN

Pollutant	State	Federal
O_3 (1-hour)	Nonattainment	No Standard
O_3 (8-hour)		Extreme Nonattainment
PM10	Nonattainment	Serious Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Nonattainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Nonattainment/Attainment[a]	Nonattainment/Attainment
All others	Attainment/Unclassified	No Standards

[a] Los Angeles County is classified as nonattainment for lead; the remainder of the SoCAB is in attainment of the State and federal standards.

Source: CARB 2012b.

The nearest sensitive receptors (i.e., residential homes) to the Project site include a few rural residential/vacation homes located along Vogel Flat Road/Stoneyvale Road located within the boundaries of the Forest approximately two miles west of the Project site, or approximately 2.7 vehicular travel miles down Big Tujunga Canyon Road. There are no residential land uses in or near BTR or Maple Canyon SPS, with the exception of the residence of the Dam Operator. The Dam Operator is a LACFCD employee who would participate in the proposed sediment removal activities as a primary function of employment, and is therefore not considered to be a sensitive receptor.

Existing emissions from BTR and Maple Canyon SPS operations are generated by vehicles traveling to and from the site for maintenance and inspection activities and by the construction equipment used for occasional minor sediment removal activities.

4.3.2 IMPACT ANALYSIS

Project Design Features

PDF AQ-1 If the Low Emission Trucking Option is selected, daily hours of work would be scheduled to occur 8 hours per day of equipment activity (assuming approximately 400 round-trip trucks trips per workday (i.e., an average of 50 trucks per hour over an 8-hour workday). If work proceeds slower on some days than others, the 8-hour workday may be extended; however, the work would be limited to approximately 400 round-trip truck trips within a given day.

PDF AQ-2 If the Low Emission Trucking Option is selected, the LACFCD shall require that either: (1) All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 3 or better off-road emissions standards; or (2) All on-road diesel haul trucks shall have 2010 or newer engines. The LACFCD's Contractor shall provide a copy of each unit's certified Tier and/or engine specification to the LACFCD at the time of mobilization of each applicable unit of equipment.

PDF AQ-3 If the Low Emission Trucking Option is selected, the LACFCD shall ensure that all haul roads are paved, with the exception of the 0.33-mile portion of the route across Big Tujunga Reservoir, prior to the start of sediment removal activities.

Regulatory Requirements

RR AQ-1 The South Coast Air Quality Management District's (SCAQMD's) Rule 403, Fugitive Dust, requires the implementation of best available control measures (BACM) for any activity or man-made condition capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement. The BACMs include stabilizing soil; watering surface soils and crushed materials; covering hauls or providing freeboard; preventing track-out; and limiting vehicle speeds and wind barriers, among others. Compliance with this rule will result in a reduction in short-term particulate pollutant emissions. During construction and sediment removal activities, Project contractors shall comply with SCAQMD Rule 403. This RR shall be included by the LACFCD as notes in the Contractor Specifications.

Impact Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The SCAQMD *Final 2007 Air Quality Management Plan* (AQMP) is the air quality plan that was adopted by the SCAQMD on June 1, 2007. The 2007 AQMP is an update to the 2003 AQMP and incorporates new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. CARB approved the plan when the State Strategy for the State Implementation Plan (SIP) was adopted on September 27, 2007.

On November 28, 2007, CARB submitted a SIP revision to the USEPA for O_3, PM2.5, CO, and NO_2 in the SoCAB; this revision is identified as the "2007 South Coast SIP". The 2007 AQMP/2007 South Coast SIP demonstrates attainment of the federal PM2.5 standard in the SoCAB by 2014 and attainment of the federal 8-hour O_3 standard by 2023. The SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme". The USEPA approved the redesignation effective June 4, 2010. The Extreme designation requires the attainment of the 8-hour O_3 standard in the SoCAB by June 2024. CARB approved PM2.5 SIP revisions in April 2011 and O_3 SIP revisions in July 2011. The USEPA approved 3 of the 5 PM2.5 SIP requirements on January 9, 2012, and has approved 47 of the 62 O_3 SIP requirements (USEPA 2013b).

On December 7, 2012, the SCAQMD adopted the 2012 AQMP, which is a regional and multi-agency effort (SCAQMD, CARB, the Southern California Association of Governments [SCAG], and the USEPA). The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS); updated emission inventory methodologies for various source categories; and SCAG's latest growth forecasts (SCAQMD 2013). On December 20, 2012, the 2012 AQMP was submitted to CARB and the USEPA for concurrent review and approval for inclusion in the SIP (SCAQMD 2013). The 2012 AQMP was approved by the CARB on January 25, 2013 (CARB 2013).

The main purpose of an AQMP is to bring an area into compliance with the requirements of federal and State air quality standards. For a project to be consistent with the AQMP, the pollutants emitted from the project should not exceed the SCAQMD CEQA air quality significance thresholds or cause a significant impact on air quality. As shown in Response 4.3(b) below, pollutant emissions from the proposed Project would be less than the SCAQMD thresholds and would not result in a significant impact. Further, the proposed Project would not result in development that may not have been anticipated in the AQMP. No conflict with the AQMP would occur with the proposed Project.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant With Mitigation. Criteria pollutant emissions would occur during the summer season (generally from April to October) from the operation of (1) off-road construction equipment at BTR and Maple Canyon SPS; (2) aggregate processing (crushing and screening) equipment; (3) on-road trucks hauling sediment from BTR to Maple Canyon SPS (Low Emission Trucking Option) and aggregate from the aggregate processing area to the screened material stockpile (both Options); and (4) vehicles driven to and from BTR and Maple Canyon SPS by construction workers. Additionally, fugitive dust containing PM10 and PM2.5 would be generated from aggregate processing; material transfer to and from trucks; the conveyor belts; and storage piles. During the winter or storm season (generally from October to April), pollutant emissions would occur under both Options from the operation of on-road trucks hauling screened aggregate from the stockpile to an aggregate company in Sun Valley or other approved sites permitted to accept/process such materials. This analysis assumes a 40-mile round trip delivery of aggregate to the approved processing site.

Project-generated emissions were calculated as follows:

- Off-road construction equipment, fugitive dust from sediment excavation and placement, and construction worker vehicle emissions were estimated using the California Emission Estimator Model (CalEEMod) Version 2011.1.1 computer program (SCAQMD 2011b). CalEEMod is designed to model construction emissions for land development projects and allows for the input of project- and County-specific information. Model inputs include BTR and Maple Canyon SPS acreages; the construction equipment to be used for each activity; and the start and end dates of each activity. These data are included in the model output report in Appendix A. The model allows adjustment of default data, such as construction equipment load factors and anticipated number of workers. CalEEMod also includes the functions to estimate emission reductions for exhaust pollutants using low emission equipment and for dust control by watering.

- PM10 and PM2.5 emissions from aggregate processing (crushing and screening) were calculated using the methodology prescribed in USEPA AP-42, Compilation of Air Pollutant Emission Factors (Section 11.9.2, Crushed Stone Processing and Pulverized Mineral Processing).
- PM10 and PM2.5 emissions from material transfer trucks (batch drop) were calculated using AP-42 (Section 13.2.4 Aggregate Handling and Storage Piles).
- On-road vehicle (haul trucks) exhaust, tire, and brake emissions were calculated using CARB's EMFAC 2011 emission factors.
- On-road paved and unpaved road PM10 and PM2.5 emissions were calculated using AP-42 (Section 13.2.1, Paved Roads, and Section 13.2.2, Unpaved Roads).
- Storage Pile and conveyor belt PM10 and PM2.5 emissions were calculated using AP-42 (Section 8.19, Construction Aggregate Processing).

Off-road and on-road calculations were made for the first expected year of sediment removal. Emissions in subsequent years would be the same or less than in the first year because, in each successive year, contractors would be expected to use the same or newer equipment, and newer equipment would have reduced emissions. It should be noted the assumed year for the analysis was 2013–2014. Actual Project implementation will not begin prior to 2014, thus compounding the conservative nature of the analysis.

Summer Season – Sediment Removal and Aggregate Processing

Preliminary Calculations

Because the proposed Project would have diesel engine construction equipment at two locations, plus truck operations on unpaved roads, NOx and PM10 were identified as pollutants that could be emitted in substantial quantities. Based on preliminary estimates of NOx and PM10 emissions, the LACFCD consulted with the SCAQMD to confirm the appropriate emissions estimation methodologies for these pollutants. Using these methodologies, as described above, the estimated emissions, without emissions-reduction measures, are shown in Table 4-3. This estimate assumed the following existing haul route road conditions:

BTR – Maple Canyon SPS – BTR

400 round trips per day
2.2 miles from BTR to Maple Canyon SPS (southbound)
    1.7 miles paved
    0.5 mile unpaved
2.8 miles from Maple Canyon SPS to BTR (southbound, then northbound)
    1.3 miles paved
    1.5 miles unpaved
Average speed – 20 miles per hour (mph)
3 minutes idle at BTR to load
3 minutes idle at Maple Canyon SPS to unload

Crusher – Stockpile – Crusher

28 round trips per day
1.0 mile crusher to stockpile (southbound)
0.7 mile paved
0.3 mile unpaved
1.3 miles stockpile to crusher (northbound)
0.7 mile paved
0.6 mile unpaved
Average speed – 20 mph
3 minutes idle at crusher to load
3 minutes idle at stockpile to unload

This estimate also assumed watering active grading areas and unpaved roads three times per day in compliance with SCAQMD Rule 403, Fugitive Dust (RR AQ-1).

As shown in Table 4-3, the emissions are compared with the SCAQMD Air Quality Significance Thresholds (SCAQMD 2011a). The SCAQMD considers exceedance of these thresholds to be a significant impact under CEQA.

TABLE 4-3
PRELIMINARY ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
2013 SUMMER SEASON (POUNDS/DAY)

Source	NOx	PM10
Off-road equipment	59	9
Aggregate processing PM	–	3
Material transfer (batch drops) PM	–	3
On-road truck (exhaust)	59	2
On-road PM	–	885
Storage piles PM	–	2
Total	**118**	**904**
SCAQMD significance thresholds	*100*	*150*
Exceeds Threshold?	***Yes***	***Yes***

NOx: nitrogen oxides; PM10: respirable particulate matter with a diameter of 10 microns or less; PM: particulate matter; SCAQMD: South Coast Air Quality Management District.

Source: SCAQMD 2011a (thresholds). Calculation data in Appendix A.

As shown in Table 4-3, without emissions reductions, NOx and PM10 emissions would exceed the SCAQMD significance thresholds. Based on this preliminary estimate, the LACFCD formulated two options for transferring sediment from BTR to Maple Canyon SPS, as described in the Project Description (Section 3.2 of this IS/MND). The Low Emission Trucking Option would incorporate Project Design Features (PDFs) AQ-1, AQ-2, and AQ-3. PDF AQ-1 would require that the sediment transport activities between BTR and Maple Canyon SPS be limited to approximately 400 round-trip truck trips within a given day. PDF AQ-2 would require the Project to use either all low-emission construction equipment or all low-emission haul trucks. PDF AQ-3 would pave all currently unpaved roads to be used for sediment hauling between BTR, Maple Canyon SPS, and the aggregate stockpile site except for a 0.33-mile section that traverses the reservoir.

The Conveyor Belt System Option would replace the truck hauling of sediment with a conveyor belt that runs from BTR to Maple Canyon SPS. Trucks would still be used to move processed aggregate to the stockpile, and these trips were included in the assumptions for the analysis. The existing unpaved roads would not need to be paved under the Conveyor Belt System Option. These two options are analyzed below.

Low Emission Trucking Option

Table 4-4 presents the estimated maximum daily emissions for the proposed Project Low Emission Trucking Option (including PDFs AQ-1 through AQ-3) using construction equipment with Tier 3 engines with no reduced emission requirement for on-road trucks. As shown in Table 4-4, with incorporation of PDFs AQ-1 through AQ-3, emissions of PM10 would be significant.

In order to further reduce fugitive dust emissions to a less than significant level, MM AQ-1 requires that the soils within the 0.33-mile portion of the access road be consistently maintained in a damp state to ensure dust reductions. Watering dry soil 3 times per day, as assumed for the unmitigated calculation, would achieve an approximate 61 percent reduction in fugitive dust. The incorporation of MM AQ-1 would achieve a minimum of 75 percent reduction in fugitive dust, which is the required minimum reduction to achieve SCAQMD thresholds for PM10. Because the 0.33-mile unpaved portion of the access road is within the reservoir bottom, it would contain residually damp soils from the dewatering activities. MM AQ-1 requires implementation of an Exposed Soils Watering Plan, which must establish a watering regime that ensures adequate soil saturation along the unpaved portion of the access route. Once the watering regime is established, it shall be monitored on a daily basis during construction activities to ensure compliance with the “consistently maintained damp state” requirement. As shown in Table 4-4, with implementation of MM AQ-1, impacts associated PM10 would be less than significant using the Tier 3 off-road equipment.

TABLE 4-4
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
2013 SUMMER SEASON – LOW EMISSION TRUCK OPTION WITH TIER 3 OFF-ROAD EQUIPMENT (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
Without Mitigation					
Off-road equipment	5	32	45	8	4
Aggregate processing PM	–	–	–	3	3
Material transfer (batch drops) PM	–	–	–	2	<0.5
On-road truck (exhaust)	4	59	16	2	1
On-road PM	–	–	–	156	17
Storage piles PM	–	–	–	2	2
Total	**9**	**91**	**61**	**173**	**27**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***Yes***	***No***
With Mitigation (MM AQ-1)					
Off-road equipment	5	32	45	8	4
Aggregate processing PM	–	–	–	3	3
Material transfer (batch drops) PM	–	–	–	2	<0.5
On-road truck (exhaust)	4	59	16	2	1
On-road PM	–	–	–	104	9
Storage piles PM	–	–	–	2	2
Total	**9**	**91**	**61**	**121**	**19**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***

VOC: volatile organic compounds; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; PM: particulate matter; MM: mitigation measure; SCAQMD: South Coast Air Quality Management District.

Note: Totals may not add due to rounding.

Source: SCAQMD 2011a (thresholds). Calculation data in Appendix A.

Table 4-5 presents the estimated maximum daily emissions for the proposed Project Low Emission Trucking Option (including PDFs AQ-1 through AQ-3) using 2010 or newer engines in on-road trucks with no reduced emissions requirements for off-road equipment. In order to further reduce fugitive dust emissions to a less than significant level, MM AQ-1 requires the soils within the 0.33-mile portion of the access road to be consistently maintained in a damp state to ensure dust reductions. In order to ensure compliance with this performance standard, MM AQ-1 requires implementation of an Exposed Soils Watering Plan, which must establish a watering regime that ensures adequate soil saturation along the unpaved portion of the access route. The incorporation of MM AQ-1 would achieve a minimum of 75 percent reductions in fugitive dust. As shown in Table 4-5, with implementation of MM AQ-1, impacts associated PM10 would be less than significant with the use of 2010 engines in off-road equipment.

TABLE 4-5
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
2013 SUMMER SEASON – LOW EMISSION TRUCK OPTION WITH
2010 ENGINES IN ON-ROAD EQUIPMENT (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
Without Mitigation					
Off-road equipment	8	59	46	9	5
Aggregate processing PM	–	–	–	3	3
Material transfer (batch drops) PM	–	–	–	3	<0.5
On-road truck (exhaust)	2	17	7	<0.5	<0.5
On-road PM	–	–	–	156	17
Storage piles PM	–	–	–	2	2
Total	**10**	**76**	**53**	**173**	**28**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***Yes***	***No***
With Mitigation (MM AQ-1)					
Off-road equipment	8	59	46	9	5
Aggregate processing PM	–	–	–	3	3
Material transfer (batch drops) PM	–	–	–	3	<0.5
On-road truck (exhaust)	2	17	7	<0.5	<0.5
On-road PM	–	–	–	104	9
Storage piles PM	–	–	–	2	2
Total	**10**	**76**	**53**	**121**	**20**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***

VOC: volatile organic compounds; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less PM: particulate matter; MM: mitigation measure; SCAQMD: South Coast Air Quality Management District.

Note: Totals may not add due to rounding.

Source: SCAQMD 2011a (thresholds). Calculation data in Appendix A.

As shown in Tables 4-4 and 4-5, with incorporation of PDFs AQ-1 and AQ-2, as well as MM AQ-1, maximum daily emissions would be less than the SCAQMD significance thresholds.

Conveyor Belt System Option

Table 4-6 shows estimated emissions for the Conveyor Belt System Option. There would be no on-road trucking of sediment from BTR to Maple Canyon SPS; there would only be on-road trucking of processed aggregate to the aggregate stockpile. The Conveyor Belt System Option would be powered by electricity from local power lines; thus, there would be no on-road truck traffic. The off-road equipment operating within Maple Canyon SPS and BTR would remain unchanged with the Low Emission Trucking Option. PDFs AQ-1 through AQ-3 would not be implemented under the Conveyor Belt System Option.

TABLE 4-6
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
2013 SUMMER SEASON – CONVEYOR BELT OPTION (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
Off-road equipment	8	59	46	9	5
Aggregate processing PM	–	–	–	3	3
Material transfer (batch drops) PM	–	–	–	2	<0.5
On-road truck (exhaust)	<0.5	2	1	<0.5	<0.5
On-road PM	–	–	–	36	9
Storage piles PM	–	–	–	2	2
Conveyor belt PM	–	–	–	3	3
Total	**8**	**61**	**47**	**55**	**23**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***

VOC: volatile organic compounds; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; PM: particulate matter; SCAQMD: South Coast Air Quality Management District.

Totals may not add due to rounding.

Source: SCAQMD 2011a (thresholds). Calculation data in Appendix A.

As shown in Table 4-6, maximum daily emissions with the Conveyor Belt System Option would be less than the SCAQMD significance thresholds and no mitigation would be required.

Winter Season – Aggregate Hauling

Emissions for the winter season, when Project operations would be limited to hauling aggregate from the Project site to an aggregate company or other approved sites permitted to accept/process such materials, were calculated as described above. It was assumed that there would be 28 round trips per day; the on-road haul would be an approximate 40-mile round trip on paved roads; and idle times would be 5 minutes at either end of the haul. Estimated emissions are shown in Table 4-7. Maximum daily emissions would be less than the SCAQMD significance thresholds and no mitigation would be required.

TABLE 4-7
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
2013 WINTER SEASON (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
Off-road equipment	<0.5	2	2	<0.5	<0.5
Material transfer (batch drops) PM	–	–	–	1	<0.5
On-road truck (exhaust)	1	18	4	1	<0.5
On-road PM	–	–	–	–	–
Storage piles PM	–	–	–	2	2
Total	**1**	**20**	**6**	**4**	**3**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***

VOC: volatile organic compounds; NOx: nitrogen oxides; CO: carbon monoxide; PM10: respirable particulate matter with a diameter of 10 microns or less; PM2.5: fine particulate matter with a diameter of 2.5 microns or less; PM: particulate matter; SCAQMD: South Coast Air Quality Management District.

Totals may not add due to rounding.

Source: SCAQMD 2011a (thresholds). Calculation data in Appendix A.

SPS Revegetation

After the sediment removal and placement and aggregate removal activities, there would be approximately five years of revegetation activities at Maple Canyon SPS (see Section 3.1.5 of this MND and PDF AES-1). Emission sources for these revegetation activities would include: (1) equipment used for installing water tanks at the Maple Canyon SPS; (2) occasional truck trips bringing water and planting material to the site and light vehicle trips for revegetation crew commute; and (3) equipment used for removing water tanks from the Maple Canyon SPS and asphalt from the access road. The associated emissions would be minimal as daily activity would be notably less intense when compared to other aspects of the Project. The daily emissions would be negligible and no mitigation is required**.**

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant With Mitigation. The South Coast Air Basin is a nonattainment area for Lead,[10] O_3, NO_2, PM10, and PM2.5. The proposed Project would generate these pollutants during construction. As shown in Tables 4-4 through 4-7 above, construction emissions would not exceed SCAQMD CEQA significance thresholds for the Low Emission Vehicle Option with incorporation of MM AQ-1, and would not exceed thresholds for the Conveyor Belt System Option without mitigation.

A potential for short-term cumulative impacts related to air quality could occur if Project-related maintenance activities and nearby construction activities were to occur simultaneously and impact a common receptor. In general, with respect to local impacts, cumulative construction-related emissions of fugitive dust are considered when projects are located within a few hundred yards of each other. There are no anticipated construction projects within an approximate four-mile radius of the Project site (i.e., the distance between the Project site and

[10] In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (e.g., battery manufacturers and lead smelters) and is not undertaken for infrastructure development projects.

the nearest residential community in La Crescenta-Montrose), with the exception of the Southern California Edison (SCE) transmission line project, which would be constructed within 200 feet of Maple Canyon SPS. SCE is anticipated to be constructing "Segment 11" of the Tehachapi Renewable Transmission (TRTP) project beginning in 2013 and continuing for approximately 1.5 years. The proposed Project would begin after April 15, 2015. Therefore, construction activities on Segment 11 would not occur simultaneously and, therefore, would not result in a cumulatively considerable air quality impact. Once the Project is complete, there would be no long-term changes to the regular inspection and maintenance operations at BTR or Maple Canyon SPS. Therefore, with incorporation of MM AQ-1, there would be less than significant impacts related to the Project's long-term cumulative contribution to the air quality violations in the South Coast Air Basin, and no additional mitigation would be required.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The one residence in the vicinity of the Project site is the Dam Operator's residence, which is located more than 0.4 mile from BTR and Maple Canyon SPS. At this distance, impacts from pollutants generated in BTR and Maple Canyon SPS would not be of concern and would be less than significant.

The nearest sensitive receptors (i.e., residential homes) to the Project site include a few rural residential/vacation homes located along Vogel Flat Road/Stoneyvale Road located within the boundaries of the Forest approximately 2 miles west of the Project site, or approximately 2.7 vehicular travel miles down Big Tujunga Canyon Road. The trailhead at Condor Peak is the closest designated trail to the Project site. The trailhead is located approximately 1.2 miles southeast of the BTR entrance road, which leads to a trail designated as "13W05" that travels in a northerly direction into the Forest. Heavy truck and equipment activity would be limited to the Project site (i.e., BTR and Maple Canyon SPS) and the air quality emissions would disperse over the distance to the trail head. During the storm season, trucks would be transporting aggregate for re-use along Big Tujunga Canyon Road, but these trucks would not generate substantial pollutants, as previously presented in Table 4-7. Therefore, there is no potential to expose sensitive receptors to substantial pollutant concentrations. The impact would be less than significant and no mitigation is required.

e) Would the project create objectionable odors affecting a substantial number of people?

Less than Significant Impact. The Project does not involve new land uses that could generate objectionable odors, such as manufacturing or industrial operations. Only construction/ maintenance-related odors would be generated, such as those that occur with asphalt paving and the operation of diesel engine construction equipment. Additionally, some sediment may have objectionable odors resulting from decaying organic material. However, other than the Dam Operator, there are no people residing in the Project vicinity and no sensitive receptors that could be impacted by construction equipment-related odors. Impacts would be less than significant and no mitigation is required.

4.3.3 MITIGATION MEASURES

MM AQ-1 The unpaved approximate 0.33-mile portion of the access road that traverses through the reservoir shall be consistently maintained in a damp state to ensure dust reductions. The LACFCD shall prepare and implement an Exposed Soils Watering Plan, which shall establish a watering regime that ensures adequate soil saturation along the unpaved portion of the access route. A monitor shall be present on all days of truck activity on this portion of the access road to assess the dampness of the unpaved access roadway. Water trucks or other watering mechanisms will be available at all times of truck operation. If the monitor sees visible dust or particulate matter in the air caused by truck movement, watering shall occur immediately to stop fugitive dust. The requirement to implement and monitor the effectiveness of the Exposed Soils Watering Plan shall be included in the LACFCD's Contractor specifications.

4.4 BIOLOGICAL RESOURCES	**Potentially Significant Impact**	**Less than Significant with Mitigation**	**Less than Significant Impact**	**No Impact**
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Vegetation mapping, general plant and wildlife surveys, habitat assessments for special status species, several focused surveys, and a jurisdictional delineation has been completed in the Project area to determine the presence of biological resources that may be impacted by the Project. A summary of the findings of these surveys is provided below and include: (1) Biological Constraints Survey, June 20, 2011 (Appendix B-1); (2) Jurisdictional Delineation Report, July 2012 (Appendix B-2); (3) Results of Focused Presence/Absence Surveys for Arroyo Toad, October 11, 2011 (Appendix B-3); (4) Results of Presence/Absence Surveys for Sierra Madre Yellow-Legged Frog, January 4, 2012 (Appendix B-4); (5) Results of Focused Presence/Absence Surveys for Special Status Fish Species Surveys, October 5, 2011 (Appendix B-5); (6) Results of Focused Presence/Absence Surveys for Pacific Pond Turtle, January 4, 2012 (Appendix B-6); (7) Results of 2011 Focused Plant Surveys, December 5, 2011 (Appendix B-7); (8) Results of Focused Presence/Absence Least Bell's Vireo and Southwestern Willow Flycatcher Surveys, October 3, 2012 (Appendix B-8); and (9) Dewatering Flow Data Memorandum, January 24, 2013 (Appendix B-9).

4.4.1 EXISTING CONDITIONS

BTR, Maple Canyon SPS, and the adjacent areas support a variety of plant and wildlife species. Exhibit 4-3A, Vegetation Types and Disturbance Limits within Project Area, shows the vegetation communities mapped within the project area boundary, which includes BTR and immediately adjacent land. Exhibit 4-3B shows the vegetation communities mapped within the BTR access roads, Maple Canyon SPS, and immediately adjacent land. The resources existing in the Project area are described below and detailed in Appendix B-1.

Vegetation Types

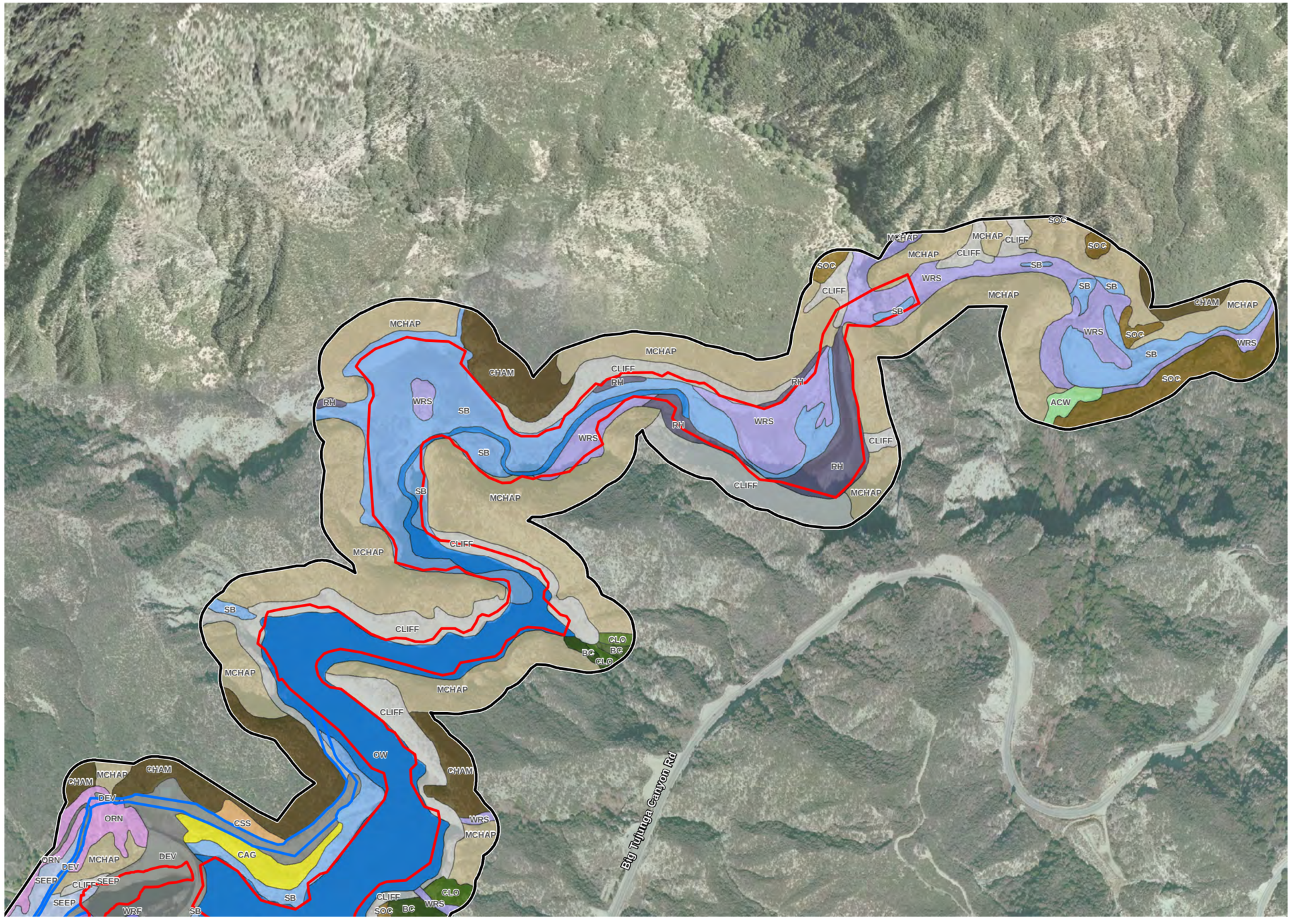
Big Tujunga Creek, upstream of BTR, consists of streambed and willow riparian scrub with some white alder-Fremont cottonwood–willow riparian forest. BTR is entirely open water during storm season. When the BTR water level is very low, it is dominated by open water with riparian herb, willow riparian scrub, and California annual grassland around the periphery of the reservoir. The reservoir is within a steep-sided canyon; areas around BTR consist of unvegetated cliffs, chamise chaparral, scrub oak chaparral, mixed chaparral, and a limited amount of coastal sage scrub and bigcone Douglas-fir-canyon live oak woodland (forest). Downstream of Big Tujunga Dam, vegetation types along the Big Tujunga Creek include disturbed freshwater seeps, willow riparian forest, coast live oak, and ornamental. The haul roads are mapped as disturbed (unvegetated) and are bordered by coastal sage scrub and California annual grassland. The upper portions and outer edges of Maple Canyon SPS consist of chamise chaparral, scrub oak chaparral, mixed chaparral, California sycamore woodland, coast live oak, and cliffs with the lower and central portions dominated by California annual grassland. Many of these vegetation types were burned in the 2009 Station Fire, but are now recovering. The locations of these vegetation types are depicted on Exhibits 4-3A and 4-3B.

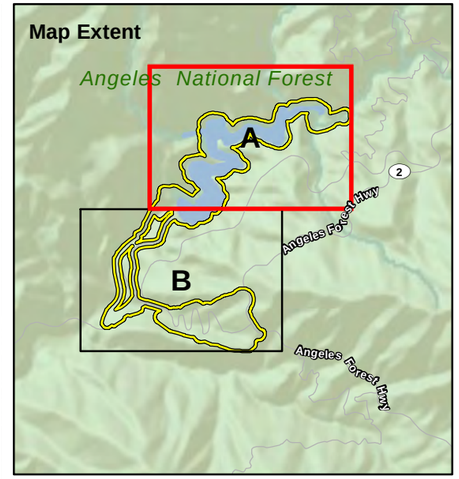
Coastal Sage Scrub: Common shrub species in this vegetation type include deerweed (*Acmispon glaber* [*Lotus scoparius*]), leafy California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), thick-leaved yerba santa (*Eriodictyon crassifolium*), poodle-dog bush (*Eriodictyon parryi* [*Turricula parryi*]), California-aster (*Corethrogyne filaginifolia* [*Lessingia filaginifolia*]), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and Our Lord's candle (*Hesperoyucca whipplei* [*Yucca whipplei*]).

Chamise Chaparral: This vegetation type has a relatively open canopy and is dominated by the large shrubs chamise (*Adenostoma fasciculatum* var. *fasciculatum*) and thick-leaved yerba santa.

Scrub Oak Chaparral: This vegetation type is dominated by scrub oak (*Quercus berberidifolia*) in some areas that were previously burned and is currently regrowing; other areas are dominated by canyon live oak (*Quercus chrysolepis*). The understory includes species such as California poppy (*Eschscholzia californica*), ripgut brome (*Bromus diandrus*), and foxtail chess (*Bromus madritensis* ssp. *rubens*).

Mixed Chaparral: These areas contain a mix of chaparral species, and vegetative cover is sparser than in the chamise chaparral with more exposed rock and bare ground present. Most of the slopes on which this vegetation type is found burned during the 2009 Station Fire and shrubs and trees are commonly sprouting from the base.





Project Area

Areas of Impact
- Sediment Removal Disturbance
- SPS Limit of Work
- Staging Areas
- Haul Routes

Vegetation Types
- CSS: Coastal Sage Scrub
- CHAM: Chamise Chaparral
- SOC: Scrub Oak Chaparral
- MCHAP: Mixed Chaparral
- CAG: California Annual Grassland
- SEEP: Disturbed Freshwater Seep
- RH: Riparian Herb
- WRS: Willow Riparian Scrub
- WRF: Willow Riparian Forest
- ACW: White Alder - Fremont Cottonwood - Willow Riparian Forest
- CSW: California Sycamore Woodland
- CLO: Coast Live Oak Stands
- BC: Bigcone Douglas Fir - Canyon Live Oak Woodland (Forest)
- CLIFF: Cliff
- OW: Open Water
- SB: Streambed
- ORN: Ornamental
- DEV: Developed

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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Vegetation Types and Disturbance Limits within Project Area

Exhibit 4-3A

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

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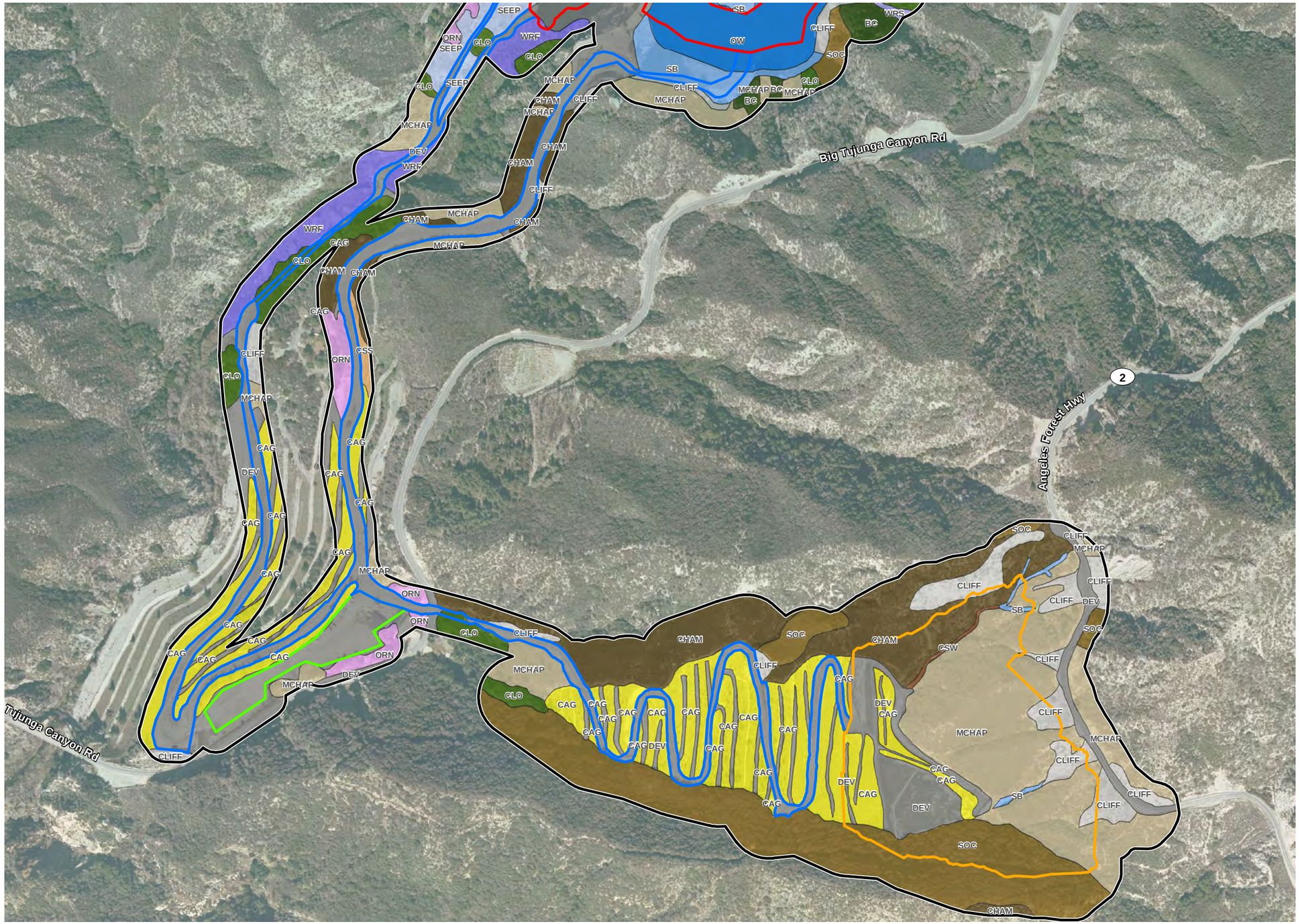

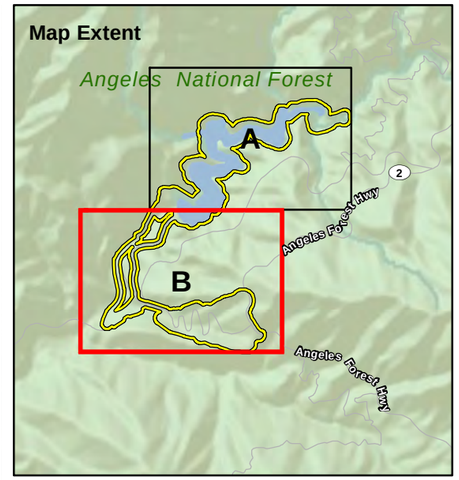

Project Area

Areas of Impact
- Sediment Removal Disturbance
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Vegetation Types
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- DEV: Developed

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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Vegetation Types and Disturbance Limits within Project Area

Exhibit 4-3B

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

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California Annual Grassland: This vegetation type is dominated by a variety of non-native grasses, including ripgut brome, foxtail chess, and wild oat (*Avena* sp.). Some scattered California poppy, Spanish broom (*Spartium junceum*), scrub oak, and pine (*Pinus* sp.) are also present.

Disturbed Freshwater Seep: These areas contain an underlying native component of species such as thick-leaved yerba santa, stream orchid (*Epipactis gigantea*), cryptantha (*Cryptantha* sp.), and deerweed. However, these areas were described as disturbed because the area contains a large proportion of non-native species such as crofton weed (*Ageratina adenophora*), Mediterranean schismus (*Schismus barbatus*), fescue (*Festuca* sp. [*Vulpia* sp.]), foxtail chess, ripgut brome, wild oat, red-stemmed filaree (*Erodium cicutarium*), and tree tobacco (*Nicotiana glauca*).

Riparian Herb: This vegetation type is generally dominated by herbaceous species such as seep monkeyflower (*Mimulus guttatus*), bentgrass (*Agrostis* sp.), smilo grass (*Piptatherum miliaceum*), long-leaved rush (*Juncus macrophyllus*), great marsh evening primrose (*Oenothera elata*), great water speedwell (*Veronica anagallis-aquatica*), water cress (*Nasturtium officinale* [*Rorippa nasturtium-aquaticum*]), common beggar-ticks (*Bidens pilosa*), annual beard grass (*Polypogon monspeliensis*), willow weed (*Persicaria lapathifolia* [*Polygonum lapathifolium*]), crofton weed, white sweetclover (*Melilotus alba*), scarlet monkeyflower (*Mimulus cardinalis*), barnyard grass (*Echinochloa crus-galli*), false daisy (*Eclipta prostrata*), and tall umbrella-sedge (*Cyperus eragrostis*).

Willow Riparian Scrub: This vegetation type is dominated by arroyo willow (*Salix lasiolepis*) and mule fat (*Baccharis salicifolia*) with lesser amounts of red willow (*Salix laevigata*) and Goodding's black willow (*Salix gooddingii*). The understory contains western poison oak (*Toxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), branching phacelia (*Phacelia ramosissima*), crofton weed, and white sweetclover.

Willow Riparian Forest: This vegetation type is dominated by a mix of arroyo willow and Goodding's black willow with an understory containing tree tobacco, ripgut brome, and chaparral nightshade (*Solanum xanti*). A few scattered white alder (*Alnus rhombifolia*) and Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) are also present. This vegetation type burned during the 2009 Station Fire, and willow trees are re-sprouting from the base.

White Alder-Fremont Cottonwood-Willow Riparian Forest: This vegetation type is composed of white alder, Fremont cottonwood, red willow, black willow, and Pacific willow (*Salix lasiandra* var. *lasiandra* [*Salix lucida* ssp. *lasiandra*]), with some tall arroyo willows.

California Sycamore Woodland: This vegetation type is dominated by scattered stands of California sycamore with arroyo willow, black willow, and red willow in the overstory. Other shrubs and perennial herbs in the understory consist of California brickellbush (*Brickellia californica*), narrow-leaved fuchsia (*Epilobium canum*), branching phacelia, everlasting (*Pseudognaphalium canescens* [*Gnaphalium canescens*]), seep monkeyflower, bentgrass, and showy monkeyflower (*Mimulus floribundus*).

Coast Live Oak: These areas consist of a stand of coast live oak (*Quercus agrifolia*) trees. The stand along the access road leading to Maple Canyon SPS has an understory of chamise, thick-leaved yerba santa, Our Lord's candle, black sage, deerweed, and chaparral nightshade. The stand along the access road downstream of the Dam contains a sparse understory of non-native grasses with much bare ground. No significant fire damage to oak trees was noted during the field survey.

Bigcone Douglas-Fir-Canyon Live Oak Woodland (Forest): This vegetation type is dominated by bigcone Douglas-fir (*Pseudotsuga macrocarpa*) and canyon live oak. This area was inaccessible during the surveys because it was on a steep slope above the reservoir, but other species expected to be present include those found in the mixed chaparral, such as scrub oak and birch-leaf mountain-mahogany (*Cercocarpus betuloides* var. *betuloides*).

Cliff: Cliff faces consist of steep slopes that are rocky and largely unvegetated.

Open Water: The BTR and Big Tujunga Creek (upstream of the reservoir) contain areas of open water. Water levels were high during the initial survey and made much of the canyon (upstream of the Dam) inaccessible. Water levels decreased over the course of the season, and the areas above the Dam were more accessible later in the season. Open water flowing through other vegetation types, such as downstream of the Dam along Big Tujunga Creek, was not mapped separately per the mapping methodology used (BonTerra Consulting 2011b).

Streambed: Areas mapped as streambed are the portions of Big Tujunga Creek that are currently unvegetated along the active channel. These areas consist of gravel, sandbars, or sediment deposits with scattered woody debris. Some scattered vegetation, including old "islands" of broad-leaved cattail (*Typha latifolia*) or germinating herbaceous species, are also present in the streambed; these vegetated areas were too small and patchy to be mapped separately.

Ornamental: Ornamental plants include common oleander (*Nerium oleander*), gum (*Eucalyptus* sp.), pine, and coast live oak.

Developed Areas: These areas consist of the Dam facilities, access roads, debris piles, concrete canyon walls, and riprap.

Wildlife

Big Tujunga Creek has perennial flows through Big Tujunga Canyon. Upstream and downstream of BTR, several tributaries feed into Big Tujunga Creek. These features within Big Tujunga Canyon are favorable for fish species, and several native fish species were observed in Big Tujunga Creek during surveys, including Santa Ana sucker, arroyo chub (*Gila orcutti*), and Santa Ana speckled dace (*Rhinichthys osculus* ssp. 3). Only non-native species were observed in the BTR, and include bIack bullhead (*Ameiurus melas*) and green sunfish (*Lepomis cyanellus*).

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Big Tujunga Creek provides quality habitat for amphibians, and several species were observed during surveys, including western toad (*Bufo boreas*), arroyo toad (*Anaxyrus californicus* [*Bufo microscaphus californicus*]), California treefrog (*Pseudacris* [*Hyla*] *cadaverina*), Baja California treefrog (*Pseudacris hypochondriaca* [*Hyla regilla*]), and American bullfrog (*Lithobates* [*Rana*] *catesbeianus* [*catesbeiana*]).

Diversity and abundance of reptiles typically varies with vegetation type and substrate characteristics. The Pacific [western] pond turtle (*Actinemys* [*Emys*] *marmorata*), red-eared slider (*Trachemys scripta elegans*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western skink (*Plestidon* [*Eumeces*] *skiltonianus*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), southern alligator lizard (*Elgaria multicarinata*), and two-striped garter snake (*Thamnophis hammondii*) were observed during the survey.

Birds utilize nearly all vegetation types with greater variety and occur in higher densities in particularly valuable vegetation types. Riparian habitats are extremely important to birds, providing food, water, and cover throughout the year. These habitats also provide important breeding habitat for a wide variety of species. Bird species observed during surveys include mallard (*Anas platyrhynchos*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), black-crowned night-heron (*Nycticorax nycticorax*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), peregrine falcon (*Falco peregrinus*), spotted dove (*Streptopelia chinensis*), mourning dove (*Zenaida macroura*), common poorwill (*Phalaenoptilus nuttallii*), white-throated swift (*Aeronautes saxatalis*), black-chinned hummingbird (*Archilochus alexandri*), Costa's hummingbird (*Calypte costae*), Allen's hummingbird (*Selasphorus sasin*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), western wood-pewee (*Contopus sordidulus*), Hammond's flycatcher (*Empidonax hammondii*), Pacific-slope flycatcher (*Empidonax difficilis*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus cinerascens*), Cassin's vireo (*Vireo cassinii*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), Steller's jay (*Cyanocitta stelleri*), violet-green swallow (*Tachycineta thalassina*), northern rough-winged swallow (*Stelgidopteryx serripennis*), cliff swallow (*Petrochelidon pyrrhonota*), oak titmouse (*Baeolophus inornatus*), rock wren (*Salpinctes obsoletus*), canyon wren (*Catherpes mexicanus*), Bewick's wren (*Thryomanes bewickii*), American dipper (*Cinclus mexicanus*), phainopepla (*Phainopepla nitens*), orange-crowned warbler (*Oreothlypis* [*Vermivora*] *celata*), yellow warbler (*Setophaga petechia* [*Dendroica petechia*]), yellow-rumped warbler (*Dendroica coronata*), black-throated gray warbler (*Dendroica nigrescens*), Wilson's warbler (*Wilsonia pusilla*), spotted towhee (*Pipilo maculatus*), California towhee (*Melozone* [*Pipilo*] *crissalis*), sage sparrow (*Amphispiza belli*), song sparrow (*Melospiza melodia*), dark-eyed junco (*Junco hyemalis*), black-headed grosbeak (*Pheucticus melanocephalus*), lazuli bunting (*Passerina amoena*), brown-headed cowbird (*Molothrus ater*), Bullock's oriole (*Icterus bullockii*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Spinus* [*Carduelis*] *psaltria*), Lawrence's goldfinch (*Spinus* [*Carduelis*] *lawrencei*), and American goldfinch (*Spinus* [*Carduelis*] *tristis*).

Mammal species observed during surveys include deer mouse (*Peromyscus maniculatus*), gray fox (*Urocyon cinereoargenteus*), common raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and mule deer (*Odocoileus hemionus*). Additional mammal species expected to occur in the Project area include desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), bobcat (*Lynx rufous*), and mountain lion (*Puma* [*Felis*] *concolor*). A variety of bat species are expected to occur as well, including long-legged myotis (*Myotis volans*), California myotis (*Myotis californicus*), western pipistrelle (*Pipistrellus hesperus*), big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*).

Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information. Corridors mitigate the effects of this fragmentation by (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes

from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (e.g., fire or disease) result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other necessary resources.

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (e.g., foraging for food or water, defending territories, or searching for mates, breeding areas, or cover). A number of terms such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" have been used in various wildlife movement studies to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and to facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

- ***Travel Route.*** A travel route is a landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and to provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitat areas and provides a relatively direct link between target habitat areas.
- ***Wildlife Corridor.*** A wildlife corridor is a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bound by urban land or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors, often referred to as "habitat or landscape linkages", can provide both transitory and resident habitat for a variety of species.
- ***Wildlife Crossing.*** A wildlife crossing is a small, narrow area, relatively short in length and generally constricted in nature, which allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent "choke points" along a movement corridor, which may impede wildlife movement and increase the risk of predation.

It is important to note that, in a large open space area where there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and to provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles such as roads and highways, the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food and water, and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

Big Tujunga Canyon is in open space in the Angeles National Forest that provides high-quality wildlife habitat. Generally, wildlife movement is unrestricted in the Project area; however, to some wildlife species Big Tujunga Dam poses a barrier. Fish species occur along Big Tujunga Creek, but are generally restricted to either upstream of BTR or downstream of the Dam, as Big Tujunga Dam poses a barrier that fish typically are not able pass. Amphibians and reptiles are not limited by Big Tujunga Dam as they typically utilize ridgelines and upland habitat for movement between areas. Birds are agile species and can more easily move through habitats. Big Tujunga Dam would not pose a barrier to bird species traveling in the Project area. Mammal species generally follow streams, roads, and ridgelines and would be able to move about the Project area, without being restricted by Big Tujunga Dam.

Special Status Biological Resources

The California Native Plant Society's (CNPS') Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2011, 2012, 2013) and the California Department of Fish and Wildlife's (CDFW's)[11] California Natural Diversity Database (CNDDB) (CDFG 2011b, 2012; CDFW 2013) were reviewed prior to the survey to identify special status plants, wildlife, and habitats known to occur in the vicinity of the proposed Project. Database searches were updated for this documentation. Database searches included the U.S. Geological Survey (USGS) Sunland, Condor Peak, Chilao Flat, Burbank, Pasadena, and Mount Wilson 7.5-minute quadrangles. Special status species reported from the Project region (the Angeles National Forest and the USGS quadrangles listed) and considered in this analysis are listed in Tables 4-8 and 4-9. Special status species were observed in the Project area during focused surveys. Exhibit 4-4, Special Status Species Locations, depicts the locations of observance of these species, both within and nearby the Project survey area. Exhibit 4-5, Critical Habitat, depicts the designated critical habitats for both the arroyo toad and the Santa Ana sucker in the vicinity of the Project site.

Special Status Vegetation Types

Coastal Sage Scrub

Coastal sage scrub has declined approximately 70 to 90 percent in its historic range in California (Noss and Peters 1995). Sage scrub has largely been lost to land use changes in Southern California basins and foothills. The ecological function of Southern California's remaining sage scrub is threatened by habitat fragmentation, invasive non-native species, livestock grazing, off-highway vehicles, altered fire regime, and perhaps air pollution (O'Leary 1995). Coastal sage scrub provides habitat for several special status plant species as well as food, cover, and nesting for many wildlife species.

Riparian

When the water level in BTR is very low, riparian vegetation types that grow around the periphery of the BTR include disturbed freshwater seep, riparian herb, willow riparian scrub, willow riparian forest, and white alder-Fremont cottonwood-willow riparian forest. In Maple Canyon SPS there are 0.23 acres of California sycamore woodland. These vegetation types provide important biological functions for an ecosystem, such as providing vegetation cover and a water source for wildlife, filtration of runoff water, groundwater recharge, flood control, and sediment stabilization. As a result, the resource agencies often consider these vegetation types to be important resources.

[11] As of January 1, 2013, the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW).

These vegetation types may be subject to permit conditions, as regulated by the USACE, the CDFW, and the RWQCB pursuant to Section 404 of the Clean Water Act and Section 1600 et seq. of the *California Fish and Game Code.* The USACE takes jurisdiction over areas considered "waters of the U.S." and wetlands. Jurisdictional waters are typically defined by the ordinary high water mark and other specific criteria. Wetlands, a subset of jurisdictional waters, are defined as those that possess the following three parameters: (1) hydrology that provides permanent or periodic inundation by groundwater or surface water; (2) hydric soils; and (3) hydrophytic vegetation. CDFW jurisdictional limits are similar to USACE jurisdiction, but include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. The limits of CDFW jurisdiction are often defined by riparian vegetation. A jurisdictional delineation for the entire Project area was conducted in September and October of 2011 (Appendix B-2) when the water level of BTR was at its very lowest level of the year. A total of 77.39 acres of "waters of the U.S." is present in the Project area, including 67.43 acres in BTR; 8.24 acres in Big Tujunga Creek south of the Dam; and 1.72 acres in Maple Canyon SPS. A total of 88.16 acres under the jurisdiction of the CDFW is present in the Project area, including 68.06 acres in BTR; 16.31 acres in Big Tujunga Creek south of the Dam; and 3.79 acres in Maple Canyon SPS (BonTerra Consulting 2012a).

Coast Live Oak

Coast live oak is a special status vegetation type that occurs in several areas along the southeastern portion of BTR and along the haul route. Oak forests and woodlands provide food, cover, and nesting or denning habitat for many wildlife species.

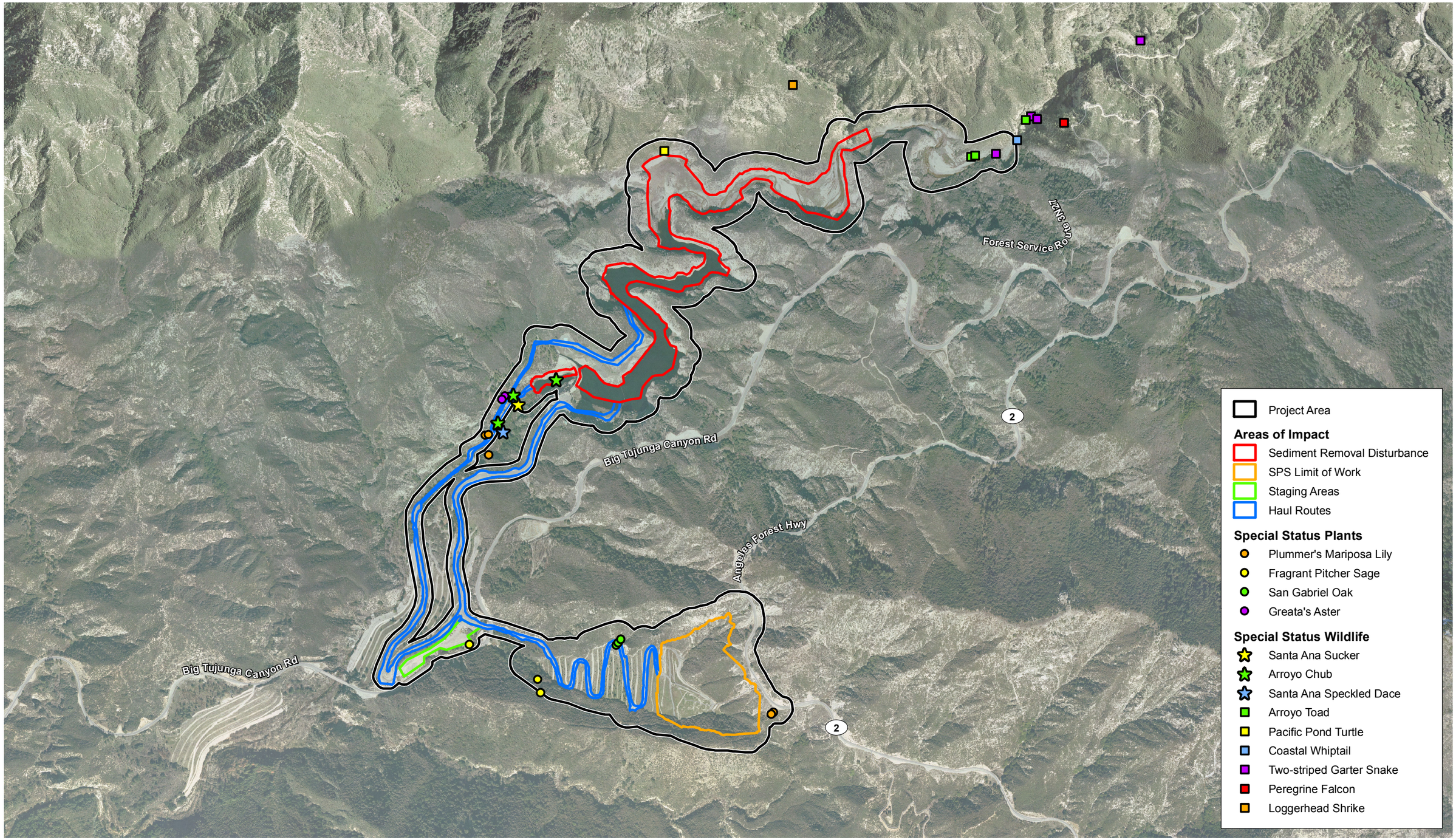
Bigcone Douglas-Fir-Canyon Live Oak

Bigcone Douglas-Fir-Canyon Live Oak occurs along the southeastern portion of BTR. The USFS lists bigcone Douglas-fir as a Management Indicator Species[12]. This species occurs in the Transverse and Peninsular Ranges of Southern California, where it occurs in areas that are typically too dry to support other coniferous species. Bigcone Douglas-fir is commonly associated with canyon live oak (McDonald 1990). Bigcone Douglas-fir is fire tolerant through adaptations such as thick bark and the ability to resprout following fire; however, it is vulnerable to repeated fires. Due to this, bigcone Douglas-fir is threatened by altered fire regime (Howard 1992). The CDFW considers vegetation alliances ("series") dominated by bigcone Douglas-fir to be vulnerable to extirpation or extinction within the state of California (CDFG 2010).

Significant Ecological Areas

The Project is not located in a Significant Ecological Area (SEA), according to the County General Plan. However, the Project is located within the San Gabriel Mountains, approximately 6 miles upstream of SEA Number 24: Tujunga Valley/Hansen Dam (LACDRP 2011b). The County of Los Angeles established SEAs in 1976 to designate areas with sensitive environmental conditions and/or resources in order to preserve biological diversity. SEA boundaries are general in nature, and broadly outline the biological resources of concern. The Tujunga Valley/Hansen Dam SEA (No. 24) supports resources that are limited in Los Angeles County such as coastal sage scrub and several species of plants, including Nevin's barberry (*Berberis nevinii*) and slender-horned spineflower (*Dodecahema* [*Chorizanthe*] *leptoceras*), both federally and State-listed Endangered species. In addition to small pockets of fresh water

[12] Management Indicator Species are selected by the USFS and defined by the Forest Land and Resource Management Plan for the ANF as "representative species whose habitat conditions and/or population changes are used to assess the impacts of management activites on speices in similar habitats in a particular area" (USFS 2005).



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Special Status Species Locations

Exhibit 4-4

Big Tujunga Reservoir Sediment Removal Project

N W E S

1,000 500 0 1,000 Feet

Bonterra CONSULTING

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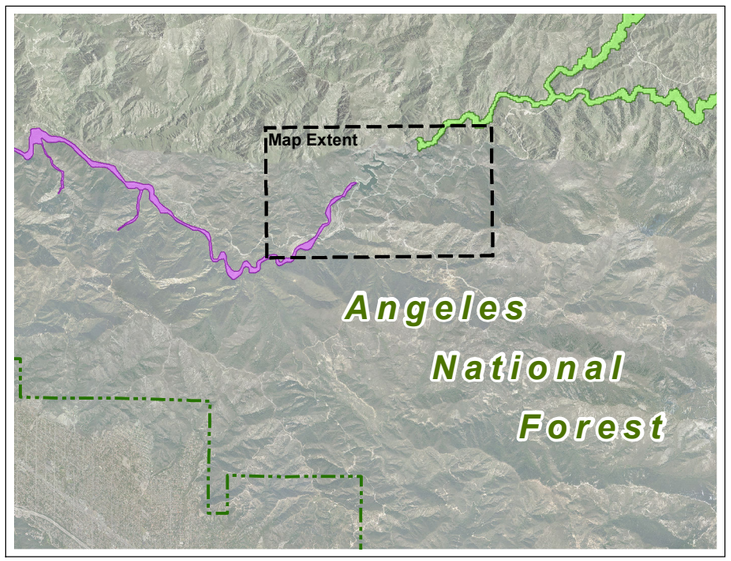

Big Tujunga Canyon Rd

Big Tujunga Canyon Rd

Forest Service Route 3N27

Angeles Forest Hwy

Angeles Forest Hwy

Angeles Forest Hwy

Big Tujunga Canyon Rd

2

2

2

Project Area

Areas of Impact

- Sediment Removal Disturbance
- SPS Limit of Work
- Staging Areas
- Haul Routes

Critical Habitat

- Santa Ana Sucker Critical Habitat (2010 Final)
- Arroyo Toad Critical Habitat (2011 Final)

Special Status Wildlife

- Santa Ana Sucker
- Arroyo Toad

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Critical Habitat

Exhibit 4-5

Big Tujunga Reservoir Sediment Removal Project

N W E S

1,000 500 0 1,000 Feet

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marsh areas—which offer foraging and nesting for marsh birds, migratory waterfowl, and shore birds—this SEA is recognized as a valuable wildlife corridor between the Verdugo Mountains and the San Gabriel Mountains (LACDRP 2011b).

Special Status Plant Species

Focused plant surveys were conducted within the Project study area boundary, as depicted on Exhibit 4-4 (Appendix B-7). Table 4-8 summarizes the focused survey results and characterizes the habitat suitability for each special status plant species known to occur in the Project region. Four special status plant species were observed during focused surveys: Plummer's mariposa lily (*Calochortus plummerae*), fragrant pitcher sage (*Lepechinia fragrans*), San Gabriel oak (*Quercus durata* var. *gabrielensis*), and Greata's aster (*Symphyotrichum greatae*). These species are discussed further below; their locations are shown in Exhibit 4-4.

TABLE 4-8
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status				Likelihood for Occurrence
	USFWS	CDFW	CRPR	USFS	
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	–	–	1B.2	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Astragalus brauntonii Braunton's milk-vetch	FE	–	1B.1	FSS	Not expected to occur; outside known range.
Atriplex parishii Parish's brittlescale	–	–	1B.1	–	Not expected to occur; no suitable habitat.
Berberis nevinii Nevin's barberry	FE	SE	1B.1	–	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
California macrophylla round-leaved filaree	–	–	1B.1	–	Not expected to occur; no suitable habitat.
Calochortus clavatus var. *gracilis* slender mariposa lily	–	–	1B.2	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Calochortus palmeri var. *palmeri* Palmer's mariposa lily	–	–	1B.2	FSS	Not expected to occur; no suitable habitat.
***Calochortus plummerae* Plummer's mariposa lily**	**–**	**–**	**4.2**	**FSS**	**Suitable habitat present. Observed during focused surveys.**
Calochortus striatus alkali mariposa lily	–	–	1B.2	FSS	Not expected to occur; no suitable habitat; outside known range.
Camissoniopsis lewisii Lewis' evening-primrose	–	–	3	–	Not expected to occur; no suitable habitat.
Castilleja gleasonii Mount Gleason paintbrush	–	SR	1B.2	FSS	Not expected to occur; no suitable habitat; outside known range.
Centromadia parryi ssp. *australis* southern tarplant	–	–	1B.1	–	Not expected to occur; no suitable habitat.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	FC	SE	1B.1	FSS	Not expected to occur; outside known range.
Chorizanthe parryi var. *parryi* Parry's spineflower	–	–	1B.1	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.

TABLE 4-8
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status				Likelihood for Occurrence
	USFWS	CDFW	CRPR	USFS	
Cladium californicum California saw-grass	–	–	2.2	–	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Dodecahema leptoceras slender-horned spineflower	FE	SE	1B.1	–	Not expected to occur; no suitable habitat.
Dudleya multicaulis many-stemmed dudleya	–	–	1B.2	FSS	Not expected to occur; no suitable habitat.
Galium grande San Gabriel bedstraw	–	–	1B.2	FSS	Not expected to occur; no suitable habitat.
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	–	–	1A	–	Not expected to occur; no suitable habitat; presumed extinct.
Horkelia cuneata ssp. *puberula* mesa horkelia	–	–	1B.1	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Imperata brevifolia California satintail	–	–	2.1	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	–	–	1B.1	–	Not expected to occur; no suitable habitat.
***Lepechinia fragrans* fragrant pitcher sage**	**–**	**–**	**4.2**	**FSS**	**Suitable habitat present. Observed during focused surveys.**
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	–	–	1B.2	–	Not expected to occur; no suitable habitat.
Linanthus concinnus San Gabriel linanthus	–	–	1B.2	FSS	Not expected to occur; outside known elevational range.
Linanthus orcuttii Orcutt's linanthus	–	–	1B.3	–	Not expected to occur; no suitable habitat.
Lupinus peirsonii Peirson's lupine	–	–	1B.3	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Malacothamnus davidsonii Davidson's bush-mallow	–	–	1B.2	–	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Muhlenbergia californica California muhly	–	–	4.3	–	Not expected to occur; no suitable habitat.
Opuntia basilaris var. *brachyclada* short-joint beavertail	–	–	1B.2	FSS	Not expected to occur; no suitable habitat.
Orobanche valida ssp. *valida* Rock Creek broomrape	–	–	1B.2	FSS	Not expected to occur; no suitable habitat.
Pseudognaphalium leucocephalum white rabbit-tobacco	–	–	2.2	–	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
***Quercus durata* var. *gabrielensis* San Gabriel oak**	**–**	**–**	**4.2**	–	**Suitable habitat present. Observed during focused surveys.**
Ribes divaricatum var. *parishii* Parish's gooseberry	–	–	1A	–	Not expected to occur; no suitable habitat; presumed extinct.

TABLE 4-8
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status				Likelihood for Occurrence
	USFWS	CDFW	CRPR	USFS	
Symphyotrichum greatae **Greata's aster**	**–**	**–**	**1B.3**	–	**Suitable habitat present. Observed during focused surveys.**
Symphyotrichum defoliatum San Bernardino aster	–	–	1B.2	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.
Thelypteris puberula var. *sonorensis* Sonoran maiden fern	–	–	2.2	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank; USFS: U.S. Forest Service.

Note: The Project Region is defined as the Angeles National Forest and the USGS Sunland, Condor Peak, Chilao Flat, Burbank, Pasadena, and Mount Wilson 7.5-minute quadrangles.

Status Definitions

Federal (USFWS)		State (CDFW)		Federal (USFS)	
FE	Endangered	SE	Endangered	FSS	Forest Service Sensitive
FC	Candidate	SR	Rare		

California Rare Plant Rank (CRPR) List Categories

List 1A	Plants Presumed Extinct in California
List 1B	Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2	Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3	Plants that require more information before they can be assigned to another rank or rejected
List 4	Plants of Limited Distribution – A Watch List

CRPR Threat Code Extensions

None	Plants lacking any threat information
.1	Seriously Endangered in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2	Fairly Endangered in California (20–80% of occurrences threatened)
.3	Not Very Threatened in California (low degree/immediacy of threat or no current threats known)

Plummer's Mariposa Lily

Plummer's mariposa lily has a California Rare Plant Rank (CRPR) of 4 and is listed as a Forest Service Sensitive Species for the Angeles National Forest. It typically blooms between May and July. This perennial bulbiferous herb occurs in coastal sage scrub; dry, rocky chaparral; and yellow-pine forest at elevations between sea level and approximately 5,580 feet above msl (Baldwin et al. 2012). This species is known from the South Coast and Peninsular Ranges (Baldwin et al. 2012). Thirty individuals were observed in five populations in the Project area on rocky cliff faces and burned chaparral. Three locations were observed along the haul route between Big Tujunga Reservoir and Maple Canyon SPS, and two locations were observed in the extreme upper portions of Maple Canyon SPS.

Fragrant Pitcher Sage

Fragrant pitcher sage has a CRPR of 4.2 and is listed as a Forest Service Sensitive Species for the Angeles National Forest. It typically blooms between March and October. This perennial shrub occurs in chaparral vegetation at elevations between sea level and approximately 4,265 feet above msl (Baldwin et al. 2012). It is known from the Western Transverse Ranges, the San Gabriel Mountains, the South Coast, and the northern Channel Islands. Fourteen individuals were observed in three locations in the Project area in mixed-scrub oak chaparral and coastal sage scrub.

San Gabriel Oak

San Gabriel oak has a CRPR of 4.2. It occurs on granitic soil in chaparral at elevations between approximately 1,475 and 3,280 feet above msl (Baldwin et al. 2012). It is known from the southeast Western Transverse Ranges and southern slopes of the San Gabriel Mountains (Baldwin et al. 2012). Forty-eight individuals were observed in three locations in Maple Canyon SPS in mixed chaparral, chamise chaparral, and burned mixed chaparral. This species is on a CNPS "watch list" for plants of limited distribution.

Greata's Aster

Greata's aster has a CRPR of 1B.3. It typically blooms between June and October (CNPS 2011). This rhizomatous perennial herb occurs in damp places in canyons at elevations between approximately 985 and 6,560 feet above msl (Baldwin et al. 2012). It is known to occur in the southern slopes of the San Gabriel Mountains. Five individuals were observed in two locations in freshwater seep in the Project area.

Special Status Wildlife

Several focused special status wildlife surveys were conducted in the Project area: (1) special status fish including Santa Ana sucker, arroyo chub, and Santa Ana speckled dace (Appendix B-5); (2) arroyo toad (Appendix B-3); (3) Sierra Madre yellow-legged frog (*Rana muscosa*) (Appendix B-4); (4) Pacific pond turtle (Appendix B-6); and (5) southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*) (Appendix B-8). Table 4-9 summarizes the focused survey results and characterizes the habitat suitability for each special status wildlife species known to occur in the Project region. Results of the focused special status wildlife surveys are discussed further below; locations of special status species observed during focused surveys are shown on Exhibit 4-4.

TABLE 4-9
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Fish				
Catostomus santaanae **Santa Ana sucker**	**FT**	**SSC**	**FSS**	**Suitable habitat present. Observed downstream of the Dam during focused surveys (not observed in plunge pool). Absent from BTR and upstream of BTR.**
Gila orcuttii **arroyo chub**	**–**	**SSC**	**FSS**	**Suitable habitat present. Observed downstream of the Dam and in the plunge pool during focused surveys. Absent from BTR and upstream of BTR.**
Rhinichthys osculus **ssp. 3 Santa Ana speckled dace**	**–**	**SSC**	**FSS**	**Suitable habitat present. Observed downstream of the Dam during focused surveys (not observed in plunge pool). Absent from BTR and upstream of BTR.**

TABLE 4-9
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Amphibians				
***Anaxyrus* [*Bufo*] californicus** **arroyo toad**	**FE**	**SSC**	**–**	**Suitable habitat present. Observed upstream of BTR along Big Tujunga Creek during focused surveys. Limited potential to occur downstream of the Dam along Big Tujunga Creek south of the Dam (not surveyed).**
Rana muscosa Sierra Madre yellow-legged frog	FE	SSC	FSS	Not expected to occur because not observed during focused surveys; potentially suitable habitat present.
Taricha torosa torosa Coast Range newt	–	SSC	–	May occur; potentially suitable habitat present.
Reptiles				
Anniella pulchra pulchra silvery legless lizard	–	SSC	FSS	May occur; potentially suitable habitat present.
Aspidoscelis tigris stejnegeri **coastal whiptail**	**–**	**SA**	**–**	**Suitable habitat present. Incidentally observed upstream of BTR during focused surveys.**
Charina trivirgata rosy boa	–	–	FSS	Not expected to occur; not historically known from Big Tujunga Creek.
Actinemys* [*Emys*] *marmorata **Pacific [western] pond turtle**	**–**	**SSC**	**FSS**	**Suitable habitat present. Observed in BTR during focused surveys.**
Phrynosoma blainvillii coast [San Diego] horned lizard	–	SSC	FSS	May occur; potentially suitable habitat present.
Thamnophis hammondii **two-striped garter snake**	**–**	**SSC**	**FSS**	**Suitable habitat present. Incidentally observed upstream of BTR during focused surveys.**
Birds				
Athene cunicularia burrowing owl	–	SSC	–	Not expected to occur; no suitable habitat present.
Cypseloides niger black swift	–	SSC	–	May occur; potentially suitable habitat present.
Empidonax traillii extimus southwestern willow flycatcher	FE	SE	FSS	Not expected to occur because not observed during focused surveys; limited suitable habitat currently within study area due to recent fire.
Falco peregrinus **American peregrine falcon**	**–**	**FP**	**FSS**	**Suitable habitat present. Incidentally observed during focused surveys.**
Polioptila californica californica coastal California gnatcatcher	FT	SSC	FSS	Not expected to occur; outside known range.
Lanius ludovicianus **loggerhead shrike**	**–**	**SSC**	**–**	**Suitable habitat present. Incidentally observed north of BTR (outside the Project area) during focused surveys.**
Vireo bellii pusillus least Bell's vireo	FE	SE	FSS	Not expected to occur because not observed during focused surveys; above known elevational range.

TABLE 4-9
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Mammals				
Lasiurus blossevillii western red bat	–	SSC	FSS	May occur; potentially suitable foraging and roosting habitat present.
Corynorhinus townsendii Townsend's big-eared bat	–	SSC	FSS	May occur; potentially suitable foraging and roosting habitat present.
Antrozous pallidus pallid bat	–	SSC	FSS	May occur; potentially suitable foraging and roosting habitat present.
Eumops perotis californicus western bonneted [mastiff] bat	–	SSC	–	May occur; potentially suitable foraging and roosting habitat present.
Lasionycteris noctivagans silver-haired bat	–	SA	–	May occur; potentially suitable foraging and roosting habitat present.
Lasiurus cinereus hoary bat	–	SA	–	May occur; potentially suitable foraging and roosting habitat present.
Lasiurus xanthinus western yellow bat	–	SSC	–	May occur; potentially suitable foraging and roosting habitat present.
Lepus californicus bennettii San Diego black-tailed jackrabbit	–	SSC	–	Not expected to occur; no suitable habitat present.
Neotoma lepida intermedia San Diego desert woodrat	–	SSC	–	May occur; potentially suitable habitat present.
Nyctinomops macrotis big free-tailed bat	–	SSC	–	May occur; potentially suitable foraging and roosting habitat present.
Onychomys torridus ramona southern grasshopper mouse	–	SSC	–	May occur; potentially suitable habitat present.
Taxidea taxus American badger	–	SSC	–	May occur; potentially suitable habitat present.

The Project Region is defined as the Angeles National Forest and the USGS Sunland, Condor Peak, Chilao Flat, Burbank, Pasadena, and Mount Wilson 7.5-minute quadrangles.

Status Definitions

Federal Status
FE Federally Listed Endangered
FT Federally Listed Threatened

State Status
SA Special Animal
SE State listed as Endangered
SSC Species of Special Concern
FP California Fully Protected

Forest service status
FSS Forest Service Sensitive Species

Note: Scientific and common names for wildlife species follow the most current list of Special Animals available from the California Department of Fish and Game (CDFG 2011a).

Fish

Santa Ana Sucker

The Santa Ana sucker is a federally listed Threatened species and a California Species of Special Concern (USFWS 2010, CDFW 2011a). Its historic range consisted of the Los Angeles, San Gabriel, and Santa Ana River systems; only these populations within its historic range are federally protected (USFWS 2010). Santa Ana sucker is found in small, shallow streams with flows that run from slow to swift. They are most abundant where water is clear and unpolluted, although they can withstand seasonal turbidity. Santa Ana sucker is often associated with

bottom materials of boulders, gravel, and cobble where there are growths of filamentous algae; they are also occasionally found on sand or mud substrates.

During the August 17, 2011, survey, 1 large adult Santa Ana sucker was captured and 20 others were visually observed in Big Tujunga Creek immediately downstream of the plunge pool (upstream of the access road) (see Exhibits 4-4 and 4-5). No Santa Ana suckers were observed in BTR or upstream of the reservoir along Big Tujunga Creek.

On January 4, 2005, the USFWS published a Final Rule designating 8,305 acres of critical habitat for the Santa Ana sucker along the San Gabriel River and along Big Tujunga Creek (USFWS 2005). In 2009, the USFWS proposed a revised critical habitat to include habitat along the Santa Ana River in Orange, Riverside, and San Bernardino counties (USFWS 2009). On December 14, 2010, the USFWS published the Final Rule formalizing the revised critical habitat, which includes the plunge pool and downstream areas of BTR (Exhibit 4-5) (USFWS 2010).

Arroyo Chub

Arroyo chub is a California Species of Special Concern. It is a small freshwater fish native to the watersheds of the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers and those of the Malibu and San Juan Creeks. The arroyo chub has also been successfully introduced into the Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and other smaller coastal streams (Moyle 2002). During the August 17, 2011, survey, a total of 96 arroyo chubs were captured and over 150 others were visually observed in the plunge pool and in Big Tujunga Creek downstream of the plunge pool (BonTerra Consulting 2011d; see Exhibit 4-4). No arroyo chubs were observed in BTR or upstream of the reservoir along Big Tujunga Creek.

Santa Ana Speckled Dace

Santa Ana speckled dace is a California Species of Special Concern. The Santa Ana speckled dace has not been formally described as a subspecies. Santa Ana speckled dace was historically distributed throughout the upland portions of the Santa Ana, San Gabriel, and Los Angeles River systems, but it currently has a limited distribution in the headwaters of the Santa Ana and San Gabriel Rivers (Moyle et al. 1995). During the August 17, 2011, survey, one Santa Ana speckled dace was captured in Big Tujunga Creek downstream of the plunge pool (BonTerra Consulting 2011d; see Exhibit 4-4). No Santa Ana speckled daces were observed in BTR or upstream of the reservoir along Big Tujunga Creek.

Amphibians

Arroyo Toad

The arroyo toad is a federally listed Endangered species and a California Species of Special Concern. This toad only occurs in streams of southwestern California and northwestern Baja California, Mexico (USFWS 1994). In California, it primarily occurs along the Coast Ranges from San Luis Obispo County south to San Diego County, but also occurs at a few locations on the western edge of the desert (Jennings and Hayes 1994). The arroyo toad is generally found in semi-arid regions near washes or intermittent streams (Zeiner et al. 1988). This species has highly specialized habitat requirements such as breeding pools within approximately 300 feet of juvenile and adult habitat that consists of shoreline with stable, sandy terraces and little

herbaceous cover (Jennings and Hayes 1994). Streams must be of low velocity with sand or gravel substrate (Dudek 2003).

The arroyo toad survey area extended from just above the reservoir (open water) at the time of the survey (2011), to one mile upstream of the Project area. It should be noted that the upper reservoir limits vary with annual rainfall and season. One arroyo toad was observed along Big Tujunga Creek upstream of BTR during focused surveys (BonTerra Consulting 2011c). The same adult male was observed during surveys conducted on May 10, May 31, and June 14, 2011. While this particular toad was observed vocalizing on May 10 and May 31, evidence of successful breeding was not detected in the Project area on these or subsequent visits. The locations of the arroyo toad observations are presented on Exhibits 4-4 and 4-5. Focused surveys did not cover areas downstream of the Dam along Big Tujunga Creek because this area is outside the impact footprint. Previous focused surveys conducted over a 15-mile area from 1 mile downstream of the Big Tujunga Dam to Hansen Dam had negative survey findings (BonTerra Consulting 2011c). The arroyo toad is not expected to occur downstream of Big Tujunga Dam; however, suitable habitat is present and arroyo toad has a limited potential to occur along Big Tujunga Creek downstream of Big Tujunga Dam.

On April 13, 2005, the USFWS published a final rule to designate critical habitat for the federally Endangered arroyo toad (USFWS 2005b). This includes approximately 11,695 acres in Santa Barbara, Ventura, Los Angeles, San Bernardino, and Riverside Counties. The Project area is within designated critical habitat Unit 7 (Upper Los Angeles River Basin), which includes 1,190 acres in the Angeles National Forest. Unit 7 encompasses (1) approximately 8 miles of upper Big Tujunga Creek from immediately above the Big Tujunga Reservoir, upstream to 1.2 miles above its confluence with Alder Creek; (2) approximately 3.7 miles of Mill Creek from the Monte Cristo Creek confluence downstream to Big Tujunga Creek; and (3) 1.9 miles of Alder Creek from the Mule Fork confluence downstream to Big Tujunga Creek. Unit 7 supports an arroyo toad population that is considered important because it occurs at a relatively high elevation considered atypical for the species, and it is the only known population remaining in the coastal foothills of the San Gabriel Mountains. Exhibit 4-5 shows the designated critical habitat for the arroyo toad located in the upper portion of the Project area, upstream of BTR.

Sierra Madre Yellow-Legged Frog

The Sierra Madre yellow-legged frog is a federally listed Endangered species and a California Species of Special Concern. The southern distribution of the Sierra Madre yellow-legged frog consists of several small, isolated populations in the San Gabriel, San Bernardino, and San Jacinto Mountains, the largest of which does not exceed 100 individuals. The Sierra Madre yellow-legged frog occurred historically in Big Tujunga Creek immediately upstream of Foothill Boulevard (south of the Dam) and in Big Tujunga Creek, Mill Creek, and several tributary drainages above Big Tujunga Dam. There have been no documented observations of the population between Foothill Boulevard and Big Tujunga Dam since 1939, and it is considered extirpated.

The Sierra Madre yellow-legged frog survey area extended from just above the reservoir (open water) at the time of the survey (2011), to one mile upstream of the Project area. No Sierra Madre yellow-legged frogs were observed during focused surveys conducted in July and August 2011 (BonTerra Consulting 2012c).

On September 14, 2006, the USFWS published a final rule designating 8,283 acres of land as critical habitat in Los Angeles, San Bernardino and Riverside Counties (USFWS 2006b). The Project area is not located within critical habitat for this species.

Reptiles

Coastal Whiptail

Coastal whiptail is not formally listed by the resource agencies, but is tracked by the CNDDB as a Special Animal. The subspecies occurs from Ventura County south to Baja California, Mexico (Stebbins 2003). It is a moderately large, slender lizard typically found in open scrub, chaparral, and woodland vegetation types in semi-arid areas or where vegetation is sparse. It occurs in areas where the ground is firm, sandy, or rocky (Stebbins 2003). This species is threatened by loss of habitat (Jennings and Hayes 1994). Coastal whiptail was incidentally observed upstream of BTR during focused surveys in 2011 (BonTerra 2012a, 2011c, 2011d) (Exhibit 4-4).

Pacific [Western] Pond Turtle

The Pacific [western] pond turtle is a California Species of Special Concern and a Forest Service Sensitive Species in the Angeles National Forest. The current range of the Pacific pond turtle in Southern California extends south from the San Francisco Bay area (excluding Inyo, Mono, and Imperial Counties), with a broad range of intergradations from the American River south through the San Joaquin Valley. Isolated, extant populations are found in the interior-draining Mojave River of California at least as far into the Mojave Desert as Afton Canyon and in the Amargosa River in the vicinity of Lake Elizabeth in northern Los Angeles County.

The Pacific pond turtle was previously observed downstream of the Project area in Big Tujunga Creek south of the Dam (approximately two miles and eight miles downstream) and approximately six miles upstream at the confluence of Upper Big Tujunga Creek and Lynx Gulch. One Pacific pond turtle was observed in BTR during focused turtle trapping in 2011 (BonTerra 2012b) (Exhibit 4-4).

Two-Striped Garter Snake

Two-striped garter snake (*Thamnophis hammondii*) is a California Species of Special Concern. It occurs primarily in wetlands and is found in freshwater marsh and riparian habitats with perennial water. The two-striped garter snake feeds on small fishes, frogs, and tadpoles (Stebbins 2003). This highly aquatic species occurs from Monterey County south to Rio Rosario in Baja California, Mexico (Stebbins 2003). It is considered locally rare in southwestern California. Two-striped garter snake was incidentally observed upstream of BTR during focused surveys in 2011 (BonTerra 2012a, 2011c, 2011d) (Exhibit 4-4).

Birds

Southwestern Willow Flycatcher

The southwestern willow flycatcher is a federally and State-listed Endangered species. This subspecies has declined drastically due to a loss of breeding habitat and nest parasitism by the brown-headed cowbird. This species occurs in riparian habitats along rivers, streams, or other wetlands where dense growth of willows (*Salix* sp.), mule fat, arrow-weed (*Pluchea sericea*), tamarisk (*Tamarix* sp.), or other plants are present, often with a scattered overstory of cottonwood (USFWS 1995). The occurrence closest to Big Tujunga Canyon is from Santa Clara River along Soledad Canyon Road, approximately 12 miles from the Project area (CDFG 2012). Burned riparian habitat was still recovering from the 2009 Station Fire during spring/summer 2011, and was not mature enough to provide suitable habitat; therefore, no focused surveys were conducted in 2011. However, by spring 2012, habitat had grown to a size to be considered

marginally suitable for the species; therefore, focused surveys were conducted. One willow flycatcher (*Empidonax traillii* ssp.) of unknown subspecies was observed during the 2012 focused surveys; however, it was only observed on one survey date and is presumed to have been a migrant. No southwestern willow flycatchers were observed breeding in the Project area during focused surveys; therefore, this species is not expected to occur in the Project area.

On October 19, 2005, the USFWS published a Final Rule designating critical habitat for the southwestern willow flycatcher (USFWS 2005c). This Final Rule designated 120,824 acres in Arizona, California, Nevada, New Mexico, and Utah as critical habitat. Following lawsuits, this critical habitat designation was vacated by the Court, and the USFWS proposed a revised critical habitat designation on August 15, 2011. On January 3, 2013, the USFWS published a Final Rule designating 1,227 stream miles of critical habitat in California, Nevada, Utah, Colorado, Arizona, and New Mexico (USFWS 2013). The Proposed Rule used a slightly different methodology to designate critical habitat. For example, it includes areas that are considered essential for the recovery of the species even if they were not occupied at the time of the species' listing (USFWS 2013). The Project area is not located within critical habitat for this species.

American Peregrine Falcon

American peregrine falcon (*Falco peregrinus*) is a California Fully Protected species (nesting individuals are protected) and a Forest Service Sensitive species in the Angeles National Forest. It was formerly a federally and State-listed Endangered species, but has since recovered and was delisted by the USFWS and the California Department of Fish and Game (CDFG) in 1999 and 2009, respectively. As a delisted species, the American peregrine falcon will continue to be periodically monitored until 2015 (USFWS 2006a). American peregrine falcons prey almost exclusively on birds and use a variety of habitats, particularly wetlands and coastal areas. This falcon is a rare summer resident in Southern California, although it is more common during migration and the winter season. For nesting, this falcon prefers inaccessible areas such as cliffs, high building ledges, bridges, or other such structures.

A pair of American peregrine falcons and their nest was incidentally observed in the Project area during surveys (BonTerra 2012a, 2011d) (see Exhibit 4-4). All designated critical habitat for American peregrine falcon was removed upon publication of the Final Rule delisting this species (USFWS 1999).

Loggerhead Shrike

Loggerhead shrike (*Lanius ludovicianus*) is a California Species of Special Concern; nesting individuals are protected. Year-round, shrikes inhabit open habitats with short vegetation such as pastures, agricultural fields, riparian areas, and open woodlands (Yosef 1996). They can often be found perched on fences and posts from which prey items (e.g., large insects, small mammals, and lizards) can be seen. This species was widely distributed across North America, but has declined throughout most of its range in recent decades (Yosef 1996). It was considered to be a fairly common year-round resident in Southern California (Garrett and Dunn 1981), but has recently shown declines in its California population (Small 1994; Hamilton and Willick 1996). Loggerhead shrike was incidentally observed during focused surveys in 2011, north of BTR and outside the Project area (BonTerra 2012b) (Exhibit 4-4).

Least Bell's Vireo

The least Bell's vireo is a federally and State-listed Endangered species. While destruction of lowland riparian habitats has played a large role in driving this species to its present precarious situation, brood parasitism by brown-headed cowbirds is the most important factor in its decline (Garrett and Dunn 1981). Local cowbird-control programs have been very effective in maintaining some populations (Small 1994), and the species has begun to recover. The least Bell's vireo breeds primarily in riparian habitats dominated by willows with dense understory vegetation (USFWS 1986). The Project area occurs above the current known elevational range for this species.

Burned riparian habitat was still recovering from the 2009 Station Fire during spring/summer 2011, and was not mature enough to provide suitable habitat for this species; therefore, no focused surveys were conducted in 2011. However, by spring 2012, habitat had grown to a size to be considered marginally suitable for the species; therefore, focused surveys were conducted. No least Bell's vireos were observed in the Project area. On February 2, 1994, the USFWS published final critical habitat for the least Bell's vireo, designating approximately 37,560 acres of land in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties. The Project area is not located within critical habitat for this species.

4.4.2 IMPACT ANALYSIS

Project Design Features

PDF BIO-1 In order to avoid direct impacts on the arroyo toad and its critical habitat, the Project's sediment removal boundary has been reduced in the upper reach of the reservoir. No sediment removal activities shall occur within the designated critical habitat boundary.

PDF BIO-2 In order to minimize impacts on the Santa Ana sucker and its critical habitat, Dam releases for Project activities within the non-storm season (April 16 to October 14) shall not exceed 180 cubic feet per second (cfs), and Dam operations shall 'ramp' flows (i.e., step-wise increases and decreases) to mimic natural stream hydrology.

PDF BIO-3 The LACFCD's Contractor shall install water quality filtration Best Management Practices (BMPs) between the plunge pool and the mouth of Big Tujunga Creek. These BMPs—such as sand/gravel bags, silt fencing and/or other filtering devices— shall be placed to prevent sediment from exiting the plunge pool into downstream waters. Once installed, the BMPs would allow the plunge pool to serve as a large sedimentation basin in which waters released from the Dam would be temporarily retained to allow for sediments to drop to the bottom of the pool. These BMPs would be designed with the goal of incorporating every reasonable effort to prevent or limit the flow of disturbed sediment and particulate matter downstream during Project activities.

PDF BIO-4 Though not anticipated, if any coast live oak tree branches or roots need to be trimmed or maintained during Project implementation, an arborist shall be consulted to obtain recommendations that would avoid adversely affecting the health and viability of the oak trees. Any work performed on coast live oak trees shall be done under the direction of a certified Arborist.

Regulatory Requirements

RR BIO-1 The LACFCD shall obtain all necessary permits for impacts to "waters of the United States" and "waters of the State" from applicable resource agencies, including the United States Army Corps of Engineers (USACE), the Los Angeles Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW).

Impact Discussion

a) Would the project have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant With Mitigation. The federally Endangered arroyo toad and the federally Threatened Santa Ana sucker occur in the Project area, which are the only two wildlife species within the Project study area that have designated critical habitat. The arroyo toad and its critical habitat occur upstream of BTR along Big Tujunga Creek. The Santa Ana sucker and its critical habitat occur downstream of Big Tujunga Dam along Big Tujunga Creek. Impacts to special status species are discussed below.

Special Status Plants

Plummer's mariposa lily, fragrant pitcher sage, San Gabriel oak, and Graeta's aster are present in the habitat adjacent to the haul routes and Maple Canyon SPS; these species are not expected to be affected by the Project because the planned vegetation removal/sediment placement would not directly impact the observed plant locations. However, some of the special status plants are located immediately adjacent to haul routes, staging areas, and sediment placement locations and may be inadvertently impacted by the Project's construction activities. Potential impacts on fragrant pitcher sage would be considered potentially significant because this species is considered Endangered in California and a USFS Sensitive Species.

Impacts on Graeta's aster, Plummer's mariposa lily, and San Gabriel oak would be considered adverse but less than significant because the loss of these individuals would not reduce regional populations below self-sustaining levels; however, Plummer's mariposa lily is a USFS Sensitive Species. Implementation of MM BIO-6, requiring protective fencing of special status plants within 50 feet of construction, would be required to avoid inadvertent impacts on these species and would reduce potential impacts to less than significant.

Santa Ana Sucker

Habitat occupied by the Santa Ana sucker (just below the plunge pool along Big Tujunga Creek) would not be directly impacted by sediment removal activities. However, BTR and the plunge pool would be dewatered prior to sediment removal. Most of reservoir dewatering would occur during the typical storm season (October 15 to April 15); however, dewatering following installation of the bypass line and dewatering below minimum pool would occur in late April (and could be delayed further if a late-season storm occurred). The dewatering time period coincides with the spawning season for the sucker. A threshold (i.e., maximum) of this species' tolerance to storm or other high water flows has not yet been established. If dewatering occurs at a rate similar to a typical storm, the Santa Ana sucker can likely withstand the higher volume flows for

a limited period of time. However, if dewatering flows are large enough, they could displace sucker, and their eggs downstream of BTR, affecting their breeding activity.

Extreme fluctuations from high to low flows could also result in stranding the larval and juvenile stages of the fish in puddles along the edges of Big Tujunga Creek as flows recede. In order to determine whether dewatering would affect the Santa Ana sucker, the maximum storm flow releases from the Dam between March and May were compared to recent Santa Ana sucker population counts during long-term monitoring efforts for the Santa Ana sucker conducted in September–October of corresponding years (2009–2012). As shown in the Dewatering Flow Data Memorandum (BonTerra Consulting 2013; see Appendix B-9), the data does not indicate sucker populations (adults or juveniles) were impacted by increased flows from the Dam during March and April. While the data available for this analysis is limited to one year of high flows during this time period, it can be assumed that the Santa Ana suckers were able to persist during the previous periods of extremely high flows (e.g., 2005, 2006).

Additionally, while the Santa Ana sucker breeding season begins in March or April, it continues into May and even into the summer months if conditions are suitable. If high flows occur for extended periods of time in early spring, conditions would likely be suitable for spawning into the late spring and early summer months; Santa Ana sucker could delay spawning, or spawn again during these months, thereby allowing them to successfully breed. Dewatering would occur during the storm season (October 15 to April 15) to the maximum extent practicable. As described in PDF BIO-2, after April 16, water releases would not exceed 180 cfs and flows would be "ramped" (i.e., step-wise increases and decreases of flow rates) to mimic storm conditions to prevent stranding Santa Ana suckers downstream of the reservoir.

Dewatering the reservoir to the sediment level would likely increase the amount of sediment in the water releases. If sediment-laden water is released into Big Tujunga Creek, it could impact water quality for the Santa Ana sucker downstream of BTR, possibly harming eggs of the sucker. As required by PDF BIO-3, filtration BMPs would be used to capture sediment during dewatering, before it is released into Big Tujunga Creek. During sediment removal, a bypass line would carry flows from Big Tujunga Creek upstream of BTR to the creek near the plunge pool. Thus, the sucker population downstream would be subject to natural fluctuations in hydrology depending on weather patterns. During typical operating procedures, the LACFCD generally releases water from the reservoir at the same rate as the inflow into the reservoir; thus, the stream flows mimic natural conditions during the dry season. An analysis was performed on inflow/outflow data between May and September to verify whether water releases during the dry season have typically equaled inflow to the reservoir. While this time period included a wide range of natural variation with both extremely dry and wet years, the analysis verified that inflow typically equaled outflow. As shown in the Dewatering Flow Data Memorandum, September was the only month to show an inflow vs. outflow difference, which suggests that September may provide more water during bypass operations than has typically been released in this month during normal operations (BonTerra Consulting 2013).

Implementation of MM BIO-3 requires monitoring and reporting on the status of the Santa Ana sucker, endangered species protective measure performance, and conditions during dewatering and sediment removal activities, as well as consultation between the USFS and the USFWS in accordance with Section 7 of the FESA to ensure compliance with the FESA. Implementation of PDF BIO-2, PDF BIO-3, and compliance MM BIO-3 would reduce potential impacts to the Santa Ana sucker related to creek flows and sedimentation during dewatering to levels less than significant after mitigation. Based on the analysis in the Dewatering Flow Data Memorandum (BonTerra Consulting 2013; see Appendix B-9), and with the implementation of listed measures, no significant adverse impacts on the Santa Ana sucker are anticipated.

Arroyo Chub

Arroyo chub was found in the plunge pool during focused surveys. The proposed dewatering activities of the plunge pool would directly impact habitat for this species and would impact arroyo chub within the plunge pool. Any impact on arroyo chub would be considered significant because this species is considered to meet the criteria of Section 15380 of the CEQA Guidelines.[13] MM BIO-4 requires that special status fish species be relocated prior to dewatering. Compliance with MM BIO-4 would reduce potential impacts to the arroyo chub to less than significant levels after mitigation.

Arroyo Toad

Sediment removal activities in the upstream area of Big Tujunga Creek could directly impact arroyo toad if the species occurs within the impact area during vegetation clearing or excavation. As stated in PDF BIO-1, the sediment removal boundary has been reduced in order to avoid direct impacts on this species and its critical habitat. However, sediment removal activities would still occur adjacent to occupied critical habitat; any arroyo toads that inadvertently move into the sediment removal area could be impacted by construction activities. Any impact on the arroyo toad would be considered significant. Implementation of MM BIO-1 includes conservation measures for avoidance of the arroyo toad to reduce the potential impact to a less than significant level and requires consultation between the USFS and the USFWS in accordance with Section 7 of the FESA to ensure compliance with the FESA. Compliance with MM BIO-1 would reduce potential impacts to the arroyo toad in upstream areas of Big Tujunga Creek to less than significant.

Arroyo toad has a limited potential to occur along Big Tujunga Creek immediately downstream the Dam; no focused surveys have been conducted in this portion of the Project area. If arroyo toad occurs, toads could attempt to cross the haul roads to access upland habitat areas, and could be struck by construction vehicles on the roadway. Although vehicles currently move along the existing roadway, the number of vehicles and frequency would increase substantially during construction. Any impact on arroyo toad would be considered significant. MM BIO-2 requires that a pre-construction survey be conducted prior to commencement of dewatering activities to determine the presence or absence of this species below the Dam. Compliance with MM BIO-1 and MM BIO-2 would reduce potential impacts to the arroyo toad in downstream areas of Big Tujunga Creek to less than significant after mitigation.

Pacific Pond Turtle

The Pacific pond turtle was found in BTR during focused surveys; it could also occur in the plunge pool. The proposed dewatering and sediment removal activities would directly impact habitat for this species and could inadvertently impact any Pacific pond turtles within the construction area. Additionally, pond turtles crossing the haul routes or in the staging areas could be struck by vehicles. Although vehicles currently move along the existing roadway, the number of vehicles and frequency would increase substantially during construction. Impact on Pacific pond turtle would be considered potentially significant because this species is considered to meet the criteria of Section 15380 of the CEQA Guidelines. MM BIO-5 requires

[13] Section 15380 of the CEQA Guidelines indicates that a lead agency can consider a non-listed species (e.g., CRPR 1B plants) to be Endangered, Rare, or Threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of Rare or Endangered. For the purposes of this discussion, the current scientific knowledge on the population size and distribution for each special status species was considered in determining if a non-listed species met the definitions for “Rare” and “Endangered” according to Section 15380 of the CEQA Guidelines.

pre-construction trapping and relocation. Compliance with MM BIO-5 would reduce potential impacts to the Pacific pond turtle to less than significant levels after mitigation.

Other Special Status Wildlife

The Project would remove habitat for several other special status wildlife species observed (coastal whiptail, two-striped garter snake, and loggerhead shrike) or with potential to occur in the Project area (see Table 4-9). However, the loss of habitat for these species would not reduce populations below self-sustaining levels. Therefore, impacts on these species would be considered less than significant and no mitigation would be required. Although not required by CEQA, a pre-construction survey/monitoring has been included for two-striped garter snake in MM BIO-5 because it was compatible with the Pacific pond turtle required measure and would avoid or minimize impacts on the two-striped garter snake.

Santa Ana specked dace and American peregrine falcon occur outside of the Project area, therefore no impacts are expected on these species.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant With Mitigation. Vegetation types and other areas (unvegetated areas) that would be impacted by each Project element are shown in Table 4-10. Impacts on riparian habitat/jurisdictional areas and other special status vegetation types are discussed in more detail below; jurisdictional areas are discussed separately under Threshold 4.4(c) below.

TABLE 4-10
VEGETATION TYPES AND OTHER AREAS IMPACTED BY THE PROPOSED PROJECT

Vegetation Types	Existing (Acres)	Impact Areas (Acres)				Total Acres Impacted
		Sediment Removal Area (from BTR)	Haul Routes	SPS Limit of Work	Staging Areas	
Coastal Sage Scrub	1.02	0.00	0.00	0.00	0.00	**0.00**
Chamise Chaparral	30.25	0.00	0.00	2.49	0.00	**2.49**
Scrub Oak Chaparral	26.34	0.00	0.00	3.38	0.00	**3.38**
Mixed Chaparral	80.39	0.52	0.00	13.70	0.00	**14.22**
California Annual Grassland	23.82	0.00	0.00	2.68	0.02	**2.70**
Disturbed Freshwater Seep	2.61	0.08	0.00	0.00	0.00	**0.08**
Riparian Herb	4.42	3.31	0.00	0.00	0.00	**3.31**
Willow Riparian Scrub	12.38	5.74	0.00	0.00	0.00	**5.74**
Willow Riparian Forest	4.63	0.03	0.00	0.00	0.00	**0.03**
White Alder - Fremont Cottonwood – Willow Riparian Forest	0.62	0.00	0.00	0.00	0.00	**0.00**
California Sycamore Woodland	0.23	0.00	0.00	0.23	0.00	**0.23**
Coast Live Oak*	6.11	0.00	0.00	0.00	0.00	**0.00**
Bigcone Douglas Fir – Canyon Live Oak Woodland (Forest)	1.91	0.00	0.00	0.00	0.00	**0.00**
Cliff	26.04	1.97	0.15	1.22	0.00	**3.34**
Open Water	25.01	19.45	0.27	0.00	0.00	**19.72**
Streambed	25.29	13.82	0.56	0.29	0.00	**14.67**
Ornamental	4.85	0.00	0.07	0.00	0.00	**0.07**
Developed	43.63	1.48	16.97	5.23	3.37	**27.05**
Total	**319.55**	**46.40**	**18.02**	**29.22**	**3.39**	**97.03**

* Coast live oaks located within the impact boundary shown on Exhibit 4-3A and 4-3B represent the tree canopy of coast live oak trees over existing roadways. These oak trees are not located on the access roads and would not be removed.

Riparian Resources

Sediment Removal/Staging Areas

The Project's sediment removal activities and staging areas would impact a total of 9.16 acres of riparian vegetation (0.08 acre disturbed freshwater seep, 3.31 acres riparian herb, 5.74 acre willow riparian scrub, and 0.03 acre willow riparian forest). It is important to note that these aforementioned vegetation types were surveyed in summer and late fall of 2011, when the reservoir water level was very low. The area containing the vegetation is typically fully submerged during storm season as was found during surveys conducted in April 2011. Therefore, a full reservoir during the storm season does not allow for vegetation to naturally grow in the reservoir bottom. Active restoration has not occurred within the reservoir bottom; therefore, the surveyed reservoir riparian vegetation has grown independent of human intervention. This shows that a viable seed bank exists within the reservoir and that the reservoir seed bank is continually replenished from upstream seed sources. Based upon these observations, it is not necessary to reseed the reservoir for mitigation following the Project activities because the vegetation within the reservoir has proven to reestablish independently when the reservoir water level is low. These vegetation types are considered special status, and any loss of riparian vegetation would be considered significant. Compliance with RR BIO-1 requires obtaining the necessary permits for impacts to jurisdictional resources. Implementation of MM BIO-7, which requires obtaining regulatory permits from agencies, including a Section 404 Permit from the USACE, a Section 401 Permit from the RWQCB, and a Section 1600 Streambed Alteration Agreement from the CDFW would reduce impact to jurisdictional resources to a less than significant level after mitigation.

Maple Canyon SPS

Maple Canyon SPS would impact 0.23 acre California sycamore woodland. When Maple Canyon SPS was established, the permanent impacts to riparian vegetation that would result from all future sediment placements within the entire SPS footprint were considered and mitigation was completed within the watershed (ANF and LACFCD 1981). Therefore, impacts on California sycamore woodland are less than significant with inclusion of this previously implemented mitigation.

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It should be noted that the acreage of riparian vegetation mapped often exceeds the amount of jurisdictional areas in the study area because these areas are delineated with different methods. Vegetation mapping is conducted using aerial photographs and general field surveys, while very detailed measurements are taken for jurisdictional delineations. Therefore, permitting for projects is always based on the results of the jurisdictional delineation (see Threshold 4.4[c] below).

Coast Live Oak

Coast live oaks located within the impact boundary shown on Exhibit 4-3B represent the tree canopy of coast live oak trees over existing roadways. These oak trees are not located on the access roads and would not be removed. However, in the unanticipated event that an oak tree needs to be trimmed or maintained to accommodate trucks along the access road, PDF BIO-4 requires that all activities involving alterations to oak trees along access roads be monitored by a certified Arborist to ensure proper techniques are applied for the long-term health of the tree.

Impacts to coast live oaks from trimming and maintenance would be less than significant and no mitigation would be required.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant With Mitigation. Approximately 44.47 acres of non-wetland "waters of the U.S." would be temporarily impacted by the removal of sediment in BTR, of which 1.27 acres of non-wetland "waters of the U.S." would be temporarily impacted by the removal of sediment in the plunge pool. Sediment would be deposited in Maple Canyon SPS and would permanently impact 1.03 acres of non-wetland "waters of the U.S." by filling the drainage features in the upper portion of the SPS (Exhibits 4-6A–4-6B, USACE Jurisdictional Resources; see Table 4-11).

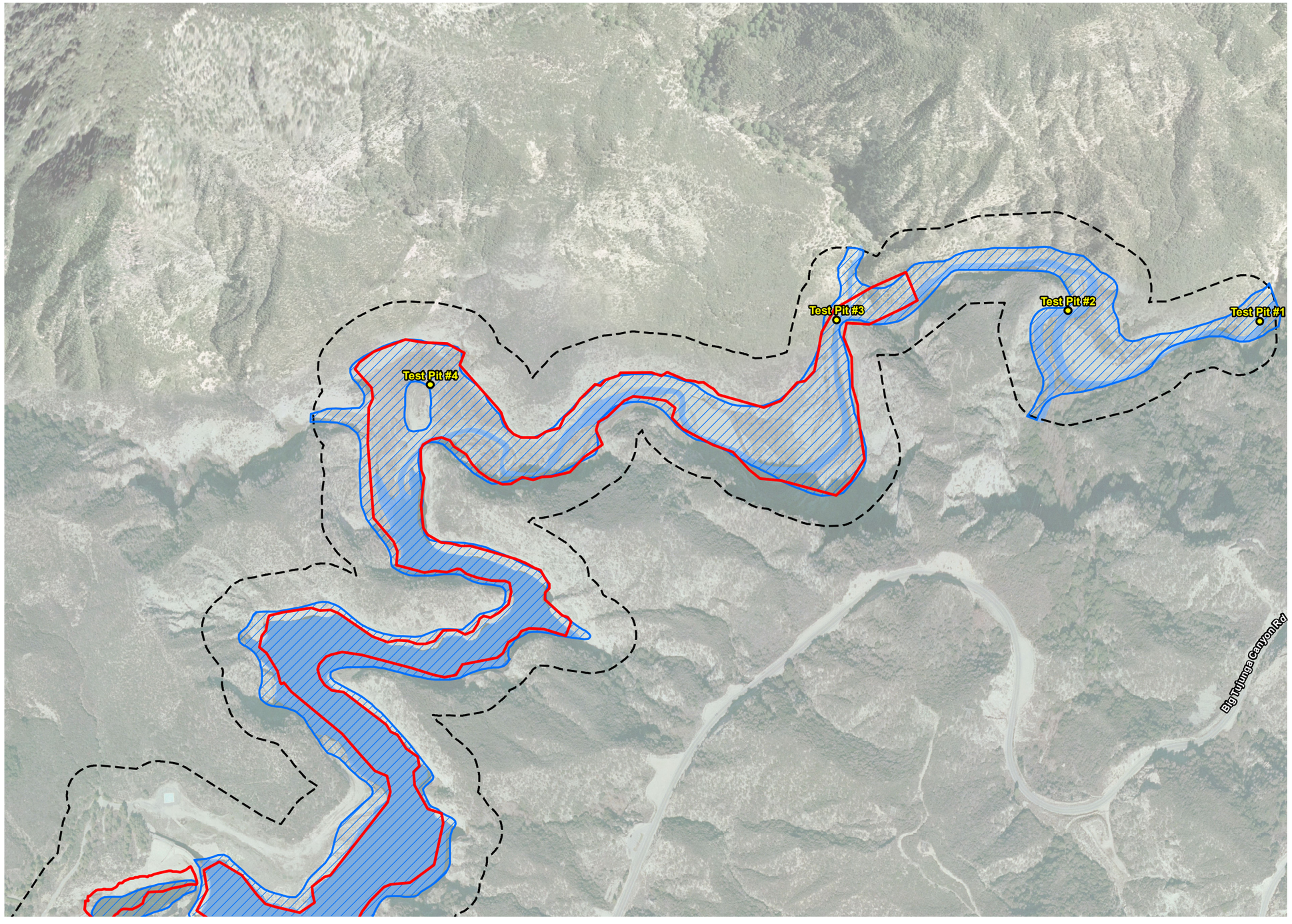
Approximately 44.60 acres of CDFW jurisdictional waters would be temporarily impacted by the removal of sediment in BTR, of which 1.40 acres of CDFW jurisdictional waters would be temporarily impacted by the removal of sediment in the plunge pool. Sediment would be deposited in Maple Canyon SPS and would permanently impact 1.76 acres of CDFW jurisdictional waters by filling the drainage features in the upper portion of the SPS (Exhibits 4-7A and 4-7B, CDFW Jurisdictional Resources; see Table 4-11).

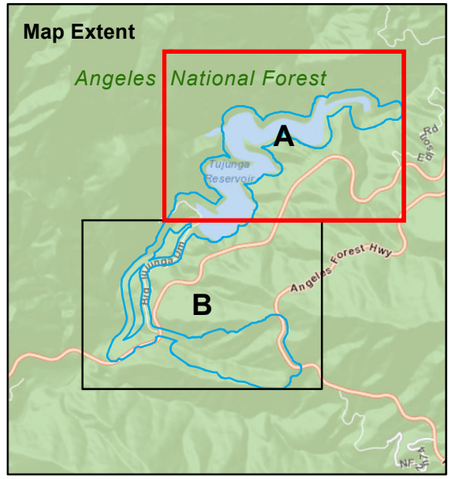
Following each year of sediment removal, the reservoir would be allowed to refill with water during each storm season; therefore, impacts within BTR and the plunge pool would be considered temporary. The only permanent impact would be the loss of jurisdictional areas within the upper portion of Maple Canyon SPS where the jurisdictional area would be filled with sediment. Compliance with RR BIO-1 requires obtaining the necessary permits for impacts to jurisdictional resources. Implementation of MM BIO-7—which requires obtaining regulatory permits from agencies, including a Section 404 Permit from the USACE, a Section 401 Permit from the RWQCB, and a Section 1600 Streambed Alteration Agreement from the CDFW—would reduce impact to wetlands to a less than significant level.

TABLE 4-11
JURISDICTIONAL "WATERS OF THE U.S."
AND CDFW JURISDICTIONAL WATERS

	USACE and RWQCB non-wetland "Waters of the U.S."			CDFW Jurisdictional Waters		
Project Areas	**Total Existing (acres)**	**Proposed Permanent Impact (acres)**	**Proposed Temporary Impact (acres)**	**Total Existing (acres)**	**Proposed Permanent Impact (acres)**	**Proposed Temporary Impact (acres)**
Big Tujunga Reservoir	67.43	0.00	43.20[a]	68.06	0.00	43.20[a]
Plunge Pool	1.51	0.00	1.27	1.97	0.00	1.40
Maple Canyon Sediment Placement Site	1.72	1.03	0.00	3.79	1.76	0.00
Big Tujunga Creek[b]	6.22	0.00	0.00	12.48	0.00	0.00
Total	**76.88**	**1.03**	**44.47**	**86.30**	**1.76**	**44.60**

[a] This impact consists of draining the open water for sediment removal.
[b] Note that 6.14 acres of "Waters of the U.S." and 12.0 acres of CDFW jurisdiction within Big Tujunga Creek that are included in this analysis are outside the Project area, but were included in the delineation to provide a complete description of site conditions.





Project Area

Test Pit Location

Proposed Limits of Sediment Removal

Proposed Limits of Sediment Deposition

Open Water*

USACE Jurisdiction

"Waters of the U.S." (width in feet)

"Waters of the U.S." (concrete channel)

"Waters of the U.S."

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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USACE Jurisdictional Resources

Exhibit 4-6A

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

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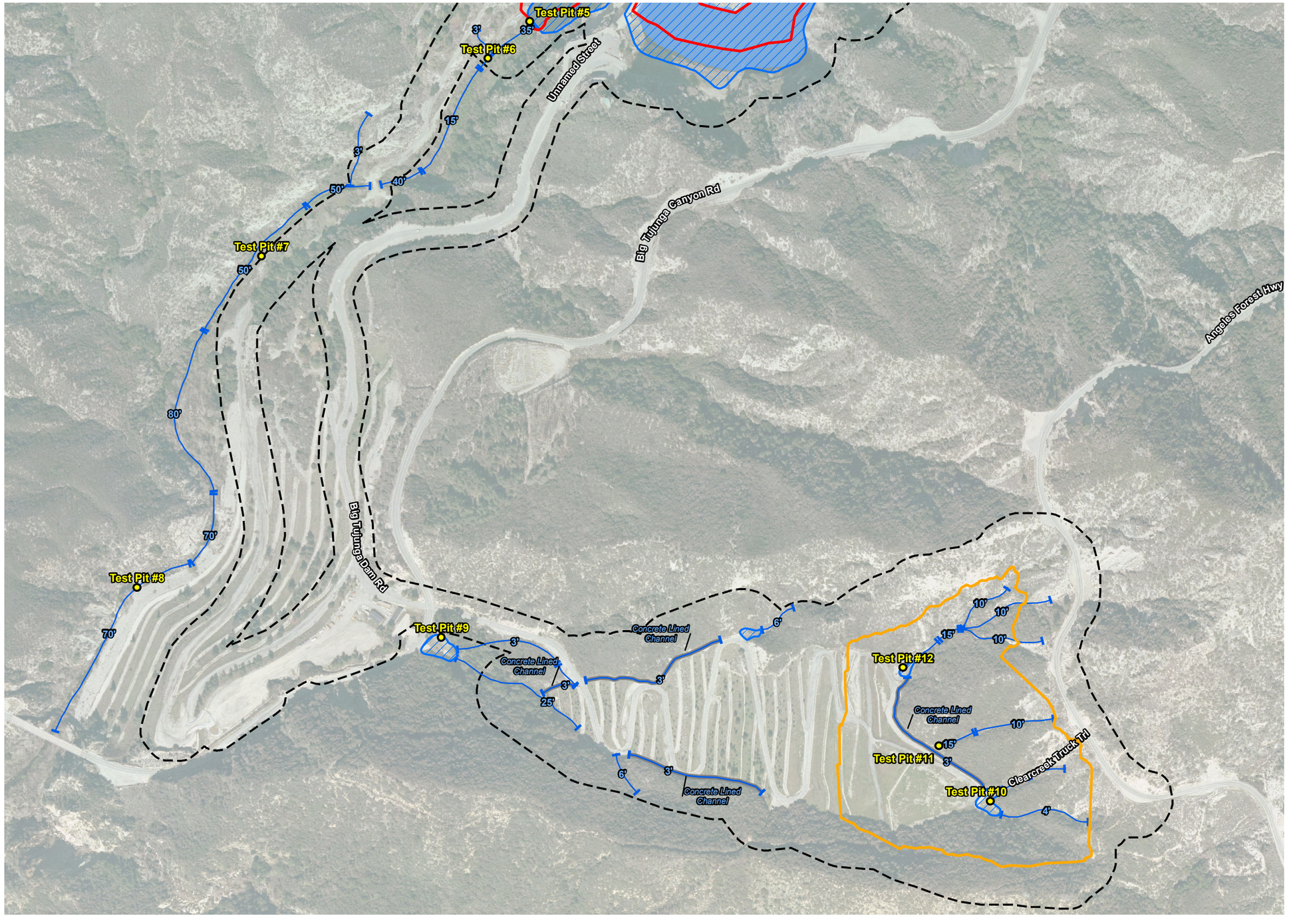

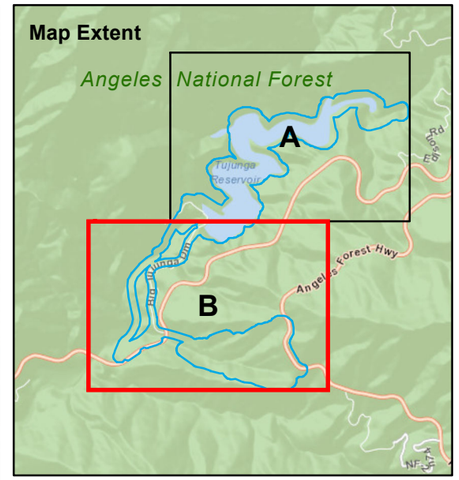

- Project Area
- Test Pit Location
- Proposed Limits of Sediment Removal
- Proposed Limits of Sediment Deposition
- Open Water*

USACE Jurisdiction

- "Waters of the U.S." (width in feet)
- "Waters of the U.S." (concrete channel)
- "Waters of the U.S."

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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USACE Jurisdictional Resources

Exhibit 4-6B

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

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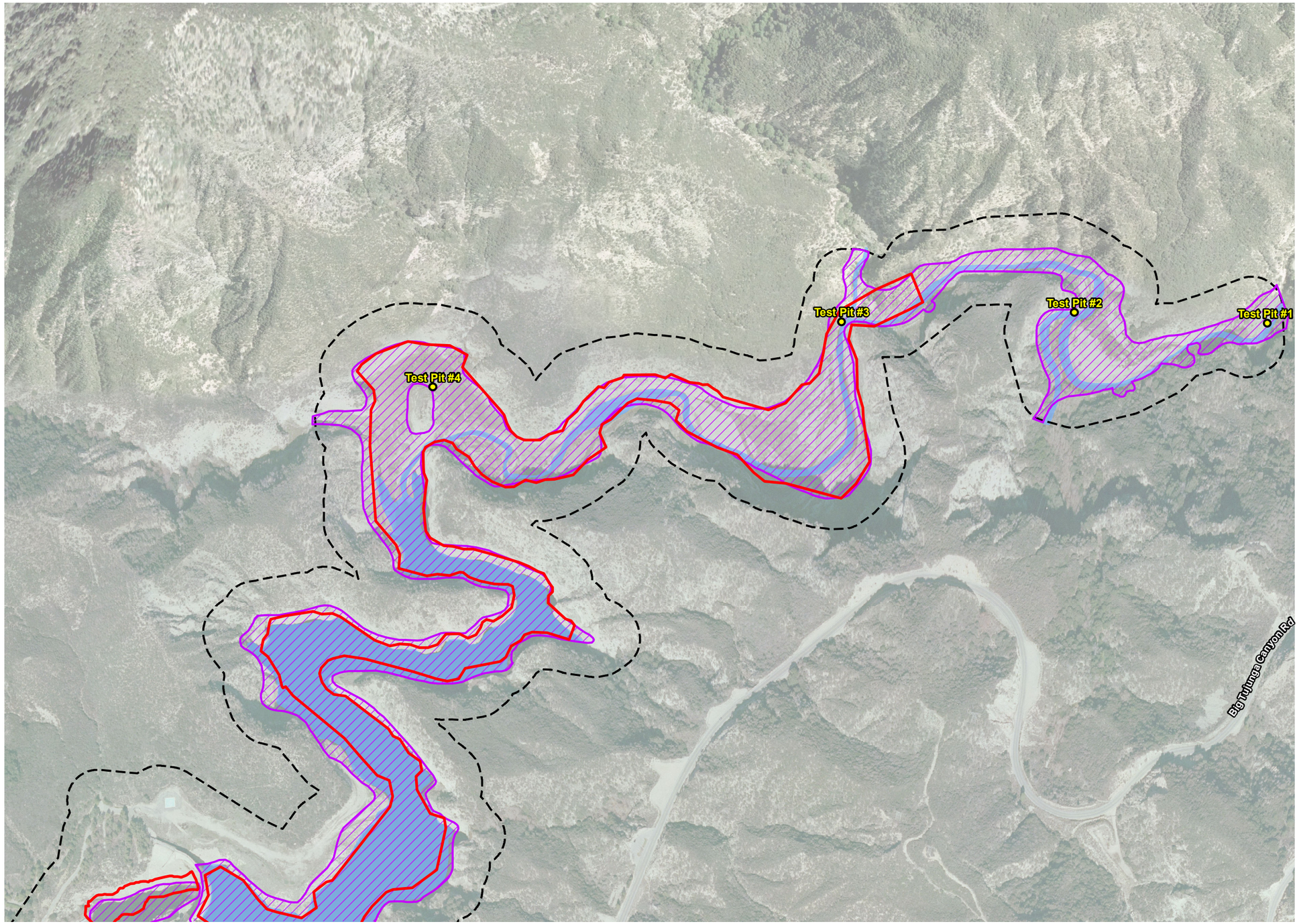

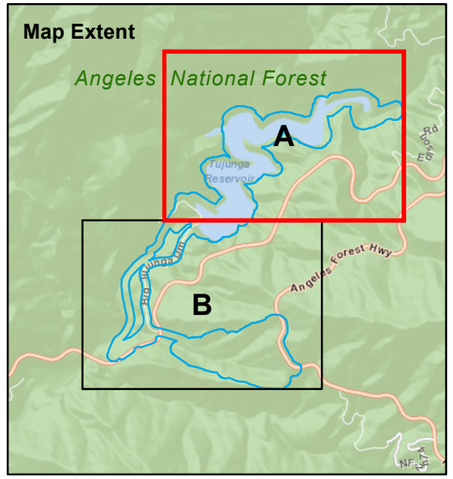

Survey Area
Test Pit Location
Proposed Limits of Sediment Removal
Proposed Limits of Sediment Deposition
Open Water*

CDFG Jurisdiction

CDFG Jurisdictional Area (width in feet)
CDFG Jurisdictional Area (concrete channel)
CDFG Jurisdictional Area

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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CDFG Jurisdictional Resources

Exhibit 4-7A

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

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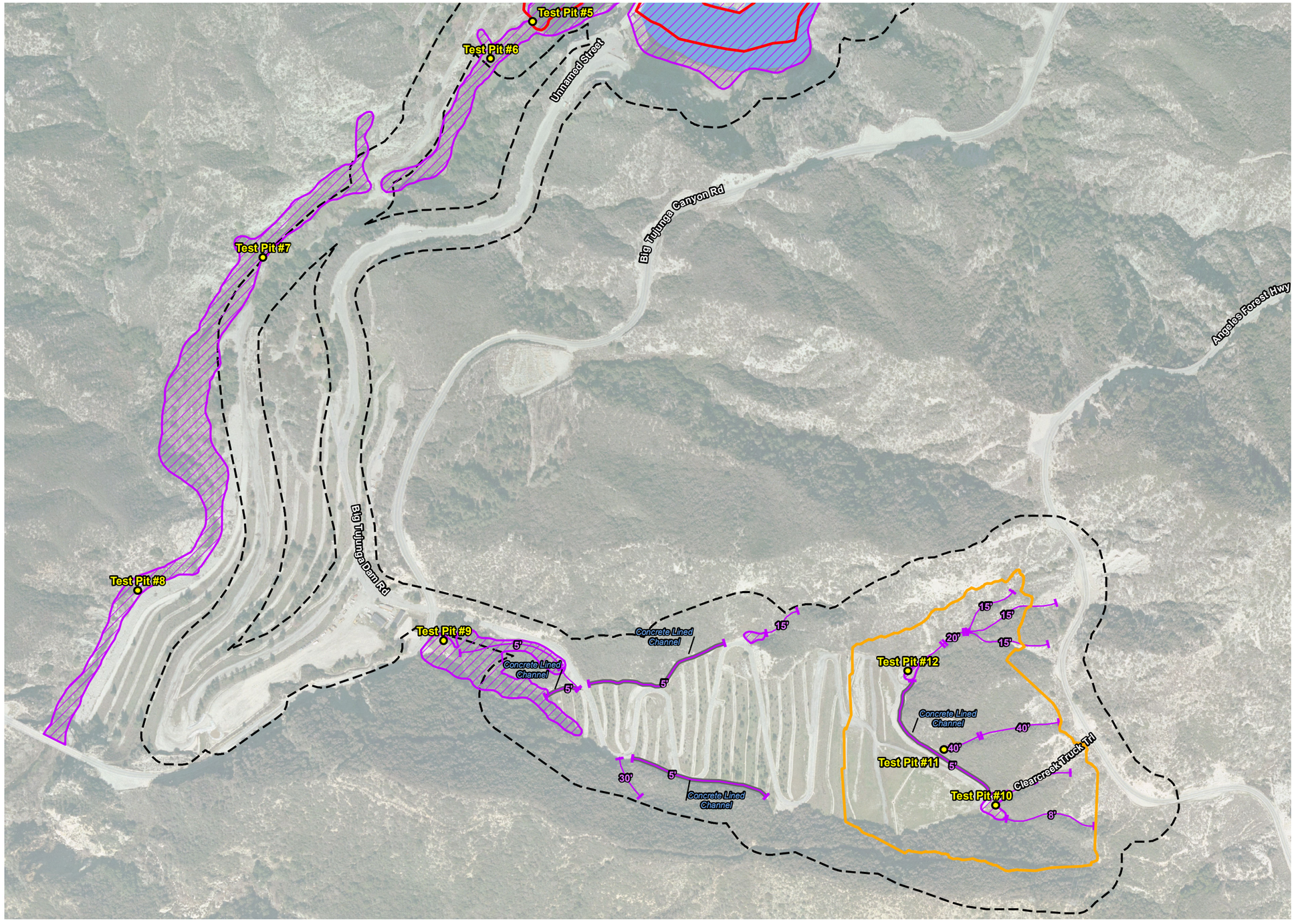

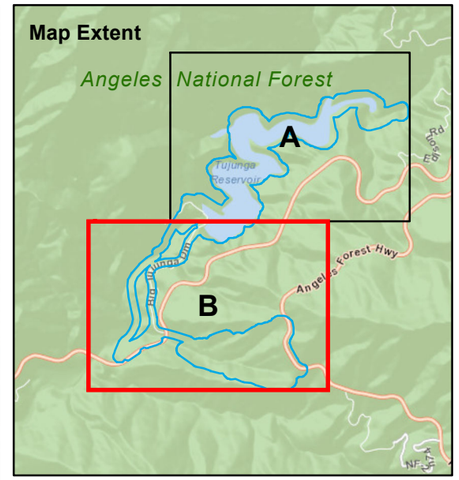

- Survey Area
- Test Pit Location
- Proposed Limits of Sediment Removal
- Proposed Limits of Sediment Deposition
- Open Water*

CDFG Jurisdiction

- CDFG Jurisdictional Area (width in feet)
- CDFG Jurisdictional Area (concrete channel)
- CDFG Jurisdictional Area

*Open water boundaries observed on October 27, 2011, though variable throughout year.
Aerial Source: Aerials Express, 2009

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CDFG Jurisdictional Resources

Exhibit 4-7B

Big Tujunga Reservoir Sediment Removal Project

N W E S

500 250 0 500 Feet

Bonterra CONSULTING

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d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant with Mitigation. Big Tujunga Dam presents an existing barrier to wildlife movement for fish and amphibians along the Creek. As such, existing wildlife movement in the Project area is expected to be restricted to movement along the creek upstream of the reservoir and movement along the Creek downstream of the reservoir. Although wildlife may avoid the sediment removal area during construction, the Project would not be expected to interfere with movement upstream or downstream of BTR. Avian and reptile species would be expected to move through upland areas or along the edge of the Project through habitat not impacted by the Project. Most mammalian wildlife movement occurs at night when construction would not be active; therefore, wildlife would still be able to use access roads for movement at night when construction is not active, and they would still able to use ridgelines that would not be affected by the Project. Therefore, impacts on wildlife movement would be considered less than significant. The Migratory Bird Treaty Act (MBTA) protects the nests of all native bird species, including common species such as mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), and house finch (*Carpodacus mexicanus*). Nesting birds and raptors have potential to occur in vegetation throughout the Project area. Sections 3503 and 3503.5 of the *California Fish and Game Code* protect nesting migratory birds and raptors. As described by MM BIO-8, vegetation removal should occur during the non-breeding season if possible. If vegetation removal would occur during the breeding season, a pre-construction nesting bird/raptor survey would be required prior to clearing to ensure compliance with these requirements. Compliance with MM BIO-8 would reduce impacts to nesting birds and raptors to levels considered less than significant.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Project site is located within the jurisdiction of the USFS and is not subject to any local ordinances or policies. As previously discussed, the Project site is not within any Significant Ecological Areas (SEAs). The Project would be implemented in compliance with all applicable federal regulations. There would be no impact to local ordinances or policies.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less Than Significant Impact. The Project area is not located within a Los Angeles County Significant Ecological Area (SEA). Therefore, the Project would not conflict with the County's SEA program. The Project is located upstream of SEA Tujunga Valley/Hansen Dam (No. 24), and could indirectly impact this SEA through impacts to water quality. However, PDF BIO-3 requires the implementation of water quality filtration BMPs to capture sediment during dewatering, before it is released into Big Tujunga Creek. Therefore, no indirect impacts to this SEA would occur and no mitigation is required.

In the Forest Land and Resource Management Plan for the Angeles National Forest, BTR is located within the proposed Critical Biological Zone for the arroyo toad and California red-legged frog (USFS 2005). California red-legged frog is not expected to occur in the Project area. Impacts on the arroyo toad would be mitigated to less than significant levels, as discussed above (see Threshold 4.4[a]). Bigcone Douglas-fir-canyon live oak woodland would not be

impacted (see Table 4-10). Therefore, there would be no conflict with the Forest Land and Resource Management Plan for the Angeles National Forest.

The Project would not conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or State habitat conservation plan.

4.4.3 MITIGATION MEASURES

MM BIO-1 If the USFWS determines that there is a potential effect on the arroyo toad and/or its critical habitat, the LACFCD, in consultation with USACE and USFS, shall conduct an informal or formal consultation in accordance with Section 7 of the Endangered Species Act. The LACFCD/USACE/USFS shall obtain written concurrence from the USFWS that the avoidance and minimization measures listed below are considered suitable by the resource agencies.

A. A one-visit pre-construction focused survey for arroyo toad, eggs, and tadpoles shall be conducted within seven days prior to dewatering of the reservoir each year. The survey shall include both a diurnal and a nocturnal component and shall be conducted up to one kilometer upstream of the project limits of disturbance by a qualified Biologist (one with experience in identifying arroyo toads in all life stages). If eggs or tadpoles are observed within the work area, dewatering shall be delayed until approval is obtained from the USFWS to relocate the eggs/tadpoles out of the work area. An Arroyo Toad Relocation Plan (ATRP) shall be prepared to describe the methodology to be used to handle/move the adults, eggs, and tadpoles and to describe the relocation site. The relocation site shall mimic site conditions as closely as possible; adequate food resources for the toad adults/tadpoles and shelter from predators shall be present at the relocation site. The ATRP shall describe any follow up monitoring necessary and additional contingency measures for management of the relocation site until tadpoles have metamorphosed into adults. The USFWS shall approve the ATRP prior to relocating any arroyo toad adults/eggs/tadpoles and prior to dewatering the reservoir (beyond normal Dam operations). If no arroyo toads are observed, dewatering can proceed as planned.

B. No sediment removal activities shall take place within the arroyo toad critical habitat area (PDF BIO-1). The critical habitat boundary shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an adequate boundary for construction work. Signs shall be posted to indicate that the area upstream is an “Environmentally Sensitive Area” and that no work activities shall occur upstream of the fencing. The Biological Monitor shall periodically check the fencing/signage to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor if the fencing/signage needs to be repaired.

C. If arroyo toads are observed upstream of the work area during pre-construction surveys, exclusionary fencing shall be installed at the sediment removal boundary to prevent arroyo toads upstream of the Project from entering the construction area. The fencing plan shall be approved by the USFWS. The exclusionary fencing shall consist of silt fencing, buried to one-foot deep and installed with no gaps in the fencing; alternate fencing shall be approved by the USFWS. The fencing shall extend across Big Tujunga Creek

around the perimeter of the sediment removal area or perpendicular to the creek up to 80 feet in elevation from the creek, or as otherwise approved by the USFWS. Fencing shall be installed under the supervision of a Biological Monitor in order to ensure that no arroyo toads or their eggs/tadpoles are impacted during installation of the fence. Pre-construction surveys shall be conducted for three consecutive nights after the exclusionary fencing is installed and prior to the commencement of sediment removal activities each year. Any toads (or other special status species) observed within the impact boundary shall be relocated by a qualified Biologist (one approved by the USFWS to handle arroyo toad/special status species) upstream beyond the impact boundary according to the USFWS-approved ATRP.

D. A qualified Biological Monitor shall conduct periodic construction monitoring visits throughout sediment removal activities (April through October) to ensure that species protective measures are in place. The Biological Monitor shall also monitor any relocated eggs/tadpoles and shall notify the USFWS if any contingency measures are necessary at the relocation site. Monitoring reports describing construction activities as they pertain to the arroyo toad and arroyo toad critical habitat area shall be submitted to the USFWS.

MM BIO-2 Prior to the initiation of sediment removal activities or paving of the haul route, the LACFCD shall retain a qualified Biologist to conduct a protocol focused survey for the arroyo toad along Big Tujunga Creek downstream of the plunge pool to one kilometer beyond the downstream boundary of the access roads. If no arroyo toads are found downstream of the reservoir, no further mitigation would be required. If arroyo toads are observed during the surveys, the USFWS shall be notified and exclusionary fencing shall be installed (see MM BIO-1) along the entire length of the haul route or until the haul route occurs more than 80 feet in elevation from the wash unless otherwise agreed to by the USFWS. Monitoring requirements listed in MM BIO-1 shall apply to the access roads areas as well. If surveys are not conducted prior to construction, the area shall be presumed occupied and all avoidance and exclusionary measures described shall apply.

MM BIO-3 If the USFWS determines that there is a potential effect on the Santa Ana sucker and/or its critical habitat, the LACFCD, in consultation with the USACE and USFS, shall conduct an informal or formal consultation in accordance with Section 7 of the Endangered Species Act. The LACFCD/USACE/USFS shall obtain written concurrence from the USFWS that the avoidance and minimization measures listed below are considered suitable by the resource agencies.

A. No construction activities shall take place downstream of the plunge pool boundary within the Santa Ana sucker critical habitat area, unless additional water quality filtration BMPs are implemented to satisfy permitting requirements from the USACE, RWQCB, and/or CDFW. Filtration BMPs—such as sand/gravel bags, silt fencing and/or other filtering devices—shall be placed between the plunge pool and Big Tujunga Creek to prevent sediment from exiting the plunge pool into downstream waters (PDF BIO-3). Signs shall be posted to indicate that the area downstream is an “Environmentally Sensitive Area” and that no work activities shall occur downstream of the BMPs. The Biological Monitor shall periodically check the fencing/signage to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor if the fencing/signage needs to be repaired.

B. A qualified Biological Monitor (one with experience with the Santa Ana sucker) shall conduct periodic construction monitoring visits throughout stream bypass installation, dewatering, and sediment removal activities to visually monitor the condition of the habitat (flow and depth of water through Big Tujunga Creek), to ensure that species protective measures are in place and to confirm that no release of sediment is observed downstream of the plunge pool. Monitoring reports describing construction activities as they pertain to the Santa Ana sucker and Santa Ana sucker critical habitat areas shall be submitted to the USFWS.

C. If the Biological Monitor notices that water levels in the creek decrease to shallow conditions or that isolated pools develop as a result of natural rainfall conditions, the Biological Monitor shall notify the USFWS and USFS of the conditions to allow the agencies to consider relocating fish to avoid potential mortality Because this would be a result of weather conditions and not a result of the Project, the LACFCD shall not be responsible for relocating the fish (if needed), but shall cooperate with agency efforts to rescue fish.

MM BIO-4 Prior to the initiation of dewatering the plunge pool each year (approximately late April), a pre-construction survey (seining) for arroyo chub shall be conducted in the plunge pool by a qualified Biologist with experience with native fish survey techniques. The purpose of the surveys shall be to capture any arroyo chubs within the plunge pool. If arroyo chubs are captured during the survey, they shall be relocated to a suitable site along Big Tujunga Creek downstream of the plunge pool. Prior to relocating any arroyo chubs, the USFS and CDFW shall approve the potential relocation site(s) and methods for transferring the fish from the plunge pool to the relocation site(s).

Additionally, a qualified Biologist shall be present during dewatering of the plunge pool to ensure no native fish are stranded. If any native fish are observed during the monitoring, they shall be captured by the Biologist through seining (or use of other appropriate nets) and released at the relocation site. A Letter Report shall be prepared to document the results of the pre-construction surveys and monitoring and shall be provided to the USFS and CDFW.

MM BIO-5 Prior to the initiation of dewatering/installation of the bypass line each year (March or April, depending on water levels in the reservoir), pre-construction trapping for the Pacific pond turtle shall be conducted by a qualified Biologist. Concurrently with the trapping effort, the Biologist shall also visually search for two-striped garter snakes in the Project impact area. If any pond turtles or two-striped garter snakes are captured, they shall be relocated to a suitable site along Big Tujunga Creek upstream of the construction area or along Big Tujunga Creek downstream of the downstream access road boundary. Prior to relocating any pond turtles or two-striped garter snakes, the USFS and CDFW shall approve the potential relocation site(s) and methods for transfer to the relocation sites. Additionally, a qualified Biologist shall be present during dewatering of the plunge pool to ensure no native turtles or two-striped garter snakes are stranded. If any native turtles or two-striped garter snakes are observed during the monitoring, they shall be captured by the Biologist and released at the relocation site. A Letter Report shall be prepared to document the results of the pre-construction surveys and monitoring and shall be provided to the USFS and CDFW.

MM BIO-6 Prior to the initiation of road paving and sediment removal each year, special status plant locations within 100 feet of the Project limits shall be clearly marked using lath and flagging, orange snow fencing, or other suitable fencing to provide an adequate boundary for construction work. Signs shall be posted to indicate the area as an "Environmentally Sensitive Area" and shall state that no work activities shall occur within the fencing. The Biological Monitor shall periodically check the fencing/signage to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor if the fencing/signage needs to be repaired.

MM BIO-7 Prior to initiation of sediment removal activities, the LACFCD shall obtain all necessary permits to impact USACE and CDFW jurisdictional areas. Mitigation for the loss of jurisdictional resources shall be negotiated with the resource agencies during the regulatory permitting process and shall ensure mitigation to compensate for permanent impacts on jurisdictional resources is equivalent or superior to biological functions and values impacted by the Project. Potential mitigation options shall, at a minimum, include payment of an in-lieu mitigation fee to a mitigation bank or regional riparian enhancement program (e.g., invasive plant or wildlife species removal).

MM BIO-8 The Project shall be conducted in compliance with the conditions set forth in the Migratory Bird Treaty Act and *California Fish and Game Code* with methods approved by USFS and CDFW to protect active bird/raptor nests. The nature of the Project requires that work would be initiated during the breeding season for nesting birds (March 15–September 15) and nesting raptors (February 1–June 30). In order to avoid direct impacts on active nests, a pre-construction survey shall be conducted by a qualified Biologist for nesting birds and/or raptors within 7 days prior to clearing of any vegetation or any work near existing structures (i.e., within 50 feet for nesting birds and within 500 feet for nesting raptors). If the Biologist does not find any active nests within or immediately adjacent to the impact area, the vegetation clearing/construction work shall be allowed to proceed.

If the Biologist finds an active nest within or immediately adjacent to the construction area and determines that the nest may be impacted or breeding activities substantially disrupted, the Biologist shall delineate an appropriate buffer zone around the nest depending on the sensitivity of the species and the nature of the construction activity. Any nest found during survey efforts shall be mapped on the construction plans. The active nest shall be protected until nesting activity has ended. To protect any nest site, the following restrictions to construction activities shall be required until nests are no longer active, as determined by a qualified Biologist: (1) clearing limits shall be established within a buffer around any occupied nest (the buffer shall be 25–100 feet for nesting birds and 300–500 feet for nesting raptors), unless otherwise determined by a qualified Biologist and (2) access and surveying shall be restricted within the buffer of any occupied nest, unless otherwise determined by a qualified Biologist. Encroachment into the buffer area around a known nest shall only be allowed if the Biologist determines that the proposed activity would not disturb the nest occupants. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest or the nest has failed.

4.5 CULTURAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

A Phase I Cultural Resources Assessment was prepared for the Project, which is summarized below and provided in its entirety in Appendix C.

4.5.1 EXISTING CONDITIONS

Cultural Resources Records Search

Sixteen archaeological surveys have been conducted within a one-mile radius of the Project site. Five of the surveys included at least a portion of the Project site. Ten previously recorded resources are located within one mile of the Project site. Two recorded resources are located on the Project site (19-186860 and 19-186877), and a third (Hansen's Lodge) is believed to be located there. Table 4-12 identifies the previous cultural resources studies that include at least a portion of the Project site.

TABLE 4-12
CULTURAL RESOURCES STUDIES WITHIN
ONE MILE OF THE PROJECT SITE

Report Number	Author(s) (Year)	Type of Study/Comments
LA1477	Clay Singer (1985)	Survey and Impact Assessment for the Proposed Maple Canyon Relief Drain.
LA3053	LSA Associates (1994)	Cultural Assessment of Angeles Forest Highway at Mile Marker 23.00.
LA7155	Bartoy (2003)	Survey for Los Angeles County Flood Control Tanks.
LA9746	Schmidt and Schmidt (2003)	Phase I Investigation; Southern California Edison, Verdugo Distribution Line Circuit. Recordation of sites 186860+186877.
LA10175	Applied Earthworks	Cultural Resources Report for the Tehachapi Transmission Project. 22 different USGS quadrangles.
USGS: U.S. Geological Survey		

Table 4-13 describes the known cultural resources within one mile of the Project site. Three cultural resources noted in Table 4-13 are within the area of potential effects (APE) of the proposed sediment removal Project: 19-186860, 19-186877, and the former location of the Hansen Lodge.

TABLE 4-13
CULTURAL RESOURCES ON OR WITHIN
ONE MILE OF THE PROJECT SITE

Site Number	Recorder (Year)	Comment	Resource Within APE
19-003104	Cotterman, Peterson and Sander (2003)	4 structural foundations	No
19-003471	Panlagua (2003)	6 structural features (possibly early Clear Creek School Camp facilities)	No
19-003386	Brasket and Wallace (2004)	Concrete structural foundation	No
19-003986	Lichtenstein (2009)	Various cement slab features; former scenic overlook	No
19-100796	Norton (2009)	Plumb Bolo knife	No
19-186535	Arbuckle (1979)	The Angeles National Forest	Yes
19-186860	Schmidt (2003)	Wooden power poles/insulators	Yes
19-186877	Schmidt and Schmidt (2003)	26 miles of USFS road alignment; shown on USGS 1926 and 1931 maps	Yes
19-186923	Vance (2001)	Mt. Lukens Road (2N76)	No
19-187713	Sander (2003)	Angeles Forest Highway; 25 mile alignment; Mill Creek Bridge built between 1939 and 1941; tunnel 1941	No
Not recorded	Knight and Maxon (2011)	Extrapolated location of Hansen's Lodge (USFS)	Yes
APE: Area of Potential Effects; USFS: U.S. Forest Service; USGS: U.S. Geological Survey			

Resources Within the Area of Potential Effect

19-186860

This site is Southern California Edison's (SCE's) Verdugo Circuit. It is a linear arrangement of transmission poles, the extreme eastern end of which extends over the access road west of the reservoir where it splits. The northern fork terminates a short distance to the east, still south of the reservoir; the south fork extends through Maple Canyon, where it terminates near the top. Much of this transmission line was destroyed during the 2009 Station Fire, but was rebuilt.

19-186877

This site consists of a 26-mile-long alignment that includes parts of five Forest- and/or SCE-maintained roads (Schmidt and Schmidt 2003). The site includes all or part of Forest Roads 4N24, 3N27, 2N74, 2N75 and 2N77, as shown both on the 1926 and 1931 depictions of the Angeles National Forest (USDAFS 1926, 1931), and on the 1936 USGS Mt Lowe 6-minute quadrangle (Schmidt and Schmidt 2003). Schmidt and Schmidt (2003) quote Robinson (1991) who describes the road as the first road "all the way across the backbone of the San Gabriels". The SCE pole line road was designed to service the high voltage transmission line between the community of Vincent, on the north side of the mountains, and Eagle Rock on the south side

(Schmidt and Schmidt 2003). The proposed fill planned for Maple Canyon would not alter this site's significance because the alignment in the Canyon has already been altered. The existing recordation of the site, the linear nature of the resource, and its continued function do not damage the resource or require a determination of eligibility.

Hansen's Lodge

While the structures no longer visibly exist, a private residence and Hansen's Lodge were built within the Project site boundaries by Dr. Homer Hansen. Dr. Hansen originally visited Big Tujunga as a teenager in 1892 and returned as a young physician a few years later, enjoying camping spots amongst the trees in the local canyon terrain. In the early 1900s, Hansen was forced to retire to the canyon upon a diagnosis of acute inflammatory rheumatism (Vargo 2011).

Dr. Hansen found the sunshine and mountain environment therapeutic, and recovered by 1909. He filed claim for 93 acres at just below the present Big Tujunga Dam. Within a year he built a small cabin, and then built Hansen's Lodge, which grew to be a popular spot with politicians and celebrities from Southern California (Vargo 2011). The lodge had guest accommodations, stables, and a swimming pool. The flood of 1926 destroyed Hansen's Lodge, but he rebuilt it, only to have it destroyed again in 1938 by one of the biggest floods to hit the area. All but stone fireplaces were destroyed so the structure was not rebuilt (Vargo 2011). The Forest Service believes that the site of Hansen's Lodge (FS# 05015500017) was somewhere on the lower (now paved) part of the Dam access road, close by the drainage (and just southeast of Gauging Station 2063) in the vicinity of UTM 11:3794522N; 390151E. Remnants of the lodge are said to have been knocked down years ago to deter trespassers.

Paleontological Resources

A paleontological records search for the proposed Project was requested on October 3, 2011, from the Natural History Museum of Los Angeles County. A response was received on October 28, 2011, by Samuel McLeod, Vertebrate Paleontologist (see Appendix C). McLeod's response suggests that excavations in the igneous bedrock, which occurs throughout most of the Project site, as well as shallow excavations in Quaternary sedimentary deposits (gravel) in the southwestern portion of the Project site, near the access roads, probably would not uncover significant vertebrate fossils. He further mentioned that only deep excavation in the southwestern portion of the Project site may encounter significant fossil remains. Only excavations of substantial depth might require paleontological monitoring.

Native American Sacred Lands File Review

The Native American Heritage Commission's (NAHC) Search of the Sacred Lands File on September 26, 2011, did not identify the presence of Native American cultural resources on the Project site. In addition, the NAHC provided a list of Native American groups and individuals that might have knowledge of the religious and/or cultural significance of resources that may be in and near the Project site. Each of these groups and individuals were mailed an informational letter on September 27, 2011, describing the Project and requesting any information regarding resources that may exist on or near the Project site. No responses have been received to date from the tribes and individuals contacted. On June 21, 2012, follow-up telephone calls were made to ensure a reasonable and good faith effort to all tribes and individuals that were sent letters and failed to respond. Table 4-14 below summarizes the results of consultation, and all Native American correspondence can be viewed in Appendix C.

TABLE 4-14
NATIVE AMERICAN CONSULTATION SUMMARY

Date Sent	Native American Contact	Date of Follow up Phone Call	Comments
9/26/11	Charles Cook	6/21/12	Mr. Cooke stated that the Project site is located in a sensitive area and that a Cultural Resources Monitor should be present on site.
9/26/11	Beverly Salazar Folkes	6/21/12	Ms. Salazar stated that, because the site is located within a sensitive area, a Native American Monitor should be present or on call.
9/26/11	Randy Guzman Folkes	6/21/12	Mr. Guzman-Folkes stated in an email that he believes Cultural Resources Monitoring is required for the Big Tujunga Sediment Removal Project.
9/26/11	Ronnie Salas	6/21/12	Rudy Ortega, responding for Mr. Salas, requested a copy of the original letter via email. The letter was emailed to Mr. Ortega.
9/26/11	Ron Andrade	6/21/12	Left voicemail. No response was received.
9/26/11	John Valenzuela	6/21/12	Mr. Valenzuela had no comments. He recommended that we contact Ann Brierty with the San Manuel Band of Mission Indians regarding the proposed Project. Ms. Brierty does not appear on the NAHC contact list.
9/26/11	Delia Dominguez	6/21/12	Left voicemail. No response was received.

Archaeological Field Survey

On October 13, 2011, BonTerra Consulting Archaeologist Albert Knight conducted a pedestrian survey of the Project site. The survey area can be described as three distinct areas: Upstream/Reservoir-side of the Dam; downstream side of the Dam; and Maple Canyon, as described below.

Upstream/Reservoir-Side of the Dam

This area could not be directly accessed, but a large part of it (mainly on the northwest side of the canyon) could be seen from various vantage points just northwest of Big Tujunga Canyon Road. The upstream/reservoir-side of the Dam consists of a very narrow and steep gorge that is blocked by Big Tujunga Dam. The only exception is a small level area just north of the northern end of the Dam, which is well above the bottom of the canyon. This area was undoubtedly used as a staging/work area when the Dam was constructed. With the exception of the small area near the Dam, there are no stream-side terraces or any other places where any archaeology sites, either prehistoric or historic, might be located. The material visible in the bottom of the canyon is mud, rock, and plant debris, much of which is burnt.

Downstream Side of the Dam

The Forest Service believes that the site of Hansen's Lodge (FS# 05015500017) was somewhere on the lower (now paved) part of the Dam access road, close by the drainage (and just southeast of Gauging Station 2063) near UTM 11:3794522N; 390151E. This part of the access road is paved and cemented riprap is between the road and the active part of the drainage; any traces of the lodge, if such still exist, may be buried and not visible. This location, however, seems to be very close to the drainage. It is possible that the lodge was actually slightly higher on the hillside above the river (although the lodge is known to have been flooded at least once). The Hansen family is considered to be locally historically important.

Hansen Dam, downstream several miles, is considered to be eligible for the National Register of Historic Places (NRHP). The areas where Big Tujunga Dam and its facilities are located were also once owned by the Hansen family, and a small canyon on the northwest side of the reservoir is still known as "Hansen Canyon". No professional researchers have ever examined the site (which has never been recorded) where the lodge was located; however, the current Project is not anticipated to impact this resource should it still exist in this location.

Maple Canyon

The entrance to Maple Canyon SPS is directly east of and across the road from the entrance to the Dam complex. There are no stream-side terraces or other places where an archaeological site might be located in this part of the canyon. Beyond (east of) this, the canyon has been filled with many tons of soil and rock deposited from earlier clearing of debris out of the Dam basin.

Field Survey Results

As a result of the analysis of the South Central Coastal Information Center (SCCIC) records search and evidence gathered in the field, it became evident that a short segment of resource P-19-186877 (the SCE Edison Transmission Line Road) was incorrectly recorded. As it extends through Maple Canyon, the road is recorded as a series of switchbacks extending up the slope of the canyon on top of the previously placed sediment from earlier clean-outs of the reservoir. In reality, the transmission line road extends up the canyon along its southern slope and not up the existing fill.

4.5.2 IMPACT ANALYSIS

Regulatory Requirements

RR CUL-1 If human remains are encountered during excavation activities, all work shall halt in the immediate vicinity of the discovery and the County Coroner shall be notified (*California Public Resources Code* §5097.98). The Coroner shall determine whether the remains are of forensic interest. If the Coroner, with the aid of the LACFCD-approved Archaeologist, determines that the remains are prehistoric, s/he will contact the Native American Heritage Commission (NAHC). The NAHC shall be responsible for designating the most likely descendant (MLD), who will be responsible for the ultimate disposition of the remains, as required by Section 7050.5 of the *California Health and Safety Code*. The MLD shall make his/her recommendation within 48 hours of being granted access to the site. The MLD's recommendation shall be followed if feasible, and may include scientific removal and non-destructive analysis of the human remains and any items associated with Native American burials (*California Health and Safety Code* §7050.5). If the landowner rejects the MLD's recommendations, the landowner shall rebury the remains with appropriate dignity on the property in a location that will not be subject to further subsurface disturbance (*California Public Resources Code* §5097.98).

Impact Discussion

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Less Than Significant Impact. During the literature review conducted for the Project, it was noted that a short segment of the SCE Transmission Line Road (19-186877), was incorrectly recorded on the California Department of Parks and Recreation (DPR) forms. The road is recorded as being a series of switchbacks extending up Maple Canyon; however, the SCE Transmission Line Road actually extends up the canyon along its southern slope. Therefore, SCE Transmission Line Road would not be subject to the proposed sediment deposits. The proposed fill area at Maple Canyon would not come near, nor would it include the access road; thus, the Project would not affect the road's historic significance, either directly or indirectly, and no mitigation is required. If the LACFCD desires to correct the record and remove the incorrect designation from the Maple Canyon SPS access road, the LACFCD has the option of preparing a supplement to the existing site record on a DPR 523L Continuation sheet and depict on an updated DPR 523J Location Map the correct location of the segment of the SCE Transmission Line Road.

The extreme eastern end of SCE's Verdugo Circuit (19-186860) extends over the access road west of BTR. This linear arrangement of poles is not expected to be impacted by the proposed Project and no mitigation is required.

The remnants of Hansen's Lodge may be present under or adjacent to the access roads southwest of the Dam; however, because the paving of existing roads is not anticipated to require substantial grading that could impact native sediments or require grading outside the existing access road footprint, no impact to this site, if it still exists, is anticipated. No prehistoric archaeological sites are recorded in the vicinity of the Project site and no mitigation is required.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant With Mitigation. The current Project involves the excavation of sediment accumulated behind the Dam and the grading of a ramp that will extend into the reservoir to facilitate access by grading equipment. Therefore, there is a possibility that historical and/or archaeological materials would be uncovered during necessary excavations for the construction of the vehicle access road behind the Dam structure into BTR. Although the likelihood of encountering historic and/or archaeological resources on the Project site is considered low, this impact would be potentially significant. MM CUL-1 describes procedures for monitoring and protocols to be followed in the event that cultural resources are discovered during grading. Implementation of this mitigation measure would reduce this potentially significant impact to a less than significant level under both the Low Emission Trucking Option and the Conveyor Belt System Option.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. While excavations to significant depths may encounter significant sediments in the southwestern portion of the Project site, such excavations are not planned. Additionally, the records search conducted by the Natural History Museum of Los Angeles County indicates no evidence of significant paleontological remains within proposed excavation areas. At the southwestern section, access roads that would be paved

would not require deep excavations that may disturb underlying fossil remains. The Project would involve occasional localized filling or shallow grading to maintain the access roads at this location. This activity would result in the disturbance of non-native surficial sediments that have been previously disturbed. The Project would not excavate to a depth that could likely encounter paleontological resources. There would be less than significant impacts to paleontological resources under both the Low Emission Trucking Option and the Conveyor Belt System Option and no mitigation is required.

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. There is no indication that human remains are present within the Project area. The records search and field survey indicates no evidence of human remains on or near BTR or Maple Canyon SPS. As discussed above, the Project would not impact native sediments that were not previously disturbed by the construction of BTR or that flowed down from the upper reaches of Big Tujunga Creek. Recently deposited sediment, debris and vegetation that flowed with storm waters into BTR are not expected to contain any human remains, including those interred outside formal cemeteries.

In the unlikely event of an unanticipated encounter with human remains in BTR, the *California Health and Safety Code* and the *California Public Resources Code* require that any activity in the area of a potential find be halted and the Los Angeles County Coroner be notified, as described in RR CUL-1. There would be less than significant adverse impacts to human remains with compliance with RR CUL-1 under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.5.3 MITIGATION MEASURES

MM CUL-1 Should archaeological resources be found during ground-disturbing activities for the Project, an Archaeologist shall be hired to first determine whether it is a "unique archaeological resource" pursuant to Section 21083.2(g) of the *California Public Resources Code* (PRC) or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines. If the archaeological resource is determined to be a "unique archaeological resource" or a "historical resource", the Archaeologist shall formulate a mitigation plan in consultation with the LACFCD that satisfies the requirements of the above-referenced sections. If the Archaeologist determines that the archaeological resource is not a "unique archaeological resource" or "historical resource", s/he may record the site and submit the recordation form to the California Historic Resources Information System at the South Central Coastal Information Center at California State University, Fullerton.

4.6 GEOLOGY AND SOILS	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

4.6.1 EXISTING CONDITIONS

The Project area is located in the southwestern section of San Gabriel Mountains, which occupy the central part of the Transverse Ranges (east-west orientation) at the northern margin of the Los Angeles Basin. According to the California Geological Survey's (CGS') 2010 Geologic Map of California, the Project site is underlain by Mesozoic-age plutonic rock[14] (CGS 2012a). The site is not within an Alquist-Priolo Earthquake Fault Zone (CGS 2012c). The nearest active or potentially active faults include the Ybarra Fault segment of the San Gabriel Zone; the Daisy Fault segment of the San Gabriel Fault Zone; and the main branch of the San Gabriel Fault Zone (CGS 2012b; USGS and CGS 2006). As shown on Exhibit 4-8, Fault Map, a portion of the San Gabriel Fault Zone (the Daisy Fault segment) traverses the southernmost portion of the haul routes; the southern construction staging area; and Maple Canyon SPS. The Ybarra Fault has traces located immediately to the north and east of BTR, and the San Gabriel Fault Zone is immediately south of Maple Canyon SPS (CGS 2012b; USGS and CGS 2006).

[14] Plutonic rock is formed at considerable depth by crystallization of magma and/or by chemical alteration, and is characteristically medium- to coarse-grained and of granitoid texture (The American Geologic Institute 1984).

The CGS has published a Seismic Hazard Zone Map and associated Report for the Condor Peak 7.5-minute quadrangle, which includes the Project site. Land within the Condor Peak quadrangle is steep, rugged, deeply dissected[15] terrain typical of the western San Gabriel Mountains. The CGS reports that, although the study area is underlain by crystalline bedrock (rather than surficial sediments), the bedrock is highly jointed, fractured, and steep. Therefore, landslides and large rock slides are widespread and abundant. Also, CGS reports that, in the Condor Peak quadrangle, the liquefaction zone is restricted to the bottoms of Big Tujunga Canyon and Mill Creek Canyon near Hidden Springs (CGS 2003a). Only about 16 square miles of the 62-square-mile quadrangle have been evaluated for zoning purposes, and correspond to land under the jurisdiction of the cities of Los Angeles, Glendale, and Pasadena or land that is privately owned in the Angeles National Forest (CGS 2003a). As shown on Exhibit 4-9, Landslide and Liquefaction Hazard Zones, both BTR and Maple Canyon SPS are outside, but immediately adjacent to, an area that has been evaluated on the Seismic Hazard Zone Map (CGS 2003b). However, the majority of the planned haul route is within the area evaluated, and overlaps both portions of the Big Tujunga Canyon bottom, which is identified as susceptible to liquefaction and slopes identified as susceptible to landslides.

4.6.2 IMPACT ANALYSIS

Regulatory Requirements

RR GEO-1 Grading, excavation, and earthwork shall comply with the County Code (Appendix J of Title 26, Building Code), as they relate to excavations; fills; drainage and terracing; slope planting and erosion control; and other pertinent standards to prevent general hazards and flood hazards on and near areas proposed for ground disturbance.

Impact Discussion

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

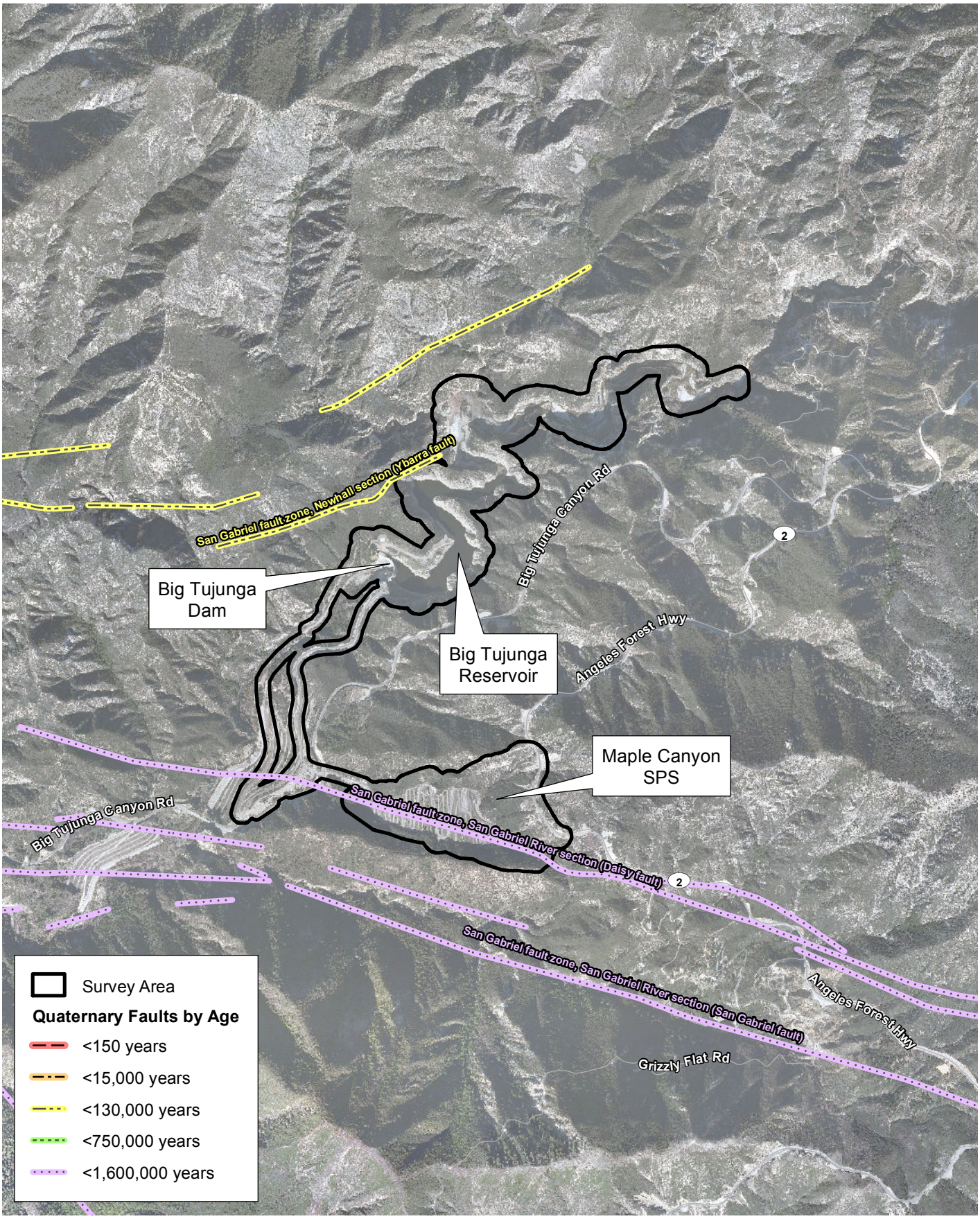
ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

Less Than Significant With Mitigation. As discussed above, the Project site is not within an Alquist-Priolo Earthquake Fault Zone. However, a portion of the San Gabriel Fault Zone traverses the southernmost portion of the site. As within most of Southern California, the Project area is within a seismically active region. The CGS estimates the peak ground acceleration (PGA) having a 10 percent probability of being exceeded in 50 years at the Big Tujunga Dam as approximately 0.6g, or 60 percent the force of gravity, based on the USGS' and CGS' Probabilistic Seismic Hazards Assessment (PSHA) Model (CGS 2012d). Therefore, there is the possibility of strong seismic ground shaking at the Project site. Also, as discussed above, the steep slopes in the Project

[15] Cut by erosion, especially by streams (The American Geologic Institute 1984).



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Fault Map

Exhibit 4-8

Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

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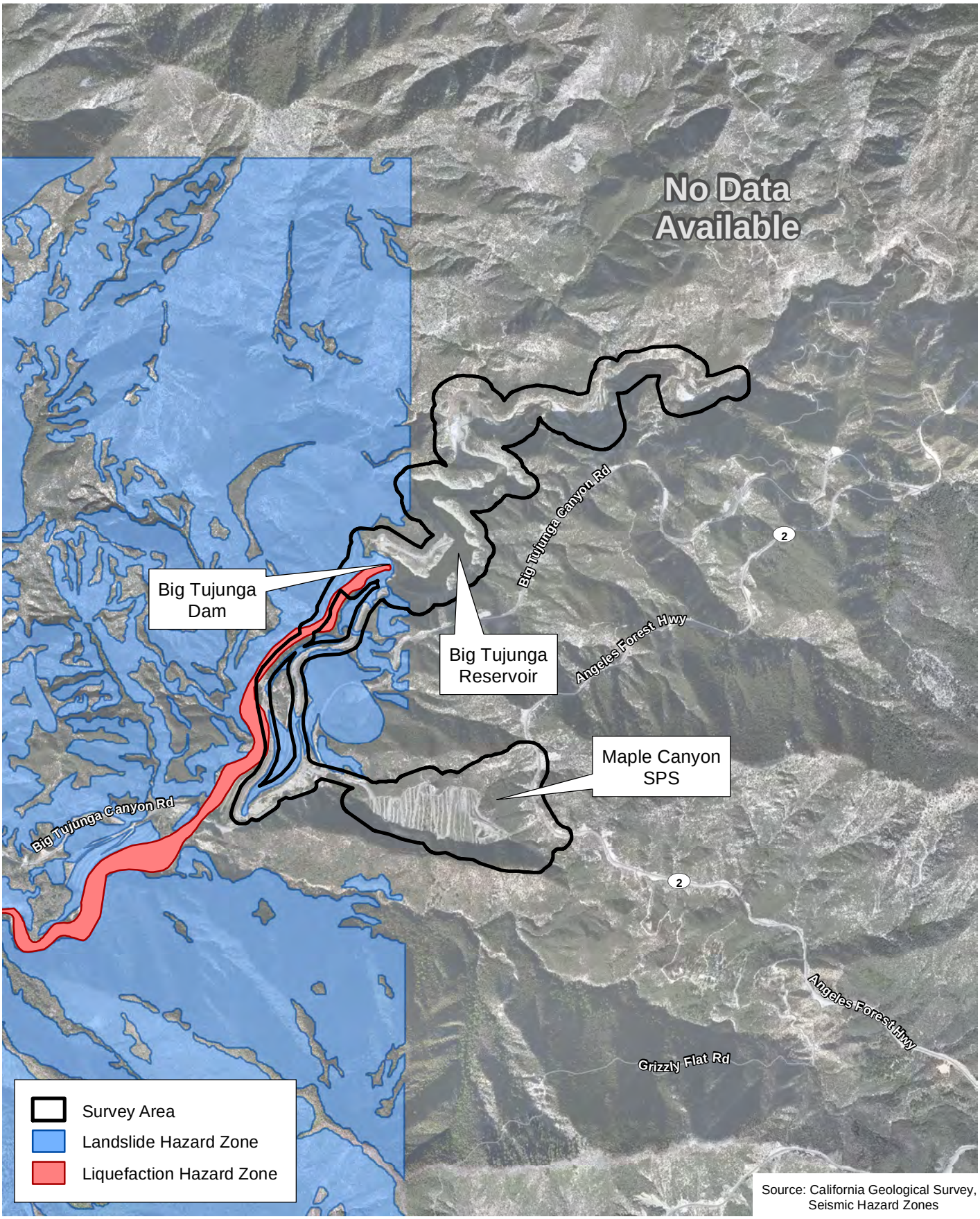

Source: California Geological Survey, Seismic Hazard Zones

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Landslide and Liquefaction Hazard Zones

Exhibit 4-9

Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

BonTerra CONSULTING

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area are considered a potential landslide hazard and the Big Tujunga Canyon bottom exhibits potential for liquefaction.

The Project would not involve a new land use or the construction of structures at BTR and Maple Canyon SPS, but would involve sediment removal activities required to maintain the operational capacity of BTR and to provide adequate protection to downstream residences, businesses, and infrastructure from potential damage caused by floodwaters and debris. No habitable structures, either temporary or permanent, would be constructed as a part of the Project. During Project implementation, the limited portion of the site that is traversed by the San Gabriel Fault Zone includes the existing access roads that would be traveled by trucks and/or a conveyor belt and the existing Maple Canyon SPS. The conveyor belt, if this option is selected, would cross over Big Tujunga Road at Maple Canyon SPS entrance approximately 225 feet north of the mapped trace of the Daisy Fault.

The potential for surface rupture on the Daisy segment of the San Gabriel Fault Zone as well as the potential for strong ground shaking, landslides, and liquefaction are existing seismic hazards that affect BTR and Maple Canyon SPS; as such, implementation of the Project would not exacerbate these seismic hazards. The proposed Project would result in a greater population on the site (i.e., LACFCD staff and contractors) during Project implementation. The greatest risk to the on-site crew would be landslide potential. Also, as discussed further in Section 4.8, Hazards and Hazardous Materials, under the Conveyer Belt Option, the system would be built along the side of the access road from BTR and over Big Tujunga Canyon Road (a public roadway) to the Maple Canyon SPS, and a seismic event could result in the spilling of rocks, sediment, and debris from the conveyor belt system. A conceptual visual depiction of the conveyor belt system is shown in Exhibit 4-2, Conceptual Depiction of Conveyor Belt.

The conveyor belt would be installed and operated in accordance with the 2009 Standard Specifications for Public Works Construction (Greenbook) (RR HAZ-2) to ensure that it has the structural stability required to withstand daily use, including the ability to withstand seismic hazards, for the duration of Project activities. In addition, MM HAZ-2 requires that the conveyor belt be designed for structural stability and that a minimum vertical clearance be provided on Big Tujunga Canyon Road to maintain emergency access, and that the system be fully enclosed where falling debris could pose a hazard in order to eliminate accidental spillage. MM HAZ-3 identifies the need for the contractor to prepare a Site-Specific Health and Safety Plan that includes a designated Site Health and Safety Officer; an Access and Evacuation Plan; a Conveyor Safety Plan; and an identification of site hazards, including response in the event of an earthquake.

Therefore, through compliance with RR HAZ-2 and implementation of MMs HAZ-2 and HAZ-3, there would be a less than significant risk to on-site crew or the public related to potential exposure of people or structures to risks associated with surface rupture, seismic ground-shaking, liquefaction, or landslides under either the Low Emission Trucking Option or the Conveyor Belt System Option.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The proposed sediment removal activities would not require excavation activities to cut into the side slopes of BTR, but would be confined to the removal of soils and sediment at the bottom of BTR. Excavations would range from 0 to 35 feet in depth but would not extend beyond the original natural and/or engineered design slopes at BTR. Exposed loose soils within the reservoir could be subject to erosion from wind or water during Project activities in the non-storm season. However, any dislodged soils or erosion in BTR would be

captured within the reservoir and removed through sediment removal activities. The plunge pool would capture any sediment remaining in the reservoir water. Filtration BMPs, potentially including sand/gravel bags, silt fencing, or other filtration barriers would be placed at the mouth of Big Tujunga Creek to prevent sediment from travelling farther downstream.

Sediment placed at Maple Canyon SPS may be exposed to wind and water erosion. Implementation of the Revegetation Plan, as required by PDF AES-1, would minimize long-term erosion potential at Maple Canyon SPS. Dust control during sediment placement, as required by RR AQ-1 would reduce erosion potential. Also, the filling operations would be made within terraces with slopes no greater than 10 percent to limit slope erosion. Drain lines with drop inlets at regular intervals would also be installed in the Maple Canyon SPS to intercept runoff flows and to reduce runoff velocity and the potential for erosion.

The stockpiling of soils during the non-storm season for transport during the rainy season has the potential to result in erosion of the stockpiles during rain events. However, as required under RR HYD-1, the Project would be implementing a Storm Water Pollution Prevention Plan (SWPPP), which would require all stockpiles to be adequately covered to prevent erosion. Compliance with the requirements of the SWPPP would ensure that impacts are less than significant.

As a part of the Low Emissions Vehicles Option, all existing unpaved portions of the access road loop, with the exception of 0.33 mile within the bed of the reservoir, would be paved to reduce fugitive dust and potential degradation of the access road (see PDF AQ-3). The Conveyor Belt System Option would not result in potential degradation of the access roads. Therefore, there would be less than significant impacts related to erosion under either the Low Emission Trucking Option or the Conveyor Belt System Option and no mitigation is required.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact. As noted above, the Project site is located on a bedrock substrate, and the area is susceptible to earthquake-induced landslides and liquefaction, depending on location. Due to the steep slopes in the area, surficial sediments (i.e., alluvium) are generally limited to streambed bottoms such as along Big Tujunga Creek. The Natural Resources Conservation Service (NRCS) identifies the Project area within the Angeles National Forest Area soil survey, which is accessible only via the NRCS' Web Soil Survey. The primary soil associations mapped within the Project survey area include Rock outcrop-Chilao family-Haploxerolis, warm and Olete-Kilburn-Etsel families complex (USDA NRCS 2012). The NRCS has not defined expansive soil potential for on-site soils. However, these soil types are both comprised largely of gravelly loam and very gravelly sandy loam, which are so named because they are relatively heavy in coarse sediments (i.e., gravel and sand) rather than clays that can lead to expansive soils.

The dewatering of BTR would not lead to landslides or other slope instability as sediment removal would be confined to soils and sediment deposited by creek flows and would not affect the original natural and/or engineered slopes at BTR. Similarly, as discussed under Threshold 4.6(b) above, the proposed sediment removal activities would be confined to the removal of soils and sediment at the bottom of BTR and would not extend beyond the original natural

and/or engineered design slopes, and sediment placement at Maple Canyon SPS would not excavate into existing slopes. Sediment placed at Maple Canyon SPS would be deposited in terraces to maintain the stability of the slopes and would be in compliance with the grading standards in the County Code (RR GEO-1). No habitable structures would be built that would be exposed to hazards associated with location on an unstable geologic unit. The conveyor belt would be installed and operated in accordance with the 2012 Greenbook (RR HAZ-2) to ensure the structural stability required to withstand daily use for the duration of Project activities, including the ability to withstand soil engineering hazards.

Through compliance with RR GEO-1 and RR HAZ-2, there would be less than significant impacts related to location of an unstable geologic unit under both the Low Emission Trucking Option and the Conveyor Belt System Option and no mitigation is required.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Project would not include the construction of septic tanks and there are no septic tanks at BTR or Maple Canyon SPS. The construction crew would be served by portable toilets that would be brought to the site at the start of sediment removal activities; regularly cleaned; and removed at the end of sediment removal activities each year. There would be no impacts related to the use of septic tanks or alternative waste water disposal systems under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.6.3 MITIGATION MEASURES

Compliance with MMs HAZ-2 and HAZ-3 would reduce impacts to geology and soils to less than significant levels.

4.7 GREENHOUSE GAS EMISSIONS	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

4.7.1 EXISTING CONDITIONS

Climate change refers to any significant change in climate, such as the average temperature, precipitation, or wind patterns over a period of time. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns have been associated with global warming, which is an average increase in the temperature of the atmosphere near the Earth's surface; this is attributed to an accumulation of greenhouse gas (GHG) emissions in the atmosphere. GHGs trap heat in the atmosphere which, in turn, increase the Earth's surface temperature. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through fossil fuel combustion, in conjunction with other human activities, appears to be closely associated with global warming (OPR 2008). Table 4-15 shows the magnitude of GHG emissions on the global, national, State, and regional scales.[16]

TABLE 4-15
COMPARISON OF WORLDWIDE GHG EMISSIONS

Area and Data Year	Annual GHG Emissions ($MMTCO_2e$)
World (2006)	29,000
United States (2009)	6,633[a]
California (2009)	453
Los Angeles County (2008)	93

$MMTCO_2e$: million metric tons of CO_2e; GHG: greenhouse gas(es)

[a] Down from a high of 7,263 in 2007.

Source: WRI 2009; USEPA 2011b; CARB 2011a; SCAG 2008.

[16] GHG emissions are commonly expressed in metric tons of carbon dioxide equivalent ($MTCO_2e$). Larger quantities of emissions, such as on the State or world scale, are expressed in million metric tons of carbon dioxide equivalent ($MMTCO_2e$). (Metric tons may also be stated as "tonnes".) The CO_2e for a gas is derived by multiplying the tons of the gas by the associated Global Warming Potential (GWP) such that $MMTCO_2e$ = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for CH_4 is 21. This means that emissions of 1 million metric tons of CH_4 are equivalent to the emissions of 21 million metric tons of CO_2.

GHGs, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). General discussions of climate change often include water vapor, ozone, and aerosols in the GHG category. Water vapor and atmospheric ozone are not gases that are formed directly in the construction or operation of development projects, nor can they be controlled in these projects. Aerosols are not gases. While these elements have a role in climate change, they are not considered by regulatory bodies (such as CARB) or climate change groups (such as the California Climate Action Registry [CCAR]) as gases to be reported or analyzed for control. Therefore, no further discussion of water vapor, ozone, or aerosols is provided.

GHGs vary widely in the power of their climatic effects; therefore, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both its potency and lifespan in the atmosphere as compared to CO_2. For example, since CH_4 and N_2O are approximately 21 and 310 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 21 and 310, respectively (CO_2 has a GWP of 1). Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the emission rate of that gas to produce the CO_2e emissions.

AB 32, the California Global Warming Solutions Act of 2006, recognizes that California is the source of substantial amounts of GHG emissions. The statute states that:

> Global warming poses a serious threat to the economic well being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

In order to avert these consequences, AB 32 establishes a State goal of reducing GHG emissions to 1990 levels by the year 2020, which is a reduction of approximately 16 percent from forecasted emission levels, with further reductions to follow (CARB 2011a). BTR and Maple Canyon SPS generate GHG emissions from vehicles coming to and from the site for maintenance and inspection activities and occasional sediment removal activities.

4.7.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. Neither the LACFCD nor the County of Los Angeles have adopted or established any quantitative GHG emissions significance criteria. In April 2008, the SCAQMD convened a working group to provide guidance to local lead agencies on determining

the significance for GHG emissions in their CEQA documents. The working group adopted a philosophy similar to recommendations made by other agencies in California to identify Significance Screening Levels, or thresholds, for GHG emissions. Projects with GHG emissions less than these levels or thresholds would be determined to have less than significant impacts. Projects with GHG emissions greater than the Significance Screening Level would be required to implement specific performance standards or purchase offsets to reduce their climate change impact to less than significant levels. On December 5, 2008, the SCAQMD Governing Board adopted an interim screening threshold for industrial projects where the SCAQMD is the lead agency of 10,000 $MTCO_2e$/year. In September 2010, the working group proposed to expand this 10,000 $MTCO_2e$/year threshold to other lead agency industrial projects (SCAQMD 2010). Although the SCAQMD Governing Board has yet to consider this proposal, the SCAQMD threshold is the most applicable to the Project due to the industrial nature of the Project and is used in the analysis below. However, unlike a typical industrial project that may have GHG emissions for 20 years or more, the proposed Project would generate GHG emissions, as quantified below, during five years of sediment removal and placement and negligible GHG emissions subsequently.

The principal source of GHG emissions during construction of the proposed Project would be the internal combustion engines of the construction equipment, on-road trucks, and workers' commuting vehicles. The assumptions for construction equipment and haul truck use are described in Section 4.3, Air Quality, and in Appendix A. Construction GHG emissions for off-road equipment and worker commute vehicles were calculated by using CalEEMod Version 2011.1.1 (SCAQMD 2011b). GHG emissions for on-road trucks were calculated using EMFAC 2011.

For the Conveyor Belt System Option, GHG emissions would also be indirectly generated to provide the electricity to power the conveyor belt. The GHG emission factors for electricity provided by SCE were taken from CalEEMod. According to the LACFCD calculations based on previous use of conveyor belts, electrical use for one year of conveyor belt operations is estimated to be 2,768 megawatt hours. Estimated GHG emissions are shown in Table 4-16.

TABLE 4-16
ESTIMATED ANNUAL GHG EMISSIONS
(METRIC TONS)

Source	Low Emission Trucking Option	Conveyor Belt System Option
Off-road equipment and worker commute vehicles from sediment excavation and placement and storm season on-site aggregate loading	565	565
On-road trucks (summer-dry season)	743	25
Conveyor belt electricity	N/A	810
On-road trucks (winter-storm season)	188	188
Total – 1 year	**1,496**	**1,588**
Total – 5 years	**7,480**	**7,940**

N/A: not applicable

Calculation data in Appendix A.

As shown in Table 4-16, estimated GHG emissions for the Low Emission Trucking Option are 7,480 $MTCO_2e$ for the 5-year Project. For the Conveyor Belt System Option, the estimated GHG emissions are 7,940 $MTCO_2e$ for the 5-year Project. The emissions for the complete 5-year Project would be less than the SCAQMD screening level of 10,000 $MTCO_2e$ for one year of an industrial project. Therefore, GHG emissions would be less than significant and no mitigation is required.

After the sediment removal and placement and aggregate removal activities, there would be approximately five years of revegetation activities at Maple Canyon SPS (see PDF AES-1). During revegetation activities, GHG emission sources would include (1) equipment used for installing water tanks at Maple Canyon SPS; (2) occasional truck trips bringing water and planting material to the site and light vehicle trips for revegetation crew commute; and (3) equipment used for removing water tanks from Maple Canyon SPS and asphalt from the SPS access road. The associated emissions would be minimal and likely offset by the sequestration from the added vegetation. The net emissions would be negligible and no mitigation is required.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. As discussed above, the principal State plan and policy adopted for the purpose of reducing GHG emissions is AB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. Statewide plans and regulations, such as GHG emissions standards for vehicles and the Low Carbon Fuel Standard, are being implemented at the statewide level, and compliance at the specific plan or project level is not addressed. Therefore, the proposed Project does not conflict with these plans and regulations.

As previously discussed, the increase in GHG emissions would be limited when compared to SCAQMD's recommended significance threshold for industrial projects. Implementation of the proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. There would be no impact.

4.7.3 MITIGATION MEASURES

There would be no significant impacts related to GHG emissions; therefore, no mitigation measures are required.

4.8 HAZARDS/HAZARDOUS MATERIALS	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter-mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

4.8.1 EXISTING CONDITIONS

While no hazardous materials are present within BTR and Maple Canyon SPS, there are hazardous materials (i.e., propane, diesel gasoline, oils, and other lubricants) used for the equipment and emergency generator at Big Tujunga Dam. Diesel fuel is stored in an aboveground diesel tank in limited quantities in the utility building near the Dam.

The California Department of Toxic Substance Control (DTSC) maintains the EnviroStor Database, which compiles hazardous material sites and generators that have been identified for clean up or that are permitted to handle hazardous materials by various regulatory agencies. There are no hazardous material sites or generators at or near BTR or Maple Canyon SPS, as listed in the EnviroStor Database. The nearest hazardous material facility identified in the EnviroStor Database is a dry cleaning facility on Foothill Boulevard in La Crescenta,

approximately five miles southwest of Maple Canyon SPS (DTSC 2013). BTR and Maple Canyon SPS are not listed in the Hazardous Waste and Substances Sites (Cortese) List developed in compliance with Section 65962.5 of the *California Government Code.*

The USEPA maintains the Envirofacts Database, which compiles lists of facilities subject to permitting for their potential environmental hazards to air, water, waste, land, toxics, radiation, facility, regulatory compliance, and other. There are no facilities that pose hazards related to hazardous materials use at or near BTR and Maple Canyon SPS, as listed in the Envirofacts Database. The nearest facility identified in the Envirofacts Database is a trucking company in La Crescenta, approximately 3.6 miles south of Maple Canyon SPS (USEPA 2013). With the steep slopes and access constraints, the Project Area is located within a Very High Fire Hazard Severity Zone, as mapped by the California Department of Forestry and Fire Protection (CALFIRE 2007).

Several SCE high-voltage transmission lines run through the Angeles National Forest, with Segment 11 running in a northerly direction just east of Maple Canyon SPS (LACDRP 1980). There are no gas transmission pipelines or hazardous liquid pipelines running near BTR and Maple Canyon SPS, as mapped by the National Pipeline Mapping System (PHMSA 2010).

4.8.2 IMPACT ANALYSIS

Regulatory Requirements

RR HAZ-1 Activities at BTR and Maple Canyon SPS shall comply with existing federal, State, and local regulations regarding hazardous material use, storage, disposal, and transport to prevent Project-related risks to public health and safety. All on-site generated waste that meets hazardous waste criteria shall be stored, manifested, transported, and disposed of in accordance with the *California Code of Regulations* (Title 22) and in a manner to the satisfaction of the local Certified Unified Program Agency (CUPA) and the U.S. Forest Service.

RR HAZ-2 If the Conveyor Belt System Option is chosen, it shall be installed and operated in accordance with Section 7-10.4.1, Safety Orders, of the 2012 Standard Specifications for Public Works Construction (Greenbook).

RR HAZ-3 The temporary extension of electrical power lines from existing nearby power lines or from the power lines at the Dam to BTR shall be made in compliance with applicable regulations of the Uniform Fire Code and in coordination with Southern California Edison, as necessary.

Impact Discussion

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant With Mitigation. Hazardous material use for proposed sediment removal and placement activities would include oil and grease, solvents, diesel gasoline, and other chemicals in vehicles, trucks, and heavy equipment to be used at BTR and Maple Canyon

SPS. Diesel fuel would be brought to the lower staging area in tender trucks for use in refueling activities. Other hazardous materials would also be stored in the lower staging area.

The use of hazardous materials at BTR and Maple Canyon SPS, as well as in designated staging areas, could pose risks to construction workers or lead to soil and water contamination, if not properly stored, used, or disposed. Due to the presence of surface water bodies, the potential for water contamination and the likelihood that accidentally contaminated soils would end in the Creek may create a public health and safety hazard through the transport, use, or disposal, or accidental spillage, of hazardous materials at BTR and Maple Canyon SPS.

To prevent environmental hazards, the handling of hazardous materials used in equipment would have to be made in accordance with existing regulations (RR HAZ-1). These regulations include the transport of hazardous materials; on-site storage and use of hazardous materials; and procedures to implement in the event of a spill. In addition, under RR HYD-1, the Project would be implementing a Storm Water Pollution Prevention Plan (SWPPP), as discussed in Section 4.9, Hydrology and Water Quality, which would include hazardous waste management BMPs and a sampling and analysis plan for the Contractor to report and mitigate for any hazardous material discharges that may contaminate waters.

MM HAZ-1 includes specific measures to avoid impacts associated with hazardous material spills and accidents at BTR and Maple Canyon SPS. These include inspecting trucks for oil, gasoline, or other vehicle fluid leaks; locating fueling areas and storage of hazardous materials away from water bodies and drainages; creating a plan for refueling within BTR; removing hazardous material spills and contaminated soils; and controlling and containing hazardous materials spills and ensuring cleanup kits are available. Implementation of MM HAZ-1 would reduce potential impacts associated with the use and reasonably foreseeable upset of hazardous materials to a less than significant level under both the Low Emission Trucking Option and the Conveyor Belt System Option.

The high voltage transmission lines are located at the eastern edge of Maple Canyon SPS. Vegetation clearing and sediment placement activities in this area would be limited to short periods of time. Thus, exposure to EMFs would not be substantial. Also, numerous studies on EMFs have not confirmed a direct correlation between exposure and health risks. EMF impacts would be less than significant under both the Low Emission Trucking Option and the Conveyor Belt System Option.

Under the Conveyor Belt System Option, the system would be built along the side of the access road from BTR and over Big Tujunga Canyon Road to Maple Canyon SPS. It would also be loaded with sediment materials continuously throughout the Project operations. A conceptual visual depiction of the conveyor belt system is shown on Exhibit 4-2. High winds, seismic events, or structural failures could result in the spilling of rocks, sediment, and debris from the conveyor belt system. Specifically, structural instability and/or falling debris could pose significant hazards to the on-site crew and to travelers on Big Tujunga Canyon Road as the conveyor belt system crosses the road.

The conveyor belt would be installed and operated in accordance with the 2012 Standard Specifications for Public Works Construction (Greenbook) (RR HAZ-2) to ensure the structural stability required to withstand daily use for the duration of Project activities, including the ability to withstand seismic hazards. MM HAZ-2 requires that the conveyor belt be designed for structural stability and that a minimum vertical clearance be provided on Big Tujunga Canyon Road to maintain emergency access. Additionally, MM HAZ-2 requires that the system be

enclosed for the portion of the system that would cross over Big Tujunga Canyon Road to prevent hazards from falling sediment and eliminate accidental spillage.

MM HAZ-3 identifies the need for the contractor to prepare a Site-Specific Health and Safety Plan that includes a designated Site Health and Safety Officer; an Access and Evacuation Plan; a Conveyor Safety Plan; and identification of site hazards. MM HAZ-4 requires preparation of an Emergency Procedures-Fall Protection Program that considers the type of equipment; provides inspection procedures and inspection intervals for equipment; designates locations where fall protection equipment shall be used; and documents that the site personnel have been trained in the proper use of fall protection equipment.

Compliance with applicable regulations and MM HAZ-2 through MM HAZ-4 would ensure that Project-related impacts due to the routine transport of hazardous materials or the reasonably foreseeable upset and accident conditions involving the dislodging of rocks, sediment, and debris from the conveyor belt would be less than significant after mitigation.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter-mile of an existing or proposed school?

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. BTR and Maple Canyon SPS are not on a list of hazardous materials sites identified on the Cortese list or the Envirostor and Envirofacts Databases. The hazardous materials stored in the Dam's utility building would not be affected by the proposed Project. Hazardous material use for the proposed sediment removal and placement activities would be limited and would not create a significant hazard to the public or the environment. There are no schools within a quarter mile of BTR or Maple Canyon SPS that could be affected by hazardous emissions or materials from the Project. No impact would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no airports within ten miles of BTR and Maple Canyon SPS. The Project would not involve the construction of high-rise structures or activities that could pose a safety hazard associated with aircraft activity or that would conflict with an airport land use plan. The Conveyor Belt System Option would include an overhead conveyor belt that would run from BTR to Maple Canyon SPS, but this equipment would be approximately 17 feet tall and lower than the adjacent hills found on both sides of Maple Canyon (80 to 100 feet above the road grade). There would be no impacts related to air traffic under either the Low Emission Trucking Option or the Conveyor Belt System Option.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant With Mitigation. Under the Low Emission Trucking Option, sediment removal would be completed by a backhoe or excavator transferring the sediment into dump trucks. The dump trucks would transport the sediment from BTR to Maple Canyon SPS. Truck trips between BTR and Maple Canyon SPS would occur throughout the day between approximately April 16 and October 14 for the duration of the Project. The trucks would cross Big Tujunga Canyon Road at the Project's access road in order to reach Maple Canyon SPS. Truck traffic crossing Big Tujunga Canyon Road has the potential to pose a hazard for emergency response vehicles and/or evacuation prior to mitigation.

Cross traffic at Big Tujunga Canyon Road would be controlled in compliance with MM TRA-1, which requires a Traffic Control Plan to be prepared, in compliance with the California Department of Transportation's (Caltrans') *Manual on Uniform Traffic Control Devices* (MUTCD), as discussed in Section 4.16, Transportation. The Plan shall include, but not be limited to, the following requirements: (1) a flag person(s) shall be stationed at the intersection of the Project access road and Big Tujunga Canyon Road during all trucking operations under the Low Emissions Truck Option; (2) truck traffic shall be managed such that no queuing shall occur on Big Tujunga Canyon Road; (3) mandatory participation by the construction crew in traffic safety meetings to ensure that the Plan is fully implemented; (4) requirements for the design and use of traffic signs, driveway access, barricades, and other measures shall be set to maintain public convenience and safety for motorists, cyclists, pedestrians, and construction workers; and (5) coordination protocol with law enforcement and other emergency agencies shall be set forth, as necessary. Compliance with MM TRA-1 would ensure that impacts to emergency response and evacuation would be less than significant under the Low Emission Trucking Option.

Under the Conveyor Belt System Option, the truck trips crossing Big Tujunga Canyon Road would be eliminated and there would be no vehicular hazards that could interfere with emergency response/evacuation plans. Per MM HAZ-2, the conveyor belt system shall be constructed with a minimum clearance over Big Tujunga Canyon Road to allow for the safe passage of all vehicles along Big Tujunga Canyon Road, and to ensure the structural stability and protection from falling debris required to avoid impacts to emergency response/evacuation plans. Compliance with MM HAZ-2 would ensure that impacts to emergency response and evacuation would be less than significant under the Conveyor Belt System Option.

h) Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant With Mitigation. BTR and Maple Canyon SPS are located within an area designated as a Very High Fire Hazard Severity Zone (VHFHSZ). Goals and objectives for fire prevention, fire suppression, and emergency evacuation are included in the Forest Plan and strategies/programs have been developed by the USFS. Specifically, the USFS has a Fire Management and Administration Group that is responsible for wildland fire suppression; fire prevention through public education; fuel breaks; fire retardants and hazardous fuel reduction; and implementation of State fire laws regarding hazard abatement around structures.

The proposed sediment removal activities would not involve construction or operation of habitable structures in wildland areas or promote development in wildland areas. Thus, the Project would not permanently expose people to the potential for brush fires within BTR and Maple Canyon SPS. However, workers would be brought to the Project site and exposed to potential injury in the event of wildfire that could occur during Project activities in the non-storm season. Project activities have the potential to increase the risks associated with wildfires due to the temporary extension of electrical power lines from the Dam control house to the pumps to be used for dewatering and to the conveyor belt; the presence of construction equipment due to leaks from heavy equipment; the use of flammable liquids; and presence of combustion engines, among others.

In order to reduce wildfire risks and to protect workers during Project activities, MM HAZ-5 requires compliance with Article 87 of the *California Fire Code* and National Fire Protection Association Standard No. 1. The LACFCD would prepare a Fire Protection Plan to include emergency reporting procedures; emergency notification, evacuation, and/or relocation of all persons on site; procedures for "hot work" operations; management of hazardous materials and removal of combustible debris; maintenance of emergency access roads; identification of exit routes and assembly areas; and identification of fire apparatus. The Fire Protection Plan would be provided to the USFS for review and approval prior to commencement of any sediment removal activities. Compliance with the Uniform Fire Code (RR HAZ-3) for power line extensions would prevent fire hazards associated with electrical lines. Compliance with RR HAZ-3 and implementation of MM HAZ-5 would ensure that short-term wildfire hazards associated with Project activities would be less than significant. Impacts related to wildland fires would be less than significant after mitigation under both the Low Emission Trucking Option and the Conveyor Belt System Option.

4.8.3 MITIGATION MEASURES

MM HAZ-1 The LACFCD shall require in the Contractor's Specifications that the following measures be implemented during proposed sediment removal and placement activities at BTR and Maple Canyon SPS:

- Trucks and equipment entering BTR shall be inspected to be free from oil, gasoline, or other vehicle fluid leaks.
- Equipment fueling areas shall be located at least 50 feet from water bodies, drainages and areas with riparian vegetation, including dewatered portions of BTR.
- All refueling activities shall be conducted in accordance with the refuling requirements identified in the LACDPW BMP Manual.
- Hazardous materials shall not be stored within the limits of BTR or near drainages. Instead, the hazardous materials shall be stored within the lower staging area, away from BTR, and shall be removed prior to the start of the storm season each year.
- All hazardous material spills and contaminated soils shall be excavated from BTR, or covered if outside the reservoir limits, immediately upon discovery to minimize soil and water contamination and the potential of wildlife being poisoned or otherwise harmed.

- The contractor shall maintain hazardous materials spill control, containment, and cleanup kits of adequate size and materials for potential accidental instream spills and releases.

MM HAZ-2 If the LACFCD proceeds with the Conveyor Belt System Option, the LACFCD shall require that calculations and structural details for the conveyor belt be prepared by a Civil or Structural Engineer currently registered in the State of California, and the designs shall be reviewed and approved by the LACFCD prior to commencement of sediment removal activities. The conveyor belt system shall be designed in accordance with all applicable seismic standards and shall be enclosed along the portion of the system that crosses Big Tujunga Canyon Road to prevent falling rocks, sediment, or debris from posing a hazard to workers or vehicular traffic. The minimum vertical clearance for vehicles passing under the conveyor belt at Big Tujunga Canyon Road shall be 17 feet tall to ensure adequate fire and emergency vehicular access. The conveyor belt system shall be located along one side of the on-site access road to ensure the safe passage of vehicular traffic on the access roads between BTR and Maple Canyon SPS.

MM HAZ-3 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall require that the Contractor prepare a Site-Specific Health and Safety Plan for review and approval. The Plan would be implemented throughout the sediment removal and sediment placement activities. The Site-Specific Health and Safety Plan shall be prepared in accordance with the Occupational Safety and Health Administration's (OSHA's) Safety and Health Regulations for Construction (29 *Code of Federal Regulations* 1926) and include, at a minimum, the following:

- A Site Health and Safety Officer.
- An Access and Evacuation Plan.
- A Conveyor Safety Plan to ensure safety of the workers and the public around the conveyor belt system and Maple Canyon SPS site both during working and non-working hours.
- Identification of site hazards for the construction Project with a Job Hazard Analysis included for each major construction task, including response in the event of an earthquake.
- A Site Specific Health and Safety Plan, which shall be signed and stamped by an American Board of Industrial Hygiene (ABIH)-Certified Industrial Hygienist (CIH) or Safety Professional (CSP) certified by the Board of Certified Safety Professionals.

MM HAZ-4 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall require that the Contractor prepare an Emergency Procedures-Fall Protection Program developed specifically for the Project site where the construction work shall be performed. The Fall Protection Program shall be current and in accordance with Section 1926.500 of the Occupational Safety and Health Administration's (OSHA's) Safety and Health Regulations for Construction and the *California Code of Regulations* (Title 8, Article 24, §1669 and 1670). The Plan shall identify for following:

- Type of equipment.
- Inspection procedures and inspection intervals.
- Location(s) where fall protection equipment shall be used.
- Documentation that site personnel have been trained in the proper use of the fall protection equipment.

MM HAZ-5 Prior to commencement of any sediment removal activities in the first year of Project implementation, and in compliance with Article 87 of the California Fire Code and National Fire Protection Association Standard No. 1, the LACFCD shall prepare a Fire Protection Plan that includes emergency reporting procedures; emergency notification, evacuation, and/or relocation of all persons on site; procedures for "hot work" operations; management of hazardous materials and removal of combustible debris; maintenance of emergency access roads; identification of exit routes and assembly areas; and identification of fire apparatus. The Fire Protection Plan shall be provided to the USFS for review and approval prior to commencement of any sediment removal activities.

4.9 HYDROLOGY AND WATER QUALITY	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of pollutant runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

4.9.1 EXISTING CONDITIONS

BTR and Maple Canyon SPS are within the 834-square-mile Los Angeles River Watershed. Big Tujunga Canyon Creek (Hydrologic Unit Code 180701050103) flows into Big Tujunga Reservoir, which has been created by the arched Dam across the canyon. Water that is discharged through Big Tujunga Dam flows into Big Tujunga Creek and travels approximately 12.5 miles before it reaches Hansen Dam, which is owned and operated by the USACE. Water that is discharged through Hansen Dam travels into the Hansen Spreading Grounds and Tujunga Spreading Grounds for groundwater recharge (operated by LACFCD), the Los Angeles

River, and ultimately the Pacific Ocean in the City of Long Beach. Water retained behind Hansen Dam and within the spreading grounds replenishes the San Fernando Valley Groundwater Basin, which underlies Hansen Dam.

Water inflow to BTR and the Dam varies considerably from day to day and from year to year, based on weather events. In general, the reservoir elevation levels are maintained between 2,205 and 2,213 feet above msl, when feasible. Big Tujunga Canyon Creek upstream of Big Tujunga Reservoir is a perennial stream (i.e., flows all year), while Big Tujunga Creek maintains flowing water on a semi-permanent or seasonal basis. The drainages in the upper portion of Maple Canyon SPS do not appear to contain perennial flows. These drainages eventually drain into Big Tujunga Creek. The Project site and surrounding area is underlain by metamorphic bedrock, and there are no underlying groundwater resources within the Angeles National Forest (MWD 2007).

BTR and Maple Canyon SPS are not located within areas with flood hazards (LACDRP 2012b). The Big Tujunga Creek and Wash are not listed as impaired water bodies under Section 303(d) of the Clean Water Act (LARWQCB 2009).

4.9.2 IMPACT ANALYSIS

Project Design Features

PDF HYD-1 Flows into BTR will bypass the work area through a High Density Polyethylene (HDPE) pipeline that conveys inflow from the upstream reservoir, through the Dam's riser/penstock/valve, and outletting around the transition point between the plunge pool and the beginning of Big Tujunga Creek. The bypass pipeline will reduce the water content in the sediment to be removed from BTR and result in an inflow equal to outflow during the non-storm season, reflecting the non-storm season natural creek flow conditions.

PDF HYD-2 The existing vehicular access road, debris basins, underground drainage pipes and surface drainage facilities (e.g., gutters, inlets, and surface drains) installed throughout Maple Canyon SPS during the previous sediment placement activities would be extended into new fill areas of Maple Canyon SPS to prevent erosion and to facilitate drainage within Maple Canyon SPS. All facilities will be constructed in compliance with the LACDPW Hydraulic Design Manual standards.

Regulatory Requirements

RR HYD-1 Prior to the start of sediment removal activities, the LACFCD shall file a Permit Registration Document (PRD) with the State Water Resources Control Board (SWRCB) in order to obtain coverage under that National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with the Construction and Land Disturbance Activities (Order No 2009-009-DWQ, NPDES No. CAS000002) or the latest approved general permit. This permit is required for construction activities (including demolition, clearing, grading, and excavation) and other land disturbance activities that result in the disturbance of one acre or more of total land area. The PRD consists of a Notice of Intent (NOI); Risk Assessment; Site Map; Storm Water Pollution Prevention Program (SWPPP); annual fee; and a signed certification statement. Pursuant to permit requirements, the Contractor shall

develop and incorporate Best Management Practices (BMPs) for reducing or eliminating construction-related pollutants in site runoff.

RR HYD -2 Discharges are regulated under SWRCB Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification", which requires compliance with all conditions of the Water Quality Certification issued by the Regional Water Quality Control Board (RWQCB). Compliance with the Water Quality Certification issued by the RWQCB would ensure that any discharge from the Project does not conflict with the applicable provisions of Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, or any other applicable requirements of State law.

Impact Discussion

a) Would the project violate any water quality standards or waste discharge requirements?

f) Would the project otherwise substantially degrade water quality?

Less than Significant With Mitigation. The Project's dewatering process has the potential to release sediment-laden waters into Big Tujunga Creek. Dewatering would occur by releasing waters through the Dam valves to the maximum extent, and the remaining water would be discharged through mechanical pumping in Year 1 and through a possible combination of mechanical pumping and opening of the sluice gate in subsequent years. Water would be released into the plunge pool, which would serve as a large settling pool and water quality BMP to retain any sediment in the released water.

If abnormally high amounts of sediment (i.e., increased turbidity) were allowed to flow into downstream waters, potential impacts could include reductions in the sunlight's penetration into the water, reducing photosynthesis by algae and other aquatic plants, thereby reducing a food source for other aquatic life. Turbidity can reduce the abundance of insect larvae (another food source) and can cause fish mortality if turbidity lasts for long periods of time. Therefore, the sedimentation in Big Tujunga Creek may negatively impact water quality for aquatic life, including the Santa Ana sucker.

In order to ensure that any residual sediment in the plunge pool waters do not negatively affect downstream waters, PDF BIO-3 from Section 4.4, Biological Resources, sets forth the requirement for the placement of filtration BMPs—such as sand/gravel bags, silt fencing and/or other filtering devices—between the plunge pool and Big Tujunga Creek. In addition to the filtration BMPs, MM BIO-3 requires that signs are posted to indicate that the area downstream is an "Environmentally Sensitive Area" and that no work activities shall occur downstream of the BMPs. Additionally, a Biological Monitor would conduct periodic construction monitoring visits throughout dewatering, stream bypass, and sediment removal activities each season (generally April 15 through October 15, unless sediment removal is begun/ended early based on rain conditions of the year) to visually monitor the condition of the flow and depth of water through Big Tujunga Creek and to confirm that the water quality BMPs are in place and no release of sediment is observed downstream of the plunge pool. Implementation of MM BIO-3 would ensure that water quality impacts related to sedimentation would be less than significant.

The Project would not generate any new land use or introduce any new sources of wastewater discharge or effluent that could adversely impact wastewater. Additional employees would be introduced to the Project site that would generate additional sewage, but the increased amount would be negligible and there would be no change to the type or concentration of effluent generated at the site. There would be a less than significant impact associated with wastewater discharge requirements and no mitigation is required.

Equipment and refueling activities at BTR and Maple Canyon SPS may lead to leaks of oil and grease, vehicle fluids, and other solvents into the ground, which may then be washed down into the creek. The accidental introduction of these pollutants into the creek would be significant prior to mitigation. Compliance with MM HAZ-1 regarding hazardous material handling at the site and RR HYD-1 regarding the implementation of non-storm water management and materials pollution control BMPs, as outlined in the SWPPP for the Project, would reduce pollutants in the runoff. Compliance with the State Water Resources Control Board's (SWRCB's) Order No. 2003-0017-DWQ (RR HYD-2) regarding discharges from the Project would further reduce pollutants from being discharged into the downstream portion of the Creek. Impacts on water quality would be less than significant with compliance with MM HAZ-1 under both the Low Emission Trucking Option and the Conveyor Belt System Option.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. The proposed sediment removal activities would not require the use of municipal water supplies and would therefore have no demand for groundwater supplies. Water to be used for dust control at the access roads would be limited and would come from BTR and/or from the water bypass pipeline. Post-Project revegetation efforts at Maple Canyon SPS would require occasional water truck trips from the reservoir in order to fill the existing 50,000-gallon water tank at Maple Canyon SPS for use in irrigation. Therefore, the Project would have negligible demands for groundwater supplies as a result of Project implementation and impacts would be less than significant.

Once dewatering of the BTR is complete, the LACFCD's Contractor would have completed installation of the upstream bypass line, and inflows to the reservoir would then be diverted through the High Density Polyethylene (HPDE) line directly into Penstock 1 or 2. As stated in PDF HYD-1, the operation of the bypass line will ensure that inflows into the BTR from upstream areas are equal to outflows from the bypass line (outletting around the transition point between the plunge pool and the beginning of Big Tujunga Creek). As a result, non-storm season flows from BTR would reflect natural creek flow conditions.

During this time, there would be no water in the reservoir to release to supplement the creek flows. As under natural conditions in a dry year, the stream could experience reduced non-storm season flows, depending on rainfall. During typical operating procedures, the LACFCD generally releases water from the reservoir at the same rate as the inflow into the reservoir (Chimienti 2012); thus, the stream flows mimic natural conditions during the dry season.

Using the LACFCD's database of flow releases from the Dam, a statistical "t-test" analysis[17] was performed on inflow/outflow data[18] during the months of May, June, July, August, and September from 1999 to 2009 to verify whether water releases during the dry season have historically equaled inflow from the reservoir (Siongco, 2012). While this time period included a wide range of natural variation with both extremely dry and wet years, the analysis verifies that inflow typically equals outflow during these non-storm season months. September was the only month to show an inflow vs. outflow difference, with a mean outflow of 0.60 cfs compared to inflow of 1.6 cfs ($p < 0.0001$), which suggests that, on average, September may provide more water during bypass operations than has typically been released historically during this month (BonTerra Consulting 2013).

The historic average inflow into the reservoir during the non-storm season is not substantively different than the historic average outflow due to historic programmed releases. Low flows in the non-storm season are anticipated to be comparable to the average year's outflow; therefore, impacts to surface water flows in Big Tujunga Creek would not be substantially reduced such that reductions in the groundwater infiltration of downstream facilities could occur. As described in the Flow Data Memorandum (Appendix B-9), based on observable historic data, the bypass system (inflow equal to outflow) is not expected to negatively impact the creek flows during the non-storm season under both the Low Emission Trucking Option and the Conveyor Belt System Option (BonTerra Consulting 2013) and no mitigation is required.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?

Less than Significant Impact. As sediment is placed, the existing access road would be continued through the newly filled portions of the Maple Canyon SPS. As stated in PDF HYD-2, the design for Maple Canyon SPS is based on LACDPW Hydraulic Design Manual standards and incorporates features to reduce erosion of sediment. In addition to the extension of the vehicular access road, underground drainage pipes and surface drainage facilities (e.g., gutters, inlets, and surface drains) were installed throughout Maple Canyon SPS during the previous sediment placement activities to convey surface runoff through Maple Canyon SPS and to intercept any natural seepage from the underlying strata. Debris basins were also installed at the upstream end of each underground drainage pipe to catch eroded sediment from the natural drainages. These drainage facilities would be extended into new fill areas of Maple Canyon SPS.

As stated in PDF AES-1, the LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document sets forth a plan for the fill placement and ultimate closure of Maple Canyon SPS. This plan regulates revegetation activities after completion of sediment placement in order to restore biological functions to the hillsides, to reduce visual impacts, and to control erosion at the SPS. This Plan requires the LACFCD to provide annual monitoring reports to the USFS to ensure the success of the revegetation efforts. Impacts to drainage patterns within Maple Canyon SPS would be less than significant and no mitigation is required.

As described in Section 3.0, Project Description, flow rates are a factor for consideration when determining the impacts of dewatering on the hydrology of Big Tujunga Creek. Taking into consideration historic flows experienced in wet years (i.e., rainfall greater than 32 inches), the

[17] The t-test assesses whether the means of two groups are statistically different from each other.
[18] It should be noted that inflow data was measured in the morning once per day compared to gauge measurements continuously taken for outflow data; continuous inflow data is not available.

LACFCD's ARRS system data was used to develop a Dewatering Schedule for this "worst case" scenario (i.e. need for high-flow releases from the Dam). The average inflow to BTR during the month of April in a wet year is estimated to be 72.5 cfs.

Table 3-1 in Section 3.0, Project Description, presents the Wet Year Dewatering Schedule. This is the anticipated schedule that the LACFCD would adhere to during a wet year to dewater the reservoir after April 15, which would be a worst case scenario for potential impacts to hydrology within the Creek. As required in PDF BIO-2, the reservoir would be dewatered during the storm season (October 15 to April 15) to the extent practicable. Releases shall not exceed 180 cfs, and Dam operations shall 'ramp' flows (i.e., step-wise increases and decreases) to mimic natural stream hydrology.

For dewatering during a wet year, Valve A-1 would be used to release water starting at 15 cfs and ramping flows up to 180 cfs (Table 3-1). It would take approximately 5 days of ramping flows to reach an outflow of 180 cfs. In total, approximately 5 days of ramping releases from 0 to 160 cfs, and 2 additional days of releases at 180 cfs would be required to dewater the reservoir in a wet year from an elevation of 2,221 feet above msl to an elevation of 2,188 feet above msl. Flows would ramp down (decrease) naturally as the water approaches minimum pool and there is less water pressure from water in the reservoir (Chimienti 2013).

This dewatering program provides for substantially less intense flows, for a substantially reduced period of time, than has been historically witnessed at the Dam. As described in the Flow Data Memorandum located in Appendix B-9, data from March 13, 2011 through April 12, 2011 reveals the recent high flow releases in which a total of 27 of 31 days were at releases of 200 cfs, with the remaining 4 days at 150 cfs (BonTerra Consulting 2013). The proposed dewatering regime flow rate recommendation (i.e., maximum of 180 cfs) is within the range of flows and the below the maximum flow (i.e., 200 cfs). These 2011 high flow rates are well above the anticipated releases during dewatering activities.

Average year dewatering and dry year dewatering would follow a similar pattern of "ramping up" and "ramping down" flows as shown in Table 3-1 to prevent impacts to hydrology and biological resources downstream of the plunge pool in Big Tujunga Creek. Therefore, the Project's dewatering activities would not introduce changes to the historic flows in Big Tujunga Creek that could negatively alter the existing drainage pattern of the site or area (including through the alteration of the course of a stream or river) in a manner that would result in substantial erosion or siltation on site or off site under both the Low Emission Trucking Option and the Conveyor Belt System Option; no mitigation is required.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?

e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of pollutant runoff?

Less than Significant Impact. Water from the BTR is released into the Creek and held behind Hansen Dam, which is approximately 13 miles downstream, and ultimately delivered to the Hansen and Tujunga Spreading Grounds. These facilities contain the waters from Big Tujunga Creek and prevent flows from posing a flooding hazard to downstream facilities and land uses. Existing coordination between the LACFCD and the USACE regarding available capacity in

downstream facilities would continue to occur to ensure that Hansen Dam has the ability to accept dewatering flows from BTR. The dewatering and water bypass pipeline would occur during the non-storm season and would not cause flooding hazards. In the long term, the increased capacity of BTR would reduce the potential for Dam overtopping and downstream flooding, which is a beneficial impact.

The sediment placement at Maple Canyon SPS would change drainage patterns within Maple Canyon. However, drainage pipes with drop inlets would be installed to maintain storm water flows associated with the former Maple Canyon Creek, but within a pipe system. The drainage pipes would also collect surface runoff and reduce surface water volume and velocity. These changes would be confined within the SPS and would not affect downstream drainage patterns and flows. Impacts would be less than significant under both the Low Emission Trucking Option and the Conveyor Belt System Option, and no mitigation is required.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. The proposed Project would not involve the construction of any permanent housing, structure, or infrastructure improvement. Sediment removal activities would not create or increase flood hazards at BTR, Maple Canyon SPS, or in downstream areas of the creek. Rather, the Project would reduce flood hazards to persons and structures downstream of the Dam by reclaiming the original capacity of BTR. BTR would be fully functional during the rainy season and there would be no hazards associated with the functioning of the Dam to retain storm flows. No impacts related to flooding would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

i) Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed sediment removal activities would reclaim the original capacity of BTR (i.e., 6,240 acre-feet) to accommodate future inflows and to reduce the potential for exposure of downstream populations to risks from flooding due to reduced holding capacity and water overtopping the Dam. No change to the capacity or the integrity of the Big Tujunga Dam would occur with the Project. The Big Tujunga Dam has not been subject to failure in the past, and seismic retrofit improvements were constructed in 2009. The Dam inundation area is confined to Big Tujunga Canyon downstream of the Big Tujunga Dam until Hansen Dam. BTR and Maple Canyon SPS are located outside this inundation area (LACDRP 1980). There would be no impact related to Dam failure under either the Low Emission Trucking Option or the Conveyor Belt System Option.

j) Would the project cause inundation by seiche, tsunami, or mudflow?

No Impact. The Project would not expose people or structures to tsunami hazards since the Project area is located inland and away from the Pacific Ocean. No inundation hazards by seiche or mudflow would occur because no habitable structures would be constructed at either BTR or Maple Canyon SPS. Instead, sediment removal activities would have a beneficial impact by increasing the capacity of BTR to accommodate future sediment, debris, and mudflows from

upstream areas and by preventing mudflow hazards to downstream areas. All sediment removal activities would cease and equipment and personnel would be removed from BTR and Maple Canyon SPS at the start of the storm season each year to avoid the potential for personal injury and property damage associated with storm flows and mudflows. The seiche hazards posed by BTR would remain, which is not expected to change with the Project. No modifications to the Dam are proposed that may cause or increase seiche hazards during earthquake events. No adverse impacts related to tsunami, seiche, or mudflow would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.9.3 MITIGATION MEASURES

Compliance with MM HAZ-1 would reduce impacts to hydrology and water quality to levels less than significant after mitigation.

4.10 LAND USE AND PLANNING	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

4.10.1 EXISTING CONDITIONS

BTR and Maple Canyon SPS are existing public facilities maintained by the LACFCD. These facilities are located on federal land in the Angeles National Forest, and the LACFCD operates BTR under an existing Special Use Permit (SUP) from the USFS. Operation of Maple Canyon SPS would require a new SUP. BTR and Maple Canyon SPS have a land use designation of O-NF – National Forest in the County General Plan Land Use Map and a zoning of O-S (Open Space) in the County's Zoning Map (LACDRP 2012a).

The Forest Plan for the Angeles National Forest includes the vision, strategy, and design criteria for USFS' management activities and practices to ensure the protection of forest resources. The Forest Plan designates the area where BTR is located as "Back Country, Motorized" and Maple Canyon SPS as "Developed Area Interface" (USFS 2005).

4.10.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project physically divide an established community?

No Impact. The proposed sediment removal does not involve the displacement of existing land uses or the construction of barriers across the Project area. Also, there are no residential communities near BTR or Maple Canyon SPS. Therefore, the Project would not divide an established community under either the Low Emission Trucking Option or the Conveyor Belt System Option.

b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant With Mitigation. The proposed Project would not change existing land uses at BTR or Maple Canyon SPS. The reservoir and sediment placement site do not conflict with the Open Space land use and zoning designations in the County's General Plan and Zoning Code. The proposed sediment removal at BTR also would not conflict with the Back Country, Motorized zone and the sediment placement at Maple Canyon SPS would not conflict with the Developed Area Interface zone of the Forest Plan.

In the USFS Forest Plan, Back Country, Motorized includes areas that are generally undeveloped with few roads. These have remote recreational and administrative facilities. This zone is managed for motorized public access on designated roads and trails, with some roads closed to public access. Back Country roads provide access to scattered recreational opportunities in remote areas, such as camping and access to trailhead facilities for hiking or biking. The purpose of the Back Country zone is to retain the natural character of the Angeles National Forest by limiting the level and type of development in these areas. The sediment removal activities would not affect recreational areas, roads, or the natural character in areas designated as Back Country, Motorized.

Developed Area Interface refers to areas adjacent to urban uses and developed sites with community infrastructure. These areas include developed recreational facilities; recreational and non-recreational special-use facilities; and national forest administrative facilities. They have motorized public access, designated off-highway vehicle roads, trailheads and/or staging areas leading to Back Country areas. Sediment placement would be a compatible use in this zone due to the ground disturbance allowed in these areas.

The proposed sediment removal activities would also not conflict with the strategic goals in the Forest Plan, as they relate to community protection, forest health, invasive species, outdoor recreation, energy resources, watershed conditions, and the mission of the U.S. Department of Agriculture. The Project would support the watershed functions of the Angeles National Forest, which is a beneficial impact.

Therefore, the Project would not conflict with applicable land use plans, policies, or regulations. A SUP was issued for BTR at the time of construction in the 1930s, which remains in active today. However, the LACFCD does not currently have an active SUP for the operation of Maple Canyon SPS. Although Maple Canyon SPS is a designated sediment placement site within the USFS Land Management Plan, the LACFCD does not have a permit to operate the facility. MM USE-1 would require that the LACFCD obtain an SUP from the USFS for the proposed sediment placement activities at Maple Canyon SPS. With the issuance of an SUP from the USFS, there would be no impacts related to applicable land use plans, policies, or regulations under either the Low Emission Trucking Option or the Conveyor Belt System Option.

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. There is no habitat conservation plan or natural community conservation plan for the Project area. Also, BTR and Maple Canyon SPS are not located within a designated Significant Ecological Area (SEA) under the County's SEA program. Impacts on biological resources are discussed in Section 4.4 above. No impacts related to habitat conservation plans or natural community conservation plans would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.10.3 MITIGATION MEASURES

MM USE-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall submit a complete application to the U.S. Forest Service for the issuance of a Special Use Permit (SUP) for the continued operation of Maple Canyon Sediment Placement Site for the placement of sediment removed from Big Tujunga Reservoir. Prior to commencement of sediment removal activities, the application and all supporting technical information, including the LACFCD's *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document, shall be completed to the satisfaction of the USFS.

4.11 MINERAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

4.11.1 EXISTING CONDITIONS

Mineral resources are naturally occurring chemicals, elements, or compounds formed by inorganic processes or organic substances. These resources include bituminous rock, gold, sand, gravel, clay, crushed stone, limestone, diatomite, salt, borate, potash, geothermal, petroleum, and natural gas resources. Construction aggregate refers to sand and gravel (natural aggregates) and crushed stone (rock) that are used as Portland-cement-concrete aggregate, asphaltic-concrete aggregate, road base, railroad ballast, riprap, fill, and the production of other construction materials.

The California Geological Survey (CGS) has identified deposits of regionally significant aggregate resources in the State. These clusters or belts of mineral deposits are designated as Mineral Resources Zone 2 (MRZ-2), which are areas that require special management due to the presence of mineral resources important to the State. The MRZ-2 zones in Los Angeles County are not located in or near Big Tujunga Canyon (DOC 1987). Review of maps prepared by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources shows that there are no gas or geothermal fields or active wells in or near BTR or Maple Canyon SPS (DOGGR 2010). Additionally, there are no ongoing mining or extraction activities at or near Big Tujunga Canyon.

4.11.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. There are no identified oil or mineral resources or extraction activities in the Project area. The presence and ongoing operation of the Dam and BTR at the site since 1931 precludes the use of the area for commercial aggregate resource production. The Project would involve the temporary crushing, stockpiling and hauling of aggregate material for re-use to

aggregate processors or other approved sites permitted to accept/process such materials; however, these activities are temporary in nature and are not a primary function of the LACFCD's operations at BTR or Maple Canyon SPS. However, the presence of BTR and Maple Canyon SPS do not necessarily preclude future mining activity, if desired by the LACFCD and USFS.

The Project would not require mineral resources, nor would it change the availability of resources on or near BTR and Maple Canyon SPS. Additionally, no new structures or facilities would be constructed that could restrict future mineral resource recovery activities at BTR or Maple Canyon SPS. Thus, there would be no impacts to mineral resources under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.11.3 MITIGATION MEASURES

There would be no significant impacts related to mineral resources; therefore, no mitigation measures are required.

4.12 NOISE	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.12.1 EXISTING CONDITIONS

BTR and Maple Canyon SPS are located in foothill areas of the San Gabriel Mountains and are surrounded by open space. There are no residential or other noise-sensitive land uses in the vicinity of BTR, with the exception of the Dam Operator's residence, which is located between BTR and SPS. The Dam Operator is a LACFCD employee who would participate in the proposed sediment removal activities as a primary function of employment. BTR is in a remote location within the San Gabriel Mountains, and the Dam Operator is required to reside on site to ensure the presence of trained staff in the event of an emergency during evenings/weekends. The Dam Operator's residence is not considered a noise-sensitive receptor because (1) the Dam Operator is a LACFCD employee; (2) the Dam Operator is housed in a BTR facility in order to fulfill job description requirements; and (3) the noise from the proposed Project is inherent to BTR operations.

The nearest sensitive receptors (i.e., residences) to the Project site include a few rural residential/vacation homes located along Vogel Flat Road/Stoneyvale Road located within the boundaries of the Forest approximately 2 miles west of the Project site, or approximately 2.7 vehicular travel miles down Big Tujunga Canyon Road.

Hikers come to the Big Tujunga Canyon area for natural and scenic views. Recreational visitors are generally found along Big Tujunga Creek downstream of the Dam. Due to the relatively steep slopes near BTR, there are no designated trails and very few hikers come near BTR. The trailhead at Condor Peak is the closest designated trail to the Project site. The trailhead is located approximately 1.2 miles southeast of the entrance road to BTR, and does not have

a direct line of sight to the temporary Project maintenance activities due to intervening vegetation, slopes, and hillsides.

The Project vicinity is a quiet, rural area. Noise sources include vehicles coming to and from the site for maintenance and inspection activities and equipment used for occasional sediment removal activities.

4.12.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. Section 12.08 of the County of Los Angeles Code (County Code) contains the County's Noise Ordinance, which is designed to control unnecessary, excessive, and annoying sounds by setting limits that cannot be exceeded at adjacent properties. Section 12.08.440 of the County Code prohibits construction noise between the hours of 7:00 PM and 7:00 AM on weekdays, and at any time on Sunday or a federal holiday if it creates a disturbance across a residential or commercial property line. The County also sets the daytime (Daily, except Sundays and legal holidays, 7:00 AM to 8:00 PM) noise level limits. At single-family residences, the maximum noise level from mobile equipment (non-scheduled, intermittent, short-term operations for less than 30 days) is not to exceed 75 A-weighted decibels (dBA). The maximum noise level limit from stationary equipment (repetitively scheduled and relatively long-term operations of 10 days or more) at a single-family residence is 60 dBA.

Section 12.08.570(H) of the County Code includes the following exemption from the Noise Ordinance:

> Public Health and Safety Activities. All transportation, flood control, and utility company maintenance and construction operations at any time on public right-of-way, and those situations which may occur on private real property deemed necessary to serve the best interest of the public and to protect the public's health and well being, including but not limited to street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, snow removal, house moving, vacuuming catchbasins, removal of damaged poles and vehicles, repair of water hydrants and mains, gas lines, oil lines, sewers, etc.

During the summer season (generally from April to October) sediment removal activities, noise would be generated by construction equipment at BTR and Maple Canyon SPS and by trucks hauling sediment and crushed aggregate. Maximum noise levels, occurring intermittently when a few pieces of equipment are simultaneously at full power may be 75 dBA at a distance of 500 feet from the working area. Because equipment operation varies with the nature of the

activity, average noise levels would be less. At residences two miles from the Project site, without intervening topography and vegetation, maximum noise levels would be less than 50 dBA. The topography and vegetation would provide additional noise level reductions.

Notwithstanding the distances, topography, and vegetation, the construction noise would likely be occasionally audible in the Forest at considerable distance because of the low ambient noise level and meteorological conditions conducive to long-range noise transmission. Project-generated noise levels at residences or heard by transient hikers and other Forest visitors would not be substantial or excessive. The impact would be less than significant and no mitigation would be required for either the Low Emissions Truck Option or the Conveyor Belt System Option. Additionally, because the proposed sediment removal Project is a public health and safety activity, the Project activities would be exempt from the requirements of the Noise Ordinance.

During the winter season (generally from October to April) aggregate removal activities, noise would be generated by construction equipment at the BTR aggregate stockpile site and by trucks hauling crushed aggregate between BTR and Sun Valley. It is assumed that the haul route may include Big Tujunga Canyon Road, Oro Vista Avenue, Foothill Boulevard, Wentworth Street, and Sheldon Street. There are residences adjacent to some of the street segments on this route. The rate of hauling is estimated at 28 round trips per day. At this rate, there would be a maximum of seven or eight truck passes per hour at any location on the route.

On Wentworth Street, where average daily traffic is approximately 5,800 to 8,000 vehicles per day, the increase in hourly average truck noise would be less than 2 dBA, which is not discernible to the average ear. On roads with less volume, the hourly average traffic noise increase may be 3 dBA, which would be barely discernible. Individual truck passbys may be audible and noticed by persons along the route. As previously discussed, public health and safety activities, including all flood-control operations and maintenance activities, are exempt from the County's Noise Ordinance. Additionally, the temporary traffic noise increases would not be substantial. Impacts for both the Low Emissions Truck Option and the Conveyor Belt System Option would be less than significant and no mitigation is required.

After the sediment removal and placement and aggregate removal activities, there would be approximately five years of revegetation activities at the SPS (see Section 3.1.5 of this MND and PDF AES-1). Noise sources would include (1) equipment used for installing water tanks at Maple Canyon SPS; (2) occasional truck trips bringing water and planting material to the site and light vehicle trips for revegetation crew commute; and (3) equipment used for removing water tanks from Maple Canyon SPS and asphalt from the SPS access road. The associated noise would not be different from normal traffic on Big Tujunga Canyon Road and local maintenance activities. The impact would be negligible and no mitigation is required.

b) Would the project result in exposure of persons to or generate excessive groundborne vibration or groundborne noise levels?

No Impact. Vibration affects structures and persons located relatively close to the source of the vibration. For heavy construction equipment operations, vibration would not be perceptible at distances of 200 feet and greater. There would be no sensitive receptors within 200 feet of the proposed Project activities. There would be no impact.

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No Impact. Once the Project is complete, there would be no long-term changes to the regular inspection and maintenance operations at BTR and Maple Canyon SPS. Therefore, there would be no Project-generated change in ambient noise levels in the Project vicinity.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed Project would not develop land uses that would locate persons in an area subject to noise from public or private airports, nor would the proposed Project generate aircraft noise. There would be no impact.

4.12.3 MITIGATION MEASURES

There would be no significant impacts related to noise; therefore, no mitigation measures are required.

4.13 POPULATION AND HOUSING	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.13.1 EXISTING CONDITIONS

BTR and Maple Canyon SPS do not support a residential community or contain residential land uses. However, the Dam Operator is required to reside on site. BTR is in a remote location within the San Gabriel Mountains, and the on site resident Dam Operator is important to ensure the presence of trained staff in the event of an emergency. All other staff would travel to BTR and Maple Canyon SPS to perform maintenance activities and would leave when the work is completed.

4.13.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure)?

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed sediment removal activities do not involve new construction, expansion, or alteration of BTR or Maple Canyon SPS. As discussed above, BTR and Maple Canyon SPS do not contain residential or commercial employment opportunities. The Project would not lead to the creation of housing units at BTR and Maple Canyon SPS that could directly affect a residential population, and would not involve expansion of the existing reservoir or the extension of existing infrastructure that could indirectly lead to population growth. Therefore, there would be no change in land uses that could induce growth in the area.

The Project would bring in LACFCD staff, contractors, and other authorized personnel at BTR and Maple Canyon SPS for the duration of the Project (i.e., during the daytime hours between approximately April 16 and October 14, except for Sundays and holidays, for approximately five years). The Project would require an estimated 18 workers for site equipment, 20 dump truck drivers, and 15 additional workers under the Low Emission Trucking Option.

However, these 38 to 53 individuals are not expected to generate a demand for housing, goods or services, nor would they change land uses in the area. The local population (i.e., in Los Angeles County) could provide adequate skilled workers to satisfy the construction-related positions, and there would be no need to relocate workers from other areas. The national recession has negatively affected employment for construction workers throughout Southern California, and the unemployment rate in Los Angeles County during March 2012 was 11.8 percent. Therefore, there is no shortage of local labor to satisfy the worker demands of the Project. Thus, no indirect change in the population and housing of the County or in the immediately surrounding area is expected with the presence of construction crews on site.

The Project would not promote development in the surrounding area, nor would it induce indirect population growth. Also, the Project would not eliminate the existing Dam Operator's house; it would not displace the residents/household of this house; nor would it necessitate the construction of replacement housing elsewhere. There would be no impacts related to population and housing under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.13.3 MITIGATION MEASURES

There would be no significant impacts related to population and housing; therefore, no mitigation measures are necessary.

4.14 PUBLIC SERVICES	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

4.14.1 EXISTING CONDITIONS

Public services in the unincorporated areas of the County are provided by the Los Angeles County Fire Department (LACFD) and the Los Angeles County Sheriff's Department (LACSD). In addition, the USFS provides fire prevention and preparedness; hazardous fuels reduction; wildfire suppression; and emergency support within the Angeles National Forest. Under the California Fire Assistance Agreement, local fire departments, including the LACFD, provide fire protection and suppression services to State and federal agencies. Under the Cooperative Fire Protection Agreement, CALFIRE and federal agencies (e.g., the USFS, the National Parks Service) assist each other on the suppression of wildland fires on lands adjacent to each other (Firescope 2009).

The USFS provides law enforcement of federal laws within the Angeles National Forest. The LACSD is responsible for the enforcement of State and local laws on federal lands (within the Angeles National Forest) and at LACFCD facilities. BTR and Maple Canyon SPS are fenced/gated to prevent trespassing and vandalism and to promote public safety.

4.14.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

- **Fire protection?**
- **Police protection?**
- **Schools?**
- **Parks?**
- **Other public facilities?**

Fire Protection

Less than Significant Impact. The Project does not involve the development of any new permanent structures or operational activities that could increase demands for long-term fire protection services. Temporary Project-related activities would create a negligible increased demand for fire-protection services due to the use of equipment, electricity, fuels, and other fire sources that may ignite flammable and combustible materials. As discussed under Section 4.8, Hazards and Hazardous Materials, the Project has the potential to increase the risks associated with wildfires due to the presence of heavy construction equipment, including the use of flammable liquids and the presence of combustion engines, which could result in leaks that create fire risks. However, the Project's lack of new land uses that could increase fire service demands (i.e., new residential, industrial or commercial land uses), there would be no demands for fire protection services that could result in new or physically altered fire protection facilities under either the Low Emission Trucking Option or the Conveyor Belt System Option.

Additionally, as discussed in Section 4.8, Hazards and Hazardous Materials, MM HAZ-5 requires that the LACFCD prepare a Fire Protection Plan that includes emergency reporting procedures; emergency notification, evacuation, and/or relocation of all persons on site; procedures for "hot work" operations; management of hazardous materials and removal of combustible debris; maintenance of emergency access roads; identification of exit routes and assembly areas; and identification of fire apparatus.

Sheriff Protection

Less than Significant Impact. The Project does not involve the development of any new permanent structures or operational activities that could increase demands for long-term sheriff protection services. Temporary Project-related activities, such as the presence of sediment removal equipment on the Project site, may provide increased opportunities for theft. Both BTR and Maple Canyon SPS are fenced and the LACFCD's Contractor would be required to secure building materials and construction equipment to prevent theft and vandalism from occurring at the Project site during construction. Additionally, there would be no unusually valuable or out of the ordinary equipment or materials associated with Project implementation that would generate an unusual attraction for theft. Any increase in demand for sheriff protection services due to the Project would be less than significant, and there would be no new demands for sheriff protection services that could result in new or physically altered sheriff facilities under either the Low Emission Trucking Option or the Conveyor Belt System Option.

Schools, Parks, and Other Public Facilities

No Impact. The Project would generate no demand for schools, parks, or other public facilities because the Project does not involve the development of new or expanded land uses and would not generate any population growth. No impact on schools, parks, or other public facilities would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

4.14.3 MITIGATION MEASURES

There would be no significant adverse impacts related to public services; therefore no mitigation measures are required.

4.15 RECREATION	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would/does the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

4.15.1 EXISTING CONDITIONS

BTR and Maple Canyon SPS do not provide public park or recreational facilities, although the surrounding area within the Angeles National Forest offers opportunities for various recreational activities. While BTR and Maple Canyon SPS are located within the Angeles National Forest, public access within BTR and Maple Canyon SPS is prohibited. Fences are present around the facilities to prevent trespassing and for public safety. Also, steep slopes along BTR preclude easy access to the Dam and reservoir.

Exhibit 4-1, USFS Recreation Areas, identifies the area surrounding the Project site as a "High Impact Recreation Area" and depicts the location of a nearby Scenic Viewpoint where vehicles can pull off of the road and temporarily park in order to view the surrounding scenery. This viewpoint contains six parking spaces and has views of the surrounding mountainsides; the north side of the Dam structure; and the water within the reservoir. Also depicted are campgrounds, trailheads, and picnic areas.

The trailhead at Condor Peak is the closest designated trail to the Project site. The trailhead is located approximately 1.2 miles southeast of the entrance road to BTR, which leads to a trail designated as "13W05" that travels in a northerly direction into the Forest. This trail has no views of the Project site. The SCE easement within Maple Canyon has an informal trail alignment adjacent to the proposed fill area.

Downstream of BTR are various recreational areas. From the Dam structure, Big Tujunga Creek flows southwesterly for approximately 13.5 miles through the San Gabriel Mountains until it reaches the Hansen Flood Control Basin behind Hansen Dam (owned and operated by the USACE). The City of Los Angeles Department of Parks and Recreation operates several recreational facilities at the Hansen Dam site, including the Gold Course, Recreation Center, Aquatic Center, and Park.

Additionally, informal recreational activities, including swimming, are known to occur along Big Tujunga Creek between Big Tujunga Dam and Hansen Dam. According to the USFS Land Management Plan, the Big Tujunga Canyon area is marked by concentrated public use, mostly family based, due to its accessibility to water. It is an area that is enjoyed by many people and that enjoyment leads to chronic overuse. Recreational uses are conflicting with other resource values and the focus of recreation along low elevation riparian areas is reaching or exceeds capacity. Areas of concentrated use (such as trailheads and easily accessible water areas) are reaching or exceeding their carrying capacity to provide a safe and enjoyable experience to the public. The intensive use is resulting in impacts to vegetation and resources; specifically, soil

compaction, loss of vegetation, pollution of riparian environments, and erosion near Big Tujunga Creek. Water-centered recreation in Big Tujunga Canyon is strongly influenced by the low flow releases from BTR (USFS 2005).

4.15.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact. As discussed above in Section 4.13, Population and Housing, proposed sediment-removal activities would not induce population growth directly or indirectly that could generate a need for or increase use of neighborhood and regional parks, including nearby recreational trails. Sediment removal activities would be confined to BTR and Maple Canyon SPS and would not affect nearby Forest trails, recreational areas, or downstream parks.

BTR and Maple Canyon SPS do not support recreational activities, nor do they provide recreational facilities. Also, the Project would not include the construction or reconstruction of recreational facilities. However, during Project implementation during the non-storm season, the LACFCD would not have the ability to make periodic releases from the Dam because no water would be retained within BTR during sediment-removal activities. The non-storm season is also the peak recreational season for activity along Big Tujunga Creek and at Hansen Dam.

During sediment removal activities, all dry season outflows to Big Tujunga Creek would be equal to the dry season inflows as dictated by natural conditions, as if the Dam were not there. To facilitate creek flow diversion around the Dam during the non-storm season, a High Density Polyethylene (HDPE) creekflow bypass line would be constructed to allow natural flows from the upstream Big Tujunga Creek to bypass the reservoir (see PDF HYD-1).

As discussed under Threshold 4.9(b) and in the Flow Data Memorandum (Appendix B-9), historic average inflow into the reservoir during the non-storm season is not substantively different than the historic average outflow due to historic programmed releases. Inflows in the non-storm season are anticipated to be comparable to the average year's outflow in the non-storm season. Therefore, even though BTR would operate with inflow equal to outflow during the non-storm season when the BTR is dewatered, non-storm season flows would be generally maintained at historic rates. As such, surface water flows in Big Tujunga Creek are not anticipated to be altered such that impacts to water-related recreation could occur within the Creek or in downstream recreational facilities associated with Hansen Dam. Therefore, Project implementation would not result in substantial changes in water supply at downstream water-related recreational uses and impacts to existing recreational facilities under both the Low Emission Trucking Option and the Conveyor Belt System Option would be less than significant and no mitigation is required.

4.15.3 MITIGATION MEASURES

There would be no significant impacts related to recreation; therefore, no mitigation measures are required.

4.16 TRANSPORTATION/TRAFFIC	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system. Including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

4.16.1 EXISTING CONDITIONS

Big Tujunga Canyon Road is a two-lane highway that travels between BTR and Maple Canyon SPS. The Angeles Forest Highway (County Road No. 3) extends in a northwesterly direction from the Angeles Crest Highway (SR-2), which is an arterial State highway located approximately 3 miles southeast of BTR and approximately 1.2 miles south-southeast of Maple Canyon SPS at its nearest point. The Angeles Forest Highway, also a 2-lane highway, is located approximately 650 feet from the top eastern end of Maple Canyon SPS; I-210 is approximately 5.4 miles south of the Project site. Traffic counts in 2011 show approximately 60 vehicles during the peak hour and 300 vehicles per day passed on SR-2 in the Project area (Caltrans 2011).

According to the 2010 Congestion Management Program for Los Angeles County, the segment of I-210 between SR-2 and the community of Sunland is operating at a Level of Service (LOS) D or better in both the AM and the PM Peak Hours (MTA 2010). Additionally, Caltrans does not identify this segment of I-210 as being a “Congested Urban Area” (Caltrans 2010).

Far fewer vehicles are expected on Big Tujunga Canyon Road and Angeles Forest Highway. Existing vehicle trips to BTR and Maple Canyon SPS are minimal and include an average of a couple of trips per day for maintenance-related activities.

4.16.2 IMPACT ANALYSIS

Regulatory Requirements

RR TRA-1 The movement of large equipment on public roadways shall be made in compliance with the Los Angeles County Code (Title 16, Highway), which requires a moving permit and which includes provisions regarding the size of vehicles/equipment; night moves; moving in inclement weather; parking on streets; travel outside peak hours and holidays; over-length, over-height, and over-width requirements; lighting; signs; and restricted routes. Oversized transport vehicles on State highways, if required, would need to obtain a transportation permit from the California Department of Transportation (Caltrans).

Impact Discussion

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Sediment Removal/Placement at BTR and Maple Canyon SPS

Less than Significant Impact. Under both the Low Emission Trucking Option and the Conveyor Belt Option, trucks carrying heavy equipment would come to BTR and Maple Canyon SPS at the start of the planned sediment removal activities around April 16 of each year. Approximately four front loaders with four-yard buckets, four loader/excavators with three- to four-yard buckets, one water truck, and two tender trucks (for fuel and maintenance) would be brought to BTR at the start of the non-storm season. In addition, four front loaders with four-yard buckets, one D8 dozer, one excavator with a two-yard bucket, and one water truck would be transported to Maple Canyon SPS at that time.

All equipment would be transported out of BTR and Maple Canyon SPS prior to the start of the storm season (around October 15). These approximately 18 vehicle trips for equipment transport would not have a measurable impact on traffic on Big Tujunga Canyon Road. However, these pieces of equipment would be required to travel along I-210 to reach the Project site. In compliance with RR TRA-1, the movement of large equipment on public roadways shall be made in compliance with Title 16, Highway, of the Los Angeles County Code, which requires a moving permit and provisions on the size of vehicles/equipment; night moves; moving in inclement weather; parking on streets; travel outside peak hours and holidays; over-length, over-height, and over-width requirements; lighting; signs; and restricted routes. Per RR TRA-1, oversized transport vehicles on State highways, if required, would need to obtain a Caltrans transportation permit. Impacts on the circulation system would be less than significant and no mitigation is required.

There would be no impact to the use of mass transit systems, non-motorized travel, or pedestrian and bicycle paths with Project implementation because the Project site is not near any alternative transportation systems and is too remote to allow for bicycle or pedestrian access to the site by Project workers.

Low Emission Trucking Option

Less than Significant Impact With Mitigation. During the non-storm season, dump trucks would come to the Project site each day to transport sediment between BTR and Maple Canyon SPS, and would leave at the end of each day. Approximately 20 double-bottom belly dump trucks with 16 to 20 cubic yards of capacity are expected to come to the Project site, plus another 33 employee vehicles. These approximately 53 vehicle trips during the morning and again in the afternoon would add to traffic volumes to the local freeway system in the non-storm season, specifically the I-210 and Big Tujunga Canyon Road.

Additionally, during the non-storm season, a continuous stream of dump trucks would be running from BTR to Maple Canyon SPS and back to BTR throughout the day. It is estimated that 400 truck trips would occur each day, which would be crossing Big Tujunga Canyon Road. The crossing of large dump trucks across Big Tujunga Canyon Road has the potential to create traffic hazards for vehicles traveling through the Forest.

During the storm season, approximately 28 round-trip truck trips would occur each day to transport crushed rock materials from the Project site to an aggregate processor or other approved sites permitted to accept/process such materials. This assumes approximately 5 trucks operating per day, requiring approximately 1 hour to complete the 40-mile round trip between the Project site and the re-use facility.

In order to reduce impacts to the circulation system due to increased truck traffic, MM TRA-1 requires the preparation of a Traffic Safety and Control Plan. This Plan would require the use of flag person(s) stationed at the intersection of the Project access road and Big Tujunga Canyon Road during all trucking operations under the Low Emissions Truck Option and would prohibit truck traffic queuing along Big Tujunga Canyon Road. MM TRA-1 would also require that truck traffic be managed such that no queuing occurs along the I-210 ramps during transport of gravel from the Project to re-use facilities. The Plan would require mandatory participation by the construction crew in traffic safety meetings to ensure that the Plan is fully implemented and periodic monitoring of trucking operations along affected I-210 ramps to confirm that no queuing occurs. With the implementation of MM TRA-1, Project-related traffic impacts to Big Tujunga Canyon Road and I-210 would be less than significant after mitigation.

Conveyor Belt System Option

Less than Significant Impact With Mitigation. Similar to the Low Emission Trucking Option, during the non-storm season, dump trucks would come to the Project site each day for use in the transport of sediment between BTR and Maple Canyon SPS, and would leave at the end of each day, adding to traffic volumes to the local freeway system, specifically the SR-210 and Big Tujunga Canyon Road. During the storm season, approximately 28 round-trip truck trips would occur each day to transport crushed rock materials from the Project site to an aggregate processor or other approved sites permitted to accept/process such materials. However, the Conveyor Belt Option would not require the continuous stream of dump trucks running from BTR to Maple Canyon SPS and back to BTR throughout the day for sediment delivery.

In order to reduce impacts to the circulation system due to increased truck traffic, MM TRA-1 requires the preparation of a Traffic Safety and Control Plan. This Plan would prohibit truck traffic queuing along Big Tujunga Canyon Road or along the I-210 ramps during transport of gravel from the Project to re-use facilities. The Plan would require mandatory participation by the construction crew in traffic safety meetings to ensure that the Plan is fully implemented and periodic monitoring of trucking operations along affected I-210 ramps to confirm that no queuing occurs. With the implementation of MM TRA-1, Project-related traffic impacts to Big Tujunga Canyon Road and SR-210 would be less than significant after mitigation.

b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The Los Angeles County Congestion Management Program (CMP) calls for monitoring of the highway and roadway system in the County and a multi-modal system performance analysis. The program also promotes alternative modes of transportation, requires monitoring of land use and roadway performance by individual jurisdictions, and provides guidelines for conducting a Traffic Impact Analysis (TIA). The CMP TIA guidelines require analysis of freeway segments, ramps, and intersections if a proposed project would add 150 or more trips (in either direction) during either the AM or PM weekday peak periods at any CMP location.

Big Tujunga Canyon Road is not part of the CMP Highway System and there is no portion of SR-2 north of I-210 that is included in the CMP highway system (MTA 2010). However, freeways and major roadways in the County's CMP would be utilized by trucks and vehicles coming to and from BTR and Maple Canyon SPS during the non-storm season, and also during the rainy season as trucks carry gravel to a re-use facility. Approximately 53 vehicle trips during the morning and again in the afternoon would add to traffic volumes to the local freeway system in the non-storm season, specifically the I-210. This would be less than the 150 trips required to potentially impact a CMP location.

Approximately 28 round-trip truck trips would occur each day to transport crushed rock materials from the Project site under both Options. This assumes approximately five trucks operating per day, and potentially contributing to morning and afternoon peak hour traffic. However, this would be less than the 150 trips required to potentially impact a CMP location. Therefore, increases in traffic due to the Project would not conflict with the Los Angeles County CMP. Impacts would be less than significant under both the Low Emission Trucking Option and the Conveyor Belt System Option and no mitigation is required.

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or change in location that results in substantial safety risks?

No Impact. The Project would have no impact on air traffic patterns, as proposed sediment removal activities would not generate a demand for air transportation. There is a helipad north of the Dam that is occasionally used by LACFCD personnel to visit the Dam and BTR, or for emergency fire fighting operations. No major change in the use of this helipad would occur with the Project. No impacts on air traffic patterns would occur under either the Low Emission Trucking Option or the Conveyor Belt System Option.

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Would the project result in inadequate emergency access?

Sediment Removal/Placement at BTR and Maple Canyon SPS

Less than Significant Impact. Under both the Low Emission Trucking Option and the Conveyor Belt Option, trucks and heavy equipment would operate within the confines of the BTR and the Maple Canyon SPS for the excavation and deposition of sediment. These activities are regularly performed by the LACFCD in various dams and debris basins throughout the County and would not result in hazards or design features that could significantly impact emergency access. All access roads would be paved and maintained as a part of Project implementation, per PDF AQ-3, and impacts would be less than significant.

Low Emission Trucking Option

Less than Significant With Mitigation. Sediment removal activities using low emission trucks would not require changes to any road configurations that could create sharp curves or dangerous intersections. All access roads would be paved and maintained as a part of Project implementation, per PDF AQ-3, to accommodate trucks travelling between BTR and Maple Canyon SPS.

However, truck traffic during sediment removal activities under the Low Emission Trucking Option would cross Big Tujunga Canyon Road as many as 400 times per day, which could create a hazard for cross-traffic along Big Tujunga Canyon Road.

To reduce the potential for increased traffic hazards and impacts to emergency access on Big Tujunga Canyon Road during the hauling of sediments from BTR to Maple Canyon SPS and back, MM TRA-1 requires preparation of a Traffic Safety and Control Plan that sets requirements for the design and use of traffic signs, driveway access, barricades, and other measures to maintain public convenience and safety for motorists, cyclists, pedestrians, and construction workers. MM TRA-1 also sets forth the coordination protocol with law enforcement and other emergency agencies, as necessary. Compliance with the County Code will prevent traffic hazards when large equipment is transported to and from BTR and Maple Canyon SPS. Compliance with MM TRA-1 would minimize obstructions to regular traffic flows; would promote traffic safety; and would maintain emergency access within the Angeles National Forest. With mitigation, impacts would be reduced to levels considered less than significant.

Conveyor Belt System Option

Less than Significant Impact With Mitigation. Under the Conveyor Belt System Option, trucks would not be crossing Big Tujunga Canyon Road from BTR to Maple Canyon SPS. The conveyor belt system would be built along the side of the access road from BTR and over Big Tujunga Canyon Road to Maple Canyon SPS. It would also be loaded with sediment materials continuously throughout the Project operations. A conceptual visual depiction of the conveyor belt system is shown on Exhibit 4-2. High winds, seismic events, or structural failures could result in the spilling of rocks, sediment, and debris from the conveyor belt system into Big Tujunga Canyon Road below. Specifically, structural instability and/or falling debris could pose significant hazards to the on-site crew and to travelers on Big Tujunga Canyon Road as the conveyor belt system crosses the road.

As discussed in Section 4.8, Hazards and Hazardous Materials, the conveyor belt would be installed and operated in accordance with the 2012 Standard Specifications for Public Works Construction (Greenbook) (RR HAZ-2) to ensure the structural stability required to withstand daily use for the duration of Project activities, including the ability to withstand seismic hazards. In addition, MM HAZ-2 requires that the conveyor belt be designed for structural stability and that a minimum vertical clearance be provided on Big Tujunga Canyon Road to maintain emergency access and that the system be enclosed for the portion of the system that crosses Big Tujunga Canyon Road, to avoid falling sediment and eliminate accidental spillage. Compliance with MM HAZ-2 would reduce impacts related to traffic hazards and emergency access to levels less than significant after mitigation.

f) Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than Significant Impact. Implementation of the Project would not create a demand for alternative transportation systems and would not affect public transit services. No demand for pedestrian facilities or trails would be created by the Project since there would be no change to land uses in the Project area. The increase in truck traffic on Big Tujunga Canyon Road would have less than significant impacts on alternative transportation systems under both the Low Emission Trucking Option and the Conveyor Belt System Option and no mitigation is required.

4.16.3 MITIGATION MEASURES

MM TRA-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall require the Contractor to prepare a Traffic Control Plan, which shall be prepared and implemented in compliance with the *California Manual for Uniform Traffic Control Devices* (MUTCD) that addresses potential traffic hazards and impacts to traffic congestion related to Project implementation. The Plan shall include, but not be limited to, the following requirements: (1) a flag person(s) shall be stationed at the intersection of the Project access road and Big Tujunga Canyon Road during all trucking operations under the Low Emissions Truck Option; (2) truck traffic shall be managed such that no queuing shall occur on Big Tujunga Canyon Road or along the ramps of Interstate (I) 210, including the Sunland Boulevard interchange, during transport of gravel from the Project to Sunland; (3) the construction crew shall be required to attend traffic safety meetings to ensure that the Plan is fully implemented; (4) periodic monitoring of trucking operations along affected I-210 ramps shall occur to confirm that no queuing occurs: (5) requirements shall be set for the design and use of traffic signs, driveway access, barricades, and other measures to maintain public convenience and safety for motorists, cyclists, pedestrians, and construction workers; and (6) the coordination protocol shall be confirmed with law enforcement and other emergency agencies, as necessary.

4.17 UTILITIES AND SERVICE SYSTEMS	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

4.17.1 EXISTING CONDITIONS

There are power lines in the Project area that provide electricity to the Dam control house. Storm drainage is provided by natural canyons, drainage lines, and inlets that have been constructed to direct storm water from adjacent canyons into Big Tujunga Creek. There are two water tanks, one on each side of the Dam, which are used for on-site operations and to obtain water from perched groundwater beneath the Project site. Wastewater and solid waste generation is confined to the Dam control house and the Dam Operator's residence, which are served by a holding tank and a septic tank.

4.17.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

e) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. The Project would not generate wastewater that would require conveyance or treatment in on-site septic systems or at wastewater plants in the region. Portable toilets would be provided for employees at the site, and these portable toilets would be regularly cleaned and their contents disposed of off site by an outside company. Wastewater from these portable toilets would not exceed the treatment requirements of the RWQCB. Also, an insignificant amount of wastewater would be generated by these portable toilets, and the Project would not need new or expanded treatment facilities. Capacity at existing wastewater treatment plants would not be exceeded. Impacts related to wastewater facilities would be less than significant under both the Low Emission Trucking Option and the Conveyor Belt System Option.

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. The proposed Project would require water for the control of fugitive dust on access roads and at Maple Canyon SPS. Even with dewatering prior to removal, sediments at BTR are expected to be wet and thus would not generate fugitive dust during removal. However, rock crushing activities would require water. A water truck would be present at BTR, dirt roads, and Maple Canyon SPS to spray areas generating dust. Water for these trucks would be pumped from BTR or the diversion pipe that would convey water from upstream areas to just downstream of the Dam. The Project would need no new water supplies, water lines, or water system facilities. Impacts would be less than significant under both the Low Emission Trucking Option and the Conveyor Belt System Option.

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. Sediments would be transferred from BTR to Maple Canyon SPS and there would be no increase in impervious surfaces, except to pave approximately 2 miles of existing dirt access roads under the Low Emissions Truck Option. The water diversion pipe from upstream areas of BTR to the plunge pool would be a temporary facility that would be removed at the start of the storm season each year. Paving the access roads would lead to a minimal increase in runoff volume and rates that would be accommodated by adjacent soils and Big Tujunga Creek. Drainage lines have been installed at Maple Canyon SPS, which would continue to convey runoff from the canyon to the Big Tujunga Creek and be expanded to accommodate the Project's sediment (see PDF HYD-2). Under the Conveyor Belt System Option, equipment footings would be limited in size and would lead to a minimal increase in

runoff volume and rates that would be accommodated by adjacent soils. The proposed Project would not create large impervious surfaces that would lead to runoff requiring new storm drainage facilities in the Project area. The construction of new storm water drainage facilities or expansion of existing facilities would not be needed, and there would be less than significant impacts under both the Low Emission Trucking Option and the Conveyor Belt System Option.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. Debris from vegetation clearing activities at Maple Canyon SPS would be mulched on site. Sediments removed from BTR would be deposited in Maple Canyon SPS. Large rocks from BTR would be crushed at the staging area in BTR and stockpiled at the lower staging area, prior to transport to a gravel company or other approved sites permitted to accept/process such materials. Thus, the Project would not generate a stream of solid waste that would require landfill capacity. Also, no hazardous waste generation is expected from sediment removal activities. Hazardous materials would be handled in accordance with RR HAZ-1 and MM HAZ-1, as discussed in Section 4.8, Hazards and Hazardous Materials.

Solid wastes generated by employees and other on-site activities (i.e., equipment cleaning and repair) would be placed in a dumpster for regular collection and disposal. This waste generation would not be significant enough to require any measurable landfill capacity. The Project would not generate solid wastes that are subject to federal, State, and local statutes and regulations. Impacts related to landfill capacity and solid waste regulations would be less than significant under both the Low Emission Trucking Option and the Conveyor Belt System Option.

4.17.3 MITIGATION MEASURES

There would be no significant impacts related to utilities and service systems; therefore, no mitigation measures are required.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Does the project:				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

4.18.1 MANDATORY FINDINGS OF SIGNIFICANCE ANALYSIS

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than Significant With Mitigation. As discussed above in Sections 4.1 through 4.17, the Project would lead to the disturbance of existing plant, aquatic, and animal habitats on and near BTR and Maple Canyon SPS, as well as potential impacts to unknown archaeological resources that may be present in the area. Mitigation measures have been developed to reduce potential environmental impacts on biological and cultural resources to less than significant levels. Implementation of the mitigation measures would ensure that the Project does not degrade the quality of the environment; substantially reduce the habitat of fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of Rare or Endangered plant or animal; or eliminate important examples of the major periods of California history or prehistory under either the Low Emission Trucking Option or the Conveyor Belt System Option.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact. There are no anticipated construction projects within an approximate four-mile radius of the Project site (i.e., the distance between the Project site and the nearest residential community in La Crescenta-Montrose), with the exception of the SCE transmission line project. SCE is anticipated to be constructing "Segment 11" of the Tehachapi Renewable Transmission (TRTP) project beginning in 2013 and occur over the course of approximately 1.5 years. Construction activities on Segment 11 include approximately 30 miles of reconstructed new access roads to the transmission line towers in the Forest and a total of 69 new transmission line structures within the Forest (16 constructed via helicopter). The nearest proposed TRTP tower along Segment 11 to the Project site is approximately 130 feet south of the southern boundary of Maple Canyon SPS, near Angeles Forest Highway (SR-2). Construction activities on this tower would require approximately two to three weeks, potentially spread out over several months, depending SCE's construction staging plan.

The TRTP project would use Maple Canyon SPS as a staging area for equipment while Segment 11 is under construction. Equipment staging for TRTP could not occur during Project-related activities because Maple Canyon would be under development as sediment is continually deposited and spread throughout the non-storm season. As stated in Section 3.0, Project Description, the proposed Project is anticipated to begin April 15, 2015. Therefore, Segment 11 of TRTP and the proposed Project would not be constructed at the same time and the impacts associated with TRTP construction would not affect or cumulatively contribute to the impacts associated with the proposed Project. All Project-related environmental factors would be mitigated to a level less than significant and there would be no cumulatively considerable impacts.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant With Mitigation. The proposed Project would have environmental effects that could cause substantial adverse effects on human beings, either directly or indirectly, as they relate to Aesthetics, Air Quality, Hazards and Hazardous Materials, and Recreation as previously discussed within the text under these environmental issues. Mitigation measures have been provided to reduce these impacts to less than significant levels. Thus, the potentially significant adverse effects on human beings would be less than significant after mitigation. Implementation of the Project would also have beneficial impacts on downstream properties by reducing the potential for flooding and therefore loss of life and/or property due to Dam overtopping and mudflow hazards.

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SECTION 5.0 DOCUMENT PREPARERS AND CONTRIBUTORS

Los Angeles County Flood Control District

Associate Civil Engineer ..... Eric Lim, P.E.
Associate Civil Engineer ..... Ryan Butler, P.E.
Principal Civil Engineering Assistant.....Kavita Mahulikar, P.E.

BonTerra Consulting (Environmental Document Preparation)

Principal Manager .....Joan Patronite Kelly, AICP
Senior Project Manager .....Kristin L. Keeling
Air Quality and Greenhouse Gas Specialist.....James Kurtz
Cultural Resources Manager ..... Patrick O. Maxon
Biological Resources Manager .....Amber Heredia
Senior Aquatic Biologist .....Carl Demetropoulos, Ph.D.
Senior Biologist ..... Dave Hughes
Senior Biologist ..... Sam Stewart
Biologist.....Jennifer Pareti
GIS/Graphics.....Chris Starbird
Technical Writer/Editor.....Julia Black
Word Processing.....Nicholas Neece

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APPENDIX A

AIR QUALITY MODELING DATA

APPENDIX B

BIOLOGICAL STUDIES

APPENDIX B-1

BIOLOGICAL CONTRAINTS LETTER REPORT

APPENDIX B-2

JURISDICTIONAL DELINEATION REPORT

APPENDIX B-3

ARROYO TOAD SURVEY LETTER REPORT

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SIERRA MADRE YELLOW-LEGGED FROG SURVEY LETTER REPORT

APPENDIX B-5

SPECIAL STATUS FISH SPECIES SURVEY LETTER REPORT

APPENDIX B-6

WESTERN POND TURTLE SURVEY LETTER REPORT

APPENDIX B-7

2011 FOCUSED PLANT SURVEY LETTER REPORT

APPENDIX B-8

LEAST BELL'S VIREO AND
SOUTHWESTERN WILLOW FLYCATCHER LETTER REPORT

APPENDIX B-9

FLOW DATA ANALYSIS MEMO

APPENDIX C

PHASE 1 CULTURAL RESOURCES ASSESSMENT