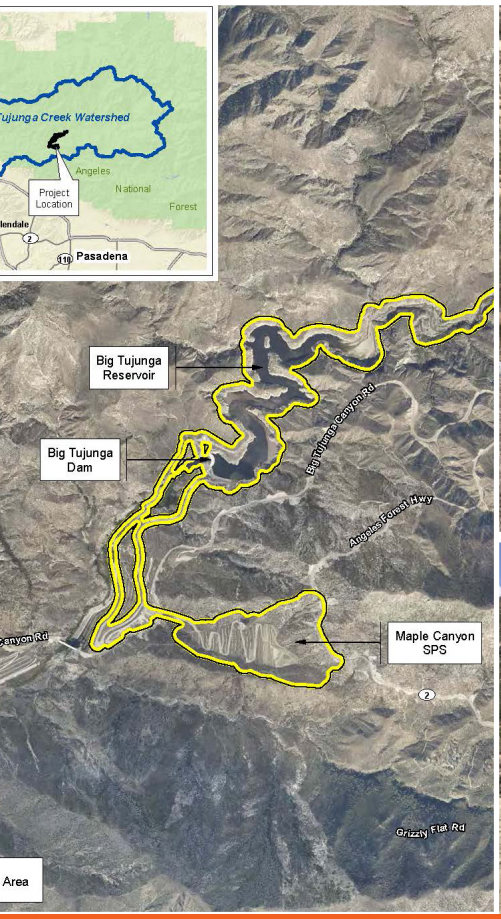
FINAL REVISED AND RECIRCULATED INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Big Tujunga Reservoir Restoration Project



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Prepared for:
Los Angeles County Flood Control District
900 South Fremont Avenue
Alhambra, California 91803-1331

PSOMAS

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SECTION 1.0 EXECUTIVE SUMMARY

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 Revised and Recirculated Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared for the currently proposed Los Angeles County Flood Control District (LACFCD) Big Tujunga Reservoir Restoration Project (proposed Project or Project). This Revised and Recirculated IS/MND includes a description of the proposed Project; the location of the Project site; an evaluation of the potential environmental impacts of Project implementation; and recommended mitigation measures to lessen or avoid impacts on the environment.

In 2013, an IS/MND (2013 Draft IS/MND) was prepared for the Project[1], and was circulated for public review from May 13, 2013, to June 26, 2013, for a 45-day public review period. An informational public meeting was held on Monday, May 20, 2013 at 6:00 p.m. at the Elk's Lodge Sunland-Tujunga Lodge Room located at 10137 Commerce Avenue, in Tujunga, to discuss the Project and the 2013 Draft IS/MND. The IS/MND and associated technical reports were made available for public viewing and hard copies of the 2013 Draft IS/MND were available for public viewing during regular business hours at the Los Angeles County Public Works office in Alhambra; the La Crescenta Library; the Sunland Tujunga Library; and the San Fernando Library.

To account for the approximate six years that have passed since the public review period of the 2013 Draft IS/MND, this Revised and Recirculated IS/MND has been prepared to clarify minor revisions to the Project Description and to update the analysis of environmental impacts and associated mitigation measures accordingly.

Pursuant to Section 15367 of the State CEQA Guidelines, the LACFCD, now administered by the Los Angeles County Public Works (Public Works), 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 to approve the proposed Project and its accompanying environmental documentation. In addition to addressing the potential environmental impacts that would result from the proposed Project, this Revised and Recirculated IS/MND serves as the primary environmental document for future activities associated with the Project, including discretionary approvals necessary for Project implementation by the lead or responsible agencies under CEQA.

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 less than significant levels. The reader is referred to the full text of this Revised and Recirculated IS/MND and the technical appendices for a complete description and analysis of the potential environmental effects of the proposed Project.

1.1 PROJECT DESCRIPTION SUMMARY

This Revised and Recirculated IS/MND includes an overview of the changes that have occurred to the Project Description since the 2013 Draft IS/MND was circulated for public review. These changes are summarized in Sections 2.1 and 2.2 of this IS/MND, and are included below in Table 2-2, Summary of Changes to the 2013 Draft IS/MND. This Section 1.1, Project Description Summary, includes an overview of the current Project Description, which is the basis for the analysis in the Revised and Recirculated IS/MND.

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

[1] The previous IS/MND was titled the Big Tujunga Reservoir Sediment Removal Project.

is located approximately 1.9 miles (when traveling via existing access roads) from BTR to the upper reach of Maple Canyon SPS. The proposed Project involves the use of trucks and equipment to remove sediment and restore capacity to the BTR, and to allow it to adequately perform its main functions of flood control and water conservation. The following minor activities would occur in conjunction with the proposed sediment removal: (1) hydroblasting to flush a stilling well on the dam crest; (2) repairing the hydraulic sluicegate; (3) paving the unpaved sections of the north access road and repairing the culvert crossing; (4) incorporating slope protection measures adjacent to the spillway; (5) rehabilitating the northern reservoir access ramp to safely access the Reservoir bottom; (6) installing a boat dock at the dam face; and (7) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering.

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 2.1 mcy of sediment, which would be removed and placed within Maple Canyon SPS. However, future storms have a potential to deposit additional sediment into BTR prior to Project implementation or during the storm seasons within the anticipated sediment removal period. Therefore, the Project has an upper limit of 4.4 mcy of sediment removal from BTR, which represents the maximum amount of sediments and equates to the remaining capacity for sediment placement within Maple Canyon SPS. Although there is potential for a larger amount of sediment to enter the reservoir, the final amount of sediment to be removed from BTR would equal the current accumulated amount of 2.1 mcy plus any additional sediment accumulated between now and Project completion. The removal of 2.1 mcy would bring the reservoir back to maximum capacity. However, no more than 4.4 mcy of sediment would be removed from BTR.

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., non-storm season); work could continue past October 14 until the first major forecasted storm. During dewatering, water held in BTR 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, flows into BTR would bypass the work area through a High-Density Polyethylene (HDPE) pipeline that conveys inflow from the reservoir upstream of the activities, through the dam's riser/penstock/valve, and would outlet around the transition point between the plunge pool and the beginning of Big Tujunga Creek. The bypass pipeline would prevent water from entering the work site and sediment from BTR from flowing downstream, thereby resulting 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. Double-bottom belly dump trucks or off-highway trucks would be mobilized to the Project site at the beginning of the non-storm season and would stay on-site until sediment removal activities are concluded for that season, unless repairs or emergencies arise that require the removal of the dump trucks from the Project site. The LACFCD has committed to designing and implementing the Project in an environmentally-sensitive manner by minimizing air quality impacts and any other potentially significant impacts. The LACFCD's Contractor would pave approximately 2.15 miles of the approximately 5-mile truck haul route that is currently unpaved in order to comply with South Coast Air Quality Management District (SCAQMD) thresholds for particulate matter (PM10 and PM2.5). Additionally, the Project would use construction equipment that meet Tier 4 Final or better emission standards.

Specific-sized rocks/aggregate would be separated from the excavated sediment during annual sediment removal activities and would be stockpiled onsite for reuse within the U.S. Forest Service

(USFS) boundaries. Aggregate crushing within BTR would occur during the non-storm season (i.e., April 16 through October 14) throughout the entirety of Project implementation. However, only 28,000 cy of aggregate would be stockpiled at the staging area over the course of the annual sediment removal activities. After the aggregate material stockpile reaches a volume of 28,000 cy (stored within 12 stockpiles of varying sizes), all sediment (including aggregate material) removed from BTR would be deposited within Maple Canyon SPS. The stockpiles would be available for long-term use by Public Works' Stormwater Maintenance Division (SWMD) and Road Maintenance Division (RMD) for routine maintenance activities that are unrelated to the BTR Project. Once the rock and aggregate is used/depleted, which is assumed to require several years, these stockpiles would not be replenished.

All sediment removal activities would occur during the non-storm season, between approximately April 16 and October 14 (or until the first forecasted storm). Prior to the first forecasted storm, all sediment removal and bypass equipment would be removed from BTR, and flood control operations would resume for the remainder of the storm season. 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 and water conservation.

BTR would continue to be operated according to standard operating guidelines during the rainy season from approximately October 15 through April 15. LACFCD's Contractor would demobilize from the Reservoir before the first major storm (approximately October 15) of each year. The Contractor would be required to remove all equipment and remove or secure structures within the Reservoir, including temporary water diversion structures and Best Management Practices (BMPs) and remobilize at the end of each storm season (approximately April 15). Once the sediment removal is complete and all equipment and structures are removed from the Reservoir and Maple Canyon SPS, there would be no long-term changes to the regular inspection, maintenance, or operations at the Reservoir.

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. Once Maple Canyon SPS is filled to capacity, the facility would be closed in accordance with the requirements of a revegetation plan to be finalized to the satisfaction of the USFS, which would include a 10-year revegetation monitoring program and efforts to improve the visual aspects of the site upon closure of Maple Canyon SPS, including removal of irrigation and water tanks. The potential closure-related impacts of the Maple Canyon SPS are included as part of this Project. These closure activities will be set forth in USFS' *Draft Maple Canyon Sediment Placement Site Revegetation Plan,* which would be finalized to the satisfaction of the USFS (detailed in MM LUP-1 of Section 4.11, Land Use and Planning). The *Draft Maple Canyon Sediment Placement Site Revegetation Plan* is currently in review by the USFS. As such, the final revegetation plan is not available for public review at this time.

1.2 ORGANIZATION OF THE REVISED AND RECIRCULATED INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

This Revised and Recirculated IS/MND is organized into the following sections:

Section 1, Executive Summary: This section provides a summary of the Project description, Project impacts, regulatory requirements (RR), 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 and changes to the 2013 Draft IS/MND; an outline of the Revised and Recirculated 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 and includes graphics that depict the Project site and areas of work activities. It includes a discussion of construction-related inputs that are necessary to assess the Project-level and cumulative impacts, as analyzed in Section 4.0 of this Revised and Recirculated IS/MND.

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 (Sections 4.1 through 4.20), and Mandatory Findings of Significance/cumulative impacts (Section 4.21) 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 REGULATORY REQUIREMENTS, IMPACTS, AND MITIGATION MEASURES

This Revised and Recirculated IS/MND evaluates the potential environmental impacts of Project implementation taking into consideration the proposed revisions to the Project, as summarized in Table 2-2 of this IS/MND. It includes significance determinations from the environmental analyses; it identifies regulatory requirements (RRs) that must be implemented; and sets forth mitigation measures (MMs) that would lessen or avoid potentially significant impacts on the environment. RRs are based on local, State, and/or federal regulations or laws that are required independent of CEQA review, yet also serve to offset or prevent certain impacts. Because RRs are required to be complied with as part of a project's design or implementation, regardless of the CEQA process, they do not constitute MMs under CEQA.

The analysis in Section 4.0 of this IS/MND evaluates the environmental impacts associated with Project implementation. With the assumption of compliance with RRs, the Project would have no impact or less than significant impacts on Agriculture and Forest Resources, Energy, Greenhouse Gas Emissions, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, and Utilities and Service Systems.

MMs are required to reduce environmental impacts to less than significant levels for the following environmental impact areas: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards/Hazardous Materials, Hydrology/Water Quality, Land Use and Planning, Transportation, Tribal Cultural Resources, Wildfire, and Mandatory Findings of Significance (i.e. cumulative impacts). With incorporation of MMs, all environmental impacts associated with the Project would be less than significant.

The LACFCD will confirm that the following RRs will be included in the Construction Contractor's Specifications, as appropriate, and verified as part of the Mitigation Monitoring and Reporting Program (MMRP). These RRs shall be implemented to the satisfaction of the LACFCD and are listed below.

1.3.1 REGULATORY REQUIREMENTS

RR AQ-1 All construction activities shall be conducted in compliance with all applicable South Coast Air Quality Management District (SCAQMD) rules and permitting requirements, including but not limited to:

- SCAQMD Rule 402, Nuisance, which states that a Project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property". Rule 402 refers to air contaminants or other material being discharged into the air, but not generation of noise and vibration.
- SCAQMD Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance. Compliance with this rule will reduce short-term particulate pollutant emissions. Contractor compliance with Rule 403 requirements shall be mandated in the contractor's specifications. Some of the potential rules may include, but not be limited to:
    - Preparing and implementing a Fugitive Dust Control Plan.
    - Signage would be installed around the Project site that provides a contact person and phone number to call with dust-related complaints and the phone number of the SCAQMD compliance office. The signage would remain and be maintained for the length of the Project.
    - Watering exposed surfaces at least three times per day, or more during windy conditions. High wind conditions are defined under Rule 403 as instantaneous wind speeds that exceed 25 miles per hour.
    - Non-toxic soil stabilizers/dust suppressants that create a crust on the surface to be resistant to wind erosion would be selected and applied consistent with Rule 403.
    - Traffic speeds on unpaved roads would be restricted to no more than 15 miles per hour.
    - One or more devices would be installed at ingress/egress points to remove dirt from vehicle tires and undercarriage prior to leaving the site.
    - All materials to be loaded for export would be pre-watered.
    - All haul trucks would either be covered (with on board tarp) or would maintain at least six inches of freeboard between the top of the soil and the edge of the truck bed.
    - Apply chemical stabilizers within five working days of grading completion.
    - For inactive disturbed surface areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust or establish a vegetative ground cover within 21 days after active operations have ceased.

RR BIO-1 The LACFCD will obtain all necessary permits for impacts to "waters of the United States" and "waters of the State" from applicable resource agencies, including the California Department of Fish and Wildlife (CDFW), the Los Angeles Regional Water

Quality Control Board (RWQCB), the United States Army Corps of Engineers (USACE), and the corresponding Section 7 Consultation with the U.S. Fish and Wildlife Service.

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).

RR GEO-1 Grading, excavation, and earthwork, including fills and embankments and the control runoff from graded sites, shall comply with the California Building Code (Appendix J "Grading" of Title 24, Part 2) , 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 and ensure the protection of utilities and adjacent property.

RR HAZ-1 Any Project-related hazardous materials and/or hazardous wastes must be used, stored, disposed, and transported in compliance with all applicable State and federal requirements, which may include but may not limited to those set forth by the U.S. Department of Transportation (CFR Title 49, Hazardous Materials Transportation Act); U.S. Environmental Protection Agency regulations; California Department of Toxic Substances Control (DTSC); California Department of Transportation (Caltrans); California Department of Public Health (CDPH); and California Occupational Safety and Health Administration (CalOSHA). Any unauthorized release of hazardous materials will require release reporting, initial abatement, and corrective actions that will be completed with oversight from the Los Angeles Regional Water Quality Control Board (RWQCB), DTSC, South Coast Air Quality Management District (SCAQMD), the Los Angeles County Fire Department, which serves as the designated local Certified Unified Program Agency (CUPA), and/or other regulatory agencies, as necessary.

RR HYD-1 All earthwork activities that would affect one or more acre of land are required to 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 as amended by 2010-0014-DWQ and 2012-0006-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 is required to 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.

RR TRA-1 The movement of large vehicles or loads, such as large equipment, on public roadways must be conducted in compliance with the Los Angeles County Code (Title 16, Highway), which requires a moving permit (Chapter 16.22, Moving Permits) and includes provisions regarding the size (i.e., height, width, weight) of vehicles/loads (in accordance with provisions of the California Vehicle Code); number of trips; seasonal/time limitations; and other conditions when necessary to assure against undue interference with traffic or road damage. The Los Angeles County Flood Control District (LACFCD) requires the implementation of temporary traffic control measures in accordance with the *Standard Specifications for Public Works Construction* (Greenbook), which contains standards for traffic and access (i.e., maintenance of access, traffic control, and notification of emergency personnel).

RR TRA-2 Oversized transport vehicles on State highways, if required, would need to obtain a transportation permit from the California Department of Transportation (Caltrans).

1.3.2 MITIGATION MEASURES

Prior to mitigation, Project implementation would result in potentially significant impacts to Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards/Hazardous Materials, Hydrology/Water Quality, Land Use and Planning, Transportation, Tribal Cultural Resources, and Mandatory Findings of Significance. However, MMs are required to be implemented to avoid or reduce these impacts to levels 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 1-1 along with the assigned responsibility for implementation and compliance monitoring.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
Aesthetics				
MM AES-1	The LACFCD shall ensure that the aggregate stockpiles located furthest to the west with the highest visibility from Big Tujunga Canyon Road be removed first. During the final year of sediment removal activities, whether or not activities last for the full 5 years, the LACFCD shall ensure that all remaining stockpiles do not exceed a maximum height of 20 feet. If required in order to meet the 20-foot height restriction, the LACFCD shall remove the necessary amount of aggregate from the stockpiles and deposit the aggregate within the Maple Canyon SPS before the conclusion of the Project.	Ongoing coordination with SWMD and RMD throughout 5-year sediment removal; Possible relocation of aggregate in final Year	LACFCD through Public Works' SWMD and RMD.	Aggregate stockpiling has the potential to cause significant impacts to scenic resources and degradation of visual character of surrounding areas. Impacts would be reduced to less than significant with MM AES-1.
Air Quality				
MM AQ-1	The LACFCD shall include in the Contractor's Requirements and Specifications the following requirement: If using double-bottom belly dump trucks (on-road trucks) with the equivalent capacity of 18 cubic yards (cy), during all sediment removal activities, equipment shall be scheduled to be active no more than 8 hours per workday (assuming 400 round-trip trucks trips per workday [i.e., an average of 50 truck trips 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 worksite equipment (e.g., trucks, loaders, bulldozers) activity shall be limited to a maximum of 400 round-trip truck trips within a given day. The Construction Contractor shall document the number of round-trip truck trips for each day of sediment removal and maintain an accurate log of daily truck trips and mileage per truck and have the daily log available for review and confirmation by the LACFCD upon request. If using off-road trucks with the equivalent capacity of 33 cy, during all sediment removal activities, equipment shall be scheduled to be active no more than 8 hours per workday (assuming 220 round-trip trucks trips per workday [i.e., an average of 28 truck trips 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 worksite equipment (e.g. trucks, loaders, bulldozers) activity shall be limited to a maximum of 220 round-trip truck trips within a given day. The Construction Contractor shall document the number of round-trip truck trips for each day of sediment removal and maintain an accurate log of daily truck trips and mileage per truck and have	Daily throughout all trucking activity within the reservoir	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Sediment removal activities have the potential to exceed the SCAQMD threshold for nitrogen oxides (NOx) and particulate matter. Impacts would be reduced to less than significant with MM AQ-1.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	the daily log available for review and confirmation by the LACFCD upon request.			
MM AQ-2	The LACFCD shall include in the Contractor's Requirements and Specifications the following requirement: All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 4 Final or better off-road emissions standards.	Daily throughout all trucking activity within the reservoir	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance.	Sediment removal activities have the potential to exceed the SCAQMD threshold for NOx. Impacts would be reduced to less than significant with MM AQ-2.
MM AQ-3	Prior to the commencement of any Project-related activities that require heavy trucks or equipment to travel over the access roads/haul routes, the LACFCD shall ensure that all haul roads are paved, with the exception of the 0.4-mile portion of the route within the Big Tujunga Reservoir.	Daily throughout all trucking activity within the reservoir	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Sediment removal activities have the potential to exceed the SCAQMD threshold for particulate matter. Impacts would be reduced to less than significant with MM AQ-3.
MM AQ-4	The unpaved approximate 0.4-mile portion of the access road that traverses through the reservoir shall be consistently maintained in a damp state to ensure dust reductions. The Construction Contractor shall prepare and implement an Exposed Soils Watering Plan to the satisfaction of the LACFCD, 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. In addition to the requirements of South Coast Air Quality Management District (SCAQMD) Rule 403, water trucks or other watering mechanisms shall 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	Sediment removal activities have the potential to exceed the SCAQMD threshold for particulate matter. Impacts would be reduced to less than significant with MM AQ-4.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
Biological Resources			
MM BIO-1 A pre-construction survey for Greata's aster shall be conducted by the LACFCD in the spring/summer prior to construction during its peak blooming period. Locations within 100 feet of Project areas shall be recorded using GPS and clearly marked using lathe and flagging. Any Greata's aster within the sediment removal boundary shall also be marked with pin flags next to each individual stem to facilitate locating individuals for potential seed collection (see below). If Greata's aster is observed within the sediment removal boundary, the impact boundary shall be adjusted to avoid the location of Greata's aster. Prior to the initiation of project activities each year (including road paving), any Greata's aster locations within 100 feet of Project activities shall be clearly marked with orange snow fencing, stakes and rope, or other suitable fencing. Signs shall be posted to indicate each location as an "Environmentally Sensitive Area" and shall state that no work activities shall occur within the fencing. Worker Environmental Awareness Program (WEAP) training shall educate workers on the importance of Environmentally Sensitive Areas. Once Project activities are initiated, the Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired. If any location(s) of Greata's aster cannot be avoided, a Greata's Aster Relocation Plan (GARP) shall be prepared for review and approval by LACFCD. The GARP shall be prepared following the pre-construction survey to determine the number of individuals that will need to be addressed by the plan. The GARP shall describe the methods for seed collection and salvage/relocation of individual plants. The GARP shall identify the relocation site, which shall be located in an area of dedicated open space and shall have similar soils, aspect, slope, and hydrology as the site where the individuals are collected. The success criteria for the GARP shall require the replacement of impacted individuals at a minimum 1:1 ratio through a combination of: (1) the survival of salvaged/transplanted individuals; (2) the survival of plants from seed application; and/or the survival of plants from container planting. The GARP shall include a five-	Prior to initiation of Project activities	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Project activities have the potential to impact Greata's aster. Impacts would be reduced to less than significant with MM BIO-1.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	year maintenance and monitoring program and a description of remedial measures that shall be implemented if success criteria are not achieved at the end of the five-year monitoring period. The GARP shall be approved by LACFCD prior to the initiation of seed collection and salvage activities. Seed collection and salvage activities shall be completed prior to allowing Project activities to impact any Greata's aster location(s). The LACFCD shall be responsible for implementing the GARP and ensuring that the mitigation program achieves the required success criteria. As described above, individual plants shall be marked with pin flags during the pre-construction survey to facilitate locating them after flowering. Following the pre-construction survey, the Greata's aster plants shall be regularly monitored by a qualified Biologist (one familiar with the biology of Greata's aster) to assess the plants' progress from flowering to seed formation. Following approval of the GARP, the seed shall be collected by a qualified Biologist (one experienced in the collection of seed of special status plants and holding the necessary approvals). Seeds shall be collected from ripened seed heads for later propagation (into container plants) or hand seeding by personnel experienced in the collection of native seed and native plant propagation. A total of 25 percent of the collected seed shall be archived in the seed bank at Rancho Santa Ana Botanic Garden (RSABG). Following seed collection, the individuals shall be salvaged by a qualified Biologist as described in the approved GARP.			
MM BIO-2	A pre-construction survey for Plummer's mariposa-lily and fragrant pitcher sage shall be conducted by the LACFCD in the spring prior to construction during the peak blooming period of each species. Locations within 100 feet of Project areas shall be recorded using GPS and clearly marked using lathe and flagging. Prior to the initiation of project activities each year (including road paving), all special status plant locations within 100 feet of Project activities shall be clearly marked with orange snow fencing, stakes and rope, or other suitable fencing. Signs shall be posted to indicate each location as an "Environmentally Sensitive Area" and shall state that no work activities shall occur within the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. Once Project activities are initiated, the Biological Monitor shall check the fencing/signage weekly to	Prior to initiation of Project activities	The LACFCD shall ensure the measure is included in contractor's specifications and LACFCD shall monitor compliance	Project activities have a potential to have inadvertent impacts on Plummer's mariposa-lily and fragrant pitcher sage. Impacts would be reduced to less than significant with MM BIO-2

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired.			
MM BIO-3	If CDFW determines that listing of the Crotch bumble bee is not warranted prior to implementation of the Project, or during implementation of the Project, this measure shall not be required. If CDFW makes a determination, or if CDFW determines that listing of the Crotch bumble bee is warranted, the following measure shall be required. A pre-construction focused survey for Crotch's bumble bee shall be conducted during the Crotch's bumble bee active period (March to July) prior to the initiation of vegetation removal activities and prior to sediment placement activities each season. Three visual surveys will be conducted by a qualified Biologist (i.e., one with experience in the identification of bee species). Surveys shall be conducted at least two hours after sunrise and three hours before sunset during suitable weather conditions. Sunny days with temperatures greater than 60 degrees Fahrenheit and wind speeds less than eight mph are optimal, but partially cloudy days or overcast conditions are permissible if a person's shadow is visible. Surveys should not be conducted during wet, foggy, or rainy conditions. Meandering transects shall be walked slowly within the Maple Canyon SPS impact area (disturbance area plus 50 feet) to obtain a 100% survey cover. Transect spacing will depend on the habitat. The Biologist will search for Crotch's bumble bee activity and the presence of ground nests. Cavities such as mammal burrows shall be inspected with binoculars for evidence of bumble bee use. If multiple exiting/entering bumble bees are observed at a cavity, further observation shall occur until nesting is confirmed (e.g. multiple individuals entering the cavity).If a ground nest is observed, it will be protected in place from vegetation removal and sediment placement activities until it is no longer active as determined by a Biologist. A Letter Report shall be prepared to document the results of the pre-construction surveys and shall be provided to the LACFCD and CDFW within 30 days of completion of the survey.	The active period prior to the initiation of vegetation removal activities and prior to sediment placement activities each season.	The LACFCD shall ensure the measure is included in contractor's specifications and LACFCD shall monitor compliance	Project implementation has the potential to impact the Crotch bumble bee nests during sediment placement in Maple Canyon. Impacts would be reduced to less than significant with MM BIO-3.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
MM BIO-4	The USACE, in collaboration with LACFCD, shall conduct a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act in connection with the issuance of the Clean Water Act Section 404 Permit for the Project. The LACFCD/USACE shall obtain written concurrence from the USFWS that the avoidance and minimization measures for Santa Ana sucker listed below are considered suitable by the USFWS. A. A Special Status Fish Relocation Plan (SSFRP) shall be prepared by the LACFCD to describe the methodology to move Santa Ana sucker, arroyo chub, and Santa Ana speckled dace adults/juveniles out of the plunge pool and work area at the mouth of the stream where BMPs will be installed for water quality and/or to allow for the continued fish passage while water is diverted around an in-stream work area. The SSFRP shall describe the potential relocation site. The relocation site shall mimic site conditions as closely as possible; adequate food resources for the fish and shelter from predators shall be present at the relocation site. The SSFRP shall describe any follow-up monitoring that would be necessary and additional contingency measures for management of the relocation site. The LACFCD, USFWS, and CDFW shall approve the SSFRP prior to relocating any special status fish species. The SSFRP shall be prepared, approved, and implemented prior to dewatering (beyond normal dam operations) and the initiation of sediment removal. As the hydrology of the creek (i.e., suitable relocation habitat) varies over time depending on annual rainfall, the SSFRP shall be prepared within six months prior to initiation of project activities in the plunge pool and updated annually during the Project. B. A one-visit pre-construction survey for Santa Ana sucker, arroyo chub, and Santa Ana speckled dace shall be conducted by a qualified Biologist (one holding a 10[a] permit for the Santa Ana sucker) immediately prior to installation of water quality BMPs at the downstream end of the plunge pool. If any Santa Ana suckers or other special status fish species are observed, the Biologist shall relocate all individuals to areas of suitable habitat per the SSFRP. All non-native	Prior to initiation of dewatering or sediment removal activities	The LACFCD shall ensure the measure is included in contractor's specifications and LACFCD shall monitor compliance	Project implementation has the potential to impact the Santa Ana sucker related to creek flows and sedimentation during dewatering. Impacts would be reduced to less than significant with MM BIO-4.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
animal species encountered during the pre-construction survey shall be permanently removed from the plunge pool and creek. C. 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 as described in the SSFRP. A Letter Report shall be prepared to document the results of the pre-construction surveys, and monitoring and shall be provided to the LACFCD, USFWS and CDFW within 30 days of completion of the survey. D. Regardless of whether special status fish species are observed during pre-construction surveys, the combination of water quality BMPs and/or blocking nets shall be used to exclude special status fish species from entering the work area from downstream. The design of the exclusion and method of installation shall be included in the SSFRP and approved by the LACFCD, USFWS, and CDFW. Blocking nets and water quality BMPs shall be installed under the supervision of a Biological Monitor in order to ensure that no special status fish species are impacted during installation of the exclusion measures. E. No Project activities shall take place within the Santa Ana sucker Critical Habitat area downstream of water quality measures installed at the downstream end of the plunge pool. Regardless of the results of pre-construction surveys, the downstream limits of Project activities 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 downstream is an "Environmentally Sensitive Area" and that no work activities shall occur downstream of the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor immediately if the fencing/signage needs to be repaired.			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
F. Prior to dewatering of the reservoir (beyond normal dam operations) and/or any work in the plunge pool, LACFCD's Contractor shall install water quality filtration BMPs to satisfy permitting requirements from the LACFCD, USACE, RWQCB, and/or CDFW. Filtration BMPs—including but not limited to 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. 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 preventing or limiting the flow of disturbed sediment and particulate matter downstream During Project activities. The LACFCD shall hire an Environmental Compliance Monitor (ECM) to inspect the BMPs daily throughout sediment removal. If BMPs are not functioning properly, the ECM shall notify LACFCD immediately and corrective action which corrects the deficiency shall be taken immediately. If effective corrective action is not taken within 48 hours, the ECM shall recommend that LACFCD's Construction Inspector suspend construction activities; the ECM shall report the conditions and necessary corrective actions to the LACFCD, USFWS, CDFW, and/or RWQCB; work shall remain suspended until the condition is corrected to the satisfaction of LACFCD and the appropriate resource agencies. G. In order to minimize impacts on the Santa Ana sucker and its Critical Habitat, dam releases for Project activities during the Santa Ana sucker breeding season March 1 to July 31) shall not exceed 180 cubic feet per second[2] (cfs), and dam operations shall 'ramp' flows (i.e., step-wise increases and decreases) to mimic natural stream hydrology. H. A screen with 0.125-inch (3.2-millimeter) mesh shall be used at the inflow of the pump for dewatering the reservoir to prevent non-native			

[2] The Big Tujunga Habitat Conservation Plan (HCP) covering long-term operation and maintenance of the dam is currently under development. In HCP meeting discussions and preliminary review of mitigation measures, the USFWS is considering non-storm operational releases of up to 250 cfs. However, to be consistent with the previous project description and mitigation measures for this Project, LACFCD has agreed that the maximum release would be 180 cfs during dewatering for the Project.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
animals from spreading from the reservoir to areas below the dam occupied by Santa Ana sucker. All non-native animal species encountered during dewatering of the reservoir shall be permanently removed from the reservoir. Post-project, placement of non-native species shall not be allowed in the reservoir, plunge pool, or Big Tujunga Creek/Wash. I. When the bypass line is in place, water temperature shall be maintained from the inflow to the outflow. The bypass line shall be insulated and/or methods shall be used to decrease the water temperature prior to it re-entering the stream (e.g., submerge, cover, or shade the bypass line; avoiding black or corrugated pipe if not shaded). J. A qualified Biological Monitor (one with experience with special status fish species) shall conduct daily monitoring along the creek during dewatering outside the storm season (April 16 to October 14) and stream bypass installation. The Biological Monitor shall also conduct weekly monitoring throughout sediment removal activities to ensure that BMPs are in place and no release of sediment is observed downstream of the plunge pool; and to ensure that Santa Ana sucker, arroyo chub, or Santa Ana speckled dace are not stranded as dewatering flows recede. The Biological Monitor shall visually monitor habitat from the dam to approximately 1.5 mile downstream of the dam. If the Biological Monitor notes a change in the condition of downstream habitat that was likely caused by dewatering flows and/or BMPs not functioning effectively to protect water quality[3], the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective actions to the LACFCD, USFWS, and CDFW; work shall remain suspended until the condition is corrected to the satisfaction of			

[3] Flood control releases may occur in association with a storm that occurs during the non-storm season. Changes in the condition of stream habitat related to flood control releases would not be included in the notification/corrective action requirements unless they were associated with repairing BMP functioning for the maintenance project following the storm.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
the LACFCD, USFWS, and CDFW. If the Biological Monitor observes Santa Ana sucker or other special status species adults, juvenile, or larva stranded in drying pools outside the active channel during dewatering or at any time during construction, he/she shall be authorized to relocate the fish to suitable habitat in the adjacent active channel. The Biological Monitor shall prepare Weekly Monitoring Reports describing construction activities as they pertain to the Santa Ana sucker and Santa Ana sucker Critical Habitat areas; the reports shall be submitted to the LACFCD, USFWS, and CDFW. K. The SSFRP shall also include discussion of potential relocation necessary based on natural flow conditions from the dam to 1.5 mile downstream of the dam. If the Biological Monitor notices that water levels in active channel of the creek in this area decrease to shallow conditions or that isolated pools develop as a result of natural rainfall conditions, the Biological Monitor shall notify the LACFCD, USFWS, and CDFW of the conditions so the resource agencies (i.e., USFWS or CDFW) may consider relocating special status fish to suitable habitat or temporarily into captivity 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. No relocation shall occur until the USFWS and CDFW have confirmed that relocation shall occur.			
MM BIO-5 The LACFCD, in consultation with USACE, shall conduct a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act. The LACFCD/USACE shall obtain written concurrence from the USFWS that the avoidance and minimization measures for arroyo toad listed below are considered suitable. A. An Arroyo Toad Relocation Plan (ATRP) shall be prepared by the LACFCD to describe the methodology to move arroyo toad adults, eggs, and tadpoles out of the sediment removal impact area and to describe the potential relocation site. The ATRP shall be prepared following the pre-construction surveys (described below), once the number and age class of individuals to be relocated is known. The ATRP shall also describe conditions under which it would be possible	Prior to initiation of dewatering or sediment removal activities	The LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Project implementation has the potential to impact the arroyo toad in upstream areas of Big Tujunga Creek. Impacts would be reduced to less than significant with MM BIO-5.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
to protect eggs/tadpoles in place, the preferable approach if hydrology can be protected while allowing dewatering of the reservoir. If relocation is necessary, 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 that would be necessary and additional contingency measures for management of the relocation site until tadpoles have metamorphosed into adults. The ATRP shall also include specifications for arroyo toad exclusion fencing that will be needed at the upper end of the sediment removal area. The LACFCD and USFWS shall approve the ATRP prior to relocating any arroyo toad adults/eggs/tadpoles and prior to dewatering the reservoir for the Project (beyond normal dam operations). The ATRP shall be prepared, approved, and implemented prior to dewatering and the initiation of sediment removal.			
B. Three pre-construction surveys for arroyo toad adults, eggs, and tadpoles shall be conducted by a qualified Biologist (one with experience in identifying arroyo toads in all life stages) within 30 days prior to dewatering of the reservoir each year Project activities are scheduled to be conducted. The surveys shall include both a diurnal and nocturnal component and shall be conducted up to one kilometer upstream of the project limits of disturbance by a qualified Biologist. If arroyo toad adults, eggs, or tadpoles are observed within the sediment removal impact area, dewatering (beyond normal dam operations) shall begin after arroyo toads are relocated out of the limits of disturbance according to the ATRP (described above). If no arroyo toads are observed during the pre-construction surveys, dewatering and sediment removal can proceed as planned. A Letter Report will be prepared to document the results of the pre-construction survey and submitted to the LACFCD and USFWS within 30 days of completion of the survey.			
C. No sediment removal activities shall take place within the arroyo toad Critical Habitat area. Regardless of the results of pre-construction surveys, the Critical Habitat boundary shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
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. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired. D. If arroyo toads are observed during pre-construction surveys, exclusionary fencing shall be installed at the upper sediment removal boundary to prevent arroyo toads upstream of the Project from entering the construction area. The design of the fencing plan shall be included in the ATRP and approved by the LACFCD and USFWS. The exclusionary fencing shall consist of silt fencing, buried at least 1-foot-deep and installed with no gaps; alternate fencing shall be approved by the LACFCD and 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 LACFCD and USFWS. Fencing shall be installed under the supervision of a Biological Monitor in order to ensure that no arroyo toad adults/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 arroyo toads observed in the sediment removal area shall be relocated by a qualified Biologist (one approved by the USFWS to handle arroyo toad/special status species) according to the approved ATRP. If any non-native aquatic species (e.g., non-native fish, bullfrogs, or crayfish) are captured during the survey, they shall be permanently removed from the habitat. E. A qualified Biological Monitor (one with experience in identifying arroyo toads in all life stages) shall conduct daily monitoring during the breeding season (March 1 to June 30) and stream bypass installation upstream of the reservoir. The Biological Monitor shall also conduct			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
weekly monitoring throughout sediment removal activities to ensure that species protective measures are in place and that no arroyo toad/eggs/tadpoles are within the sediment removal footprint. The Biological Monitor shall monitor habitat from the upper reservoir to approximately 1,000 feet upstream of the bypass line. If the Biological Monitor notes a change in the condition of habitat immediately upstream of sediment removal activities that may have been caused by the Project activities and/or that BMPs are not functioning effectively, the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective actions to the LACFCD and USFWS; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD and USFWS. If the Biological Monitor observes arroyo toad adults/eggs/tadpoles within the sediment removal area at any time during construction, he/she shall be authorized to relocate the arroyo toad to suitable habitat upstream of the sediment removal area per the ATRP. The Biological Monitor shall prepare Weekly Monitoring Reports describing construction activities as they pertain to the arroyo toad and arroyo toad Critical Habitat areas; the reports shall be submitted to the LACFCD and USFWS. The Biological Monitor shall also monitor any relocated eggs/tadpoles and shall notify the LACFCD and USFWS if any contingency measures are necessary at the relocation site. Relocated eggs/tadpoles shall be monitored until the young leave the stream/pools as juvenile toads. Weekly Monitoring Reports shall include a description of any relocated eggs/tadpoles.			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
MM BIO-6	The LACFCD, in consultation with USACE, shall conduct a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act and Consistency Determination by the CDFW. The LACFCD/USACE shall obtain written concurrence from the USFWS/CDFW that the avoidance and minimization measures for least Bell's vireo and southwestern willow flycatcher listed below are considered suitable by the resource agencies. A. To the extent possible, vegetation clearing of riparian habitat shall be conducted during the non-breeding season (September 16 to March 14) in order to minimize direct impacts on nests of this species. Vegetation clearing of riparian communities shall be monitored by a qualified Biologist (one with experience monitoring in riparian habitat). B. Prior to the start of sediment removal activities each year, a qualified Biologist[4] (one with experience and all necessary permits to survey for least Bell's vireo and southwestern willow flycatcher) shall survey all riparian habitat within 500 feet of the construction limits for the presence of least Bell's vireo and southwestern willow flycatcher nests/territories. Three surveys shall be conducted within two weeks prior to the initiation of Project activities each year. Any active nests/territories shall be mapped on an aerial photograph and marked on applicable construction plans. A Letter Report will be prepared and submitted to the LACFCD, USFWS, and CDFW to document the results of the pre-construction survey within 30 days of completion of the survey. C. A 500-foot protective buffer shall be established around a least Bell's vireo or southwestern willow flycatcher territory identified in the field. The protective buffer shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an adequate buffer from construction work. Signs shall be posted to indicate that the area is an "Environmentally Sensitive Area" and that no work activities shall occur	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	Project implementation has the potential to impact the least Bell's vireo and southwestern willow flycatcher within the reservoir and plunge pool. Impacts would be reduced to less than significant with MM BIO-6.

[4] The qualified Biologist will need to be permitted for the species that have potential to nest at the time of the pre-construction surveys and monitoring. Prior to May 15, the qualified Biologist will only need to have experience with least Bell's vireo. After May 15, the qualified biologist will need to have experience with least Bell's vireo and southwestern willow flycatcher.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
within the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired. D. If construction activities need to occur closer than 500 feet of an active least Bell's vireo or southwestern willow flycatcher territory, a Riparian Bird Construction Plan (RBCP) shall be prepared for review and approval by the LACFCD, USFWS, and CDFW. As the location of active nests can vary over time, the RBCP shall be prepared once an active territory has been observed and it has been determined that work within 500 feet of the nest cannot be delayed until after the completion of the nest. Any activity within 500 feet of an active least Bell's vireo or southwestern willow flycatcher territory shall be monitored by a qualified Biologist (one with experience and the necessary permits to survey for these species[5]). If construction activities would result in noise readings greater than 60 dBA at the edge of least Bell's vireo or southwestern willow flycatcher territory, construction shall not be allowed during the breeding season (March 15 to September 15) unless appropriate noise reduction measures (e.g., temporary noise barriers) are implemented as approved by the LACFCD, USFWS, and CDFW. Noise reduction measures shall be implemented, as-needed, to maintain a noise level of less than 60 dBA at the edge of occupied riparian habitat to ensure that the vireo and/or flycatcher is not indirectly affected by construction noise. Implementation of the noise reduction measures shall be monitored by a qualified Biologist to ensure that the vireo and/or flycatcher is not inadvertently affected by their installation.			

[5] The 10a permits needed to conduct monitoring should correspond to the species that is present. If a southwestern willow flycatcher nest is present, a permit for this species will be needed. If a least Bell's vireo is present, no 10a permit will be needed, but the qualified Biologist will need the necessary experience to survey for this species.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
The RBCP shall also outline a noise monitoring methodology to be used during the breeding season for construction within 500 feet of occupied habitat. The RBCP shall include noise monitoring stations that shall be monitored weekly between March 15 and September 15 to ensure that noise levels during construction activities remain less than 60 dBA. If noise monitoring determines that the noise level exceeds 60 dBA, the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required, and noise reduction measures shall be modified as recommended by a qualified Acoustical Technician to reduce noise levels below 60 dBA. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective action to the LACFCD, USFWS, and CDFW; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD, USFWS, and CDFW.			
E. Regardless of whether least Bell's vireo or southwestern willow flycatchers are detected during the pre-construction surveys, surveys shall be updated once per week in riparian areas within 500 feet of construction throughout the breeding season (or as long as construction is within 500 feet of riparian habitat). Surveys may be discontinued after June 30th of each year if no least Bell's vireo or southwestern willow flycatcher have been detected. If a least Bell's vireo or southwestern willow flycatcher territory is observed, monitoring surveys shall be continued until vireo/flycatcher leave for the wintering grounds (August/September). Weekly monitoring reports shall be prepared by the Biologist and submitted to the LACFCD, USFWS, and CDFW.			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
MM BIO-7	Prior to the initiation of dewatering/installation of the bypass line each year (March or April), the following measure shall be followed prior to work within or adjacent to the Reservoir, plunge pool, or stream. A. A Western Pond Turtle Relocation Plan (WPTRP) shall be prepared by the LACFCD to describe the methodology to move western pond turtle out of the work area and/or to allow for the continued turtle passage while water is diverted around an in-stream work area. The WPTRP shall describe the potential relocation site. The relocation site shall mimic site conditions as closely as possible; adequate food resources for the turtles and shelter from predators shall be present at the relocation site. The WPTRP shall describe any follow-up monitoring that would be necessary of the relocated turtles. The WPTRP shall also include specifications for western pond turtle exclusion fencing that shall be needed at the work area. The LACFCD and USFWS shall approve the WPTRP prior to relocating any western pond turtles and prior to dewatering the Reservoir or plunge pool (beyond normal dam operations). The WPTRP shall be prepared, approved, and implemented prior to dewatering and the initiation of maintenance work. As the hydrology of the creek (i.e., suitable relocation habitat) varies over time depending on annual rainfall, the WPTRP shall be prepared within six months prior to initiation of project activities in the plunge pool and updated annually during the Project. B. A pre-construction trapping effort shall be conducted by the LACFCD prior to dewatering of the Reservoir/plunge pool (beyond normal operations) for a maintenance project. The trapping effort shall follow the newest approved protocol for the species (currently USGS 2006) shall be conducted by a qualified Biologist (one permitted to conduct western pond turtle trapping). If western pond turtles are observed within the work area, dewatering (beyond normal dam operations) shall begin after western pond turtles are relocated out of the work area according to the WPTRP (described above). If no western pond turtles are observed during the pre-construction surveys, dewatering and maintenance work can proceed as planned. If any non-native aquatic species (e.g., non-native fish, bullfrogs, or crayfish) are captured during the survey, they shall be permanently removed from the habitat. A	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	Project implementation has the potential to impact the western pond turtle and two-striped garter snake. Impacts would be reduced to less than significant with MM BIO-7.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
Letter Report shall be prepared to document the results of the pre-construction survey and submitted to the LACFCD and USFWS within 30 days of completion of the survey. C. Regardless of the results of pre-construction surveys, the limits of work shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an adequate boundary for maintenance work. Signs shall be posted to indicate that the areas upstream and downstream are "Environmentally Sensitive Areas" and that no work activities shall occur upstream of the fencing. Worker Environmental Awareness Program (WEAP) training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout maintenance activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired. D. Regardless of the results of pre-construction surveys, exclusionary fencing shall be installed around the limits of the work area within the Reservoir or plunge pool to prevent western pond turtles from entering the construction area. The design of the fencing plan shall be included in the WPTRP and approved by LACFCD and USFWS. The exclusionary fencing shall consist of silt fencing, buried at least 18 inches-deep and installed with no gaps; alternate fencing shall be approved by the LACFCD and USFWS. The fencing shall extend across Big Tujunga Creek around the perimeter of the work area or perpendicular to the creek up to 80 feet in elevation from the creek, or as otherwise approved by the LACFCD and USFWS. Fencing shall be installed under the supervision of a Biological Monitor in order to ensure that no western pond turtles are impacted during installation of the fence. One pre-construction survey shall be conducted by a qualified Biologist after the exclusionary fencing is installed and prior to the commencement of maintenance activities to ensure that no turtles are within the fencing. Any western pond turtles observed in the work area shall be relocated by a qualified Biologist (one approved by the USFWS to handle western pond turtle) according to the approved WPTRP.			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
E. A qualified Biological Monitor (one with experience in identifying western pond turtle) shall conduct daily monitoring during dewatering outside the storm season (April 16 to October 14) and work adjacent to the stream during the turtle's active period (March to September). The Biological Monitor shall also conduct weekly monitoring throughout maintenance activities to ensure that species protective measures are in place and that no western pond turtles are within the footprint of the work area. The Biological Monitor shall monitor habitat within 500 feet of the work area. If the Biological Monitor notes a change in the condition of habitat in the vicinity of work activities that may have been caused by the maintenance activities and/or by BMPs not functioning effectively, the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that the LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective actions to the LACFCD and USFWS; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD and USFWS. If the Biological Monitor observes western pond turtle within the work area at any time during construction, he/she shall be authorized to relocate the western pond turtle to suitable habitat upstream/downstream of the work area per the WPTRP. The Biological Monitor shall prepare Weekly Monitoring Reports describing construction activities as they pertain to the western pond turtle; the reports shall be submitted to the LACFCD and USFWS. F. When the bypass line is in place, water temperature shall be maintained from the inflow to the outflow. The bypass line shall be insulated and/or methods shall be used to decrease the water temperature prior to it re-entering the stream (e.g., submerge, cover, or shade the bypass line; avoiding black or corrugated pipe if not shaded).			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures		Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
MM BIO-8	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 surveys for the two-striped garter snake shall be conducted by a qualified Biologist (one with experience and the necessary permits to handle this species). Concurrently with the western pond turtle trapping effort described in MM BIO-6, the Biologist shall also visually search for two-striped garter snakes in the Project impact area. If any 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 two-striped garter snakes, the LACFCD 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 two-striped garter snakes are stranded. If any 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 LACFCD and CDFW within 30 days of completion of the survey.	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	Project implementation has the potential to impact the two-striped garter snake. Impacts would be reduced to less than significant with MM BIO-8.
MM BIO-9	Prior to initiation of Project activities, the LACFCD shall obtain all necessary permits for impacts to USACE, CDFW and/or Regional Water Quality Control Board (RWQCB) jurisdictional areas. Potential mitigation options shall include one or both of the following: (1) payment to a resource agency-approved mitigation bank or regional riparian enhancement program (e.g., invasive vegetation or wildlife species removal); and/or (2) establishment of riparian habitat (on site or off site) at a ratio of no less than 1:1, determined through consultation with the above-listed resource agencies. If in-lieu mitigation fees are required, prior to the initiation of any construction-related activities, the LACFCD shall pay the in-lieu mitigation fee to a mitigation bank/enhancement program for the replacement of impacted jurisdictional resources. If a riparian habitat establishment program is required, the LACFCD shall (1) develop a habitat mitigation and monitoring plan (HMMP) in conformance with the USACE 2015 Guidelines; (2) submit the HMMP to the resource agencies for review; and (3) obtain resource agency approval of the HMMP, prior to the initiation of any	Prior to initiation of Project activities	LACFCD	The proposed Project has the potential to impact jurisdictional resources. Impacts would be reduced to less than significant with MM BIO-9.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
construction related activities. The HMMP shall be prepared by a qualified Restoration Ecologist and shall be implemented by a qualified Restoration Contractor (as defined below) under the supervision of the Restoration Ecologist. The LACFCD shall be responsible for implementing the HMMP and ensuring that the mitigation program achieves the approved performance criteria. The LACFCD shall implement the HMMP per its specified requirements, materials, methods, and performance criteria. The HMMP shall include the following items: • **Responsibilities and Qualifications.** The responsibilities and qualifications of the LACFCD, ecological specialists, and restoration (landscape) contracting personnel who will implement the plan shall be specified. At a minimum, the HMMP shall specify that the ecological specialists and contractors have performed successful installation and long-term monitoring and maintenance of southern California native habitat mitigation/restoration programs, implemented under USACE, CDFW, and RWQCB permit conditions. A successful program shall be defined as one that has been signed off on by the resource agencies. • **Performance Criteria.** Mitigation performance criteria to be specified in the HMMP shall conform to the resource agency permit conditions. The HMMP shall state that the use of the mitigation site by special status wildlife species (e.g., least Bell's vireo), though not a requirement for site success, would be regarded by the resource agencies as a significant factor in considering eligibility for program sign-off. • **Site Selection.** The mitigation site(s) shall be determined in coordination with the LACFCD and the resource agencies. The site(s) shall be in dedicated open space areas and shall be contiguous with other natural open space areas. The soils, hydrology/hydraulics, and other physical characteristics of the potential mitigation sites shall be analyzed to ensure that proper conditions exist for the establishment of riparian habitat. • **Seed Materials Procurement.** At least one year prior to mitigation implementation, the Project Applicant or its consultants/contractors shall initiate collection of the native seed materials specified in the			

TABLE 1-1
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Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
HMMP. All seed mixes shall be of local origin; i.e., collected within 20 miles, and within the same watershed, as the selected restoration/enhancement site(s), to ensure genetic integrity. No seed materials of unknown or non-local geographic origin shall be used. Seed collection shall be prioritized per habitat area, in the following order: (a) project impact areas (highest priority); (b) other on-site habitat areas; and (c) off-site habitat areas (lowest priority), assuming availability of seed species in multiple locations. • **Wildlife Surveys and Protection.** The HMMP shall specify any wildlife surveys (i.e., nesting bird surveys, focused/protocol surveys for special status species [e.g., least Bell's vireo]) and biological monitoring that is required to avoid adverse impacts to wildlife species during the performance of mitigation site preparation, installation, or maintenance tasks. The HMMP shall also describe potential restrictions on these tasks due to sensitive wildlife conditions on the mitigation site (e.g., suspension of these tasks during the nesting bird season, as defined in project permits). • **Site Preparation and Plant Materials Installation.** Mitigation site preparation shall include all of the following: (a) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (b) installation of protective fencing and/or signage (as needed); (c) initial trash and weed removal (outside the nesting bird season) and methods; (d) soil treatments, as needed (i.e., imprinting, de-compacting); (e) installation of erosion-control measures (i.e., fully natural/bio-degradable [not 'photo-degradable' plastic mesh] fiber roll); (f) application of salvaged native plant materials (i.e., coarse woody debris), as available and supervised by a biological monitor; (g) temporary irrigation installation; (h) a minimum one-year preliminary weed abatement program (prior to the installation of native plant and seed materials)—including specification of approved herbicides; (i) planting of container plant and cutting species; and (j) seed mix application. • **Schedule.** An implementation schedule shall be developed that includes planting and seeding to occur in the fall and winter (i.e.,			

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Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
between November 1 and January 31) and the frequency of long-term maintenance and monitoring activities (including the dates of annual quantitative surveys, as described below) for five years or until the mitigation program achieves the approved performance criteria. • **Maintenance Program.** The Maintenance Program shall include (a) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (b) maintenance of protective fencing and/or signage; (c) trash and weed removal—including specification of approved herbicides; (d) maintenance of erosion-control measures; (e) inspection/repairs of irrigation components; (f) replacement of dead container plant and cuttings (as needed); (g) application of remedial seed mixes (as needed); (h) herbivory control; and (i) removal of all non-vegetative materials (i.e., fencing, signage, irrigation components) upon project completion. The mitigation site shall be maintained for a period of five years to ensure successful riparian habitat establishment within the restored/enhanced sites; however, the Project Applicant may request to be released from maintenance requirements by the resource agencies prior to five years if the mitigation program has achieved all performance criteria. • **Monitoring Program.** The Monitoring Program shall include (a) qualitative monitoring (i.e., general habitat conditions, photo-documentation from established photo stations); (b) quantitative monitoring (in conformance with the USACE 2015 Guidelines); (c) annual monitoring reports, which shall be submitted to the LACFCD and the resource agencies for five years or until project completion; and (d) wildlife surveys and monitoring as described above. The annual monitoring reports shall include a detailed discussion of mitigation site performance (e.g., measured vegetation coverage and diversity) and compliance with required performance criteria, a discussion of wildlife species' use of the restored and/or enhanced habitat area(s), and a list of proposed remedial measures to address noncompliance with any performance criteria. The site shall be monitored for five years or until the LACFCD has been released from maintenance requirements by the resource agencies.			

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	• **Long-term preservation.** Long-term preservation of the mitigation site(s) shall be outlined in the HMMP to ensure that the mitigation sites are not impacted by future development.			
MM BIO-10	The following measures shall be followed prior to work within the Reservoir, plunge pool, or stream and in the developed areas of the dam. A. To the extent possible, vegetation clearing shall be conducted during the non-breeding season (September 1 to January 31) in order to minimize direct impacts on nesting birds. If vegetation clearing would be initiated during the breeding season for nesting birds/raptors (February 1–August 31), the maintenance activity shall be conducted in compliance with the conditions set forth in the Migratory Bird Treaty Act. B. In order to avoid direct impacts on active nests, a pre-construction survey shall be conducted by a qualified Biologist (one with experience conducting nesting bird surveys) for nesting birds and/or raptors within four days prior to clearing of any vegetation or any work near existing structures. The nesting bird survey area shall include a buffer of 300 feet around the work area for nesting birds and a buffer of 500 feet around the work area for nesting raptors. If the Biologist does not find any active nests in or immediately adjacent to the impact area, the vegetation clearing/construction work shall be allowed to proceed. C. 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 determine an appropriate protective buffer around the nest depending on the sensitivity of the species and the nature of the construction activity. The protective buffer shall be between 25 to 300 feet for nesting birds; 300 to 500 feet for nesting raptors; and 1 mile for bald or golden eagles. If the protective buffer needs to be reduced for nesting birds/raptors, LACFCD shall coordinate with a qualified Biologist and CDFW to determine the appropriate reduced buffer. If the protective buffer needs to be reduced for bald or golden eagles, LACFCD shall coordinate with the USFWS and CDFW to determine the appropriate reduced buffer. The active nest shall be protected within the	During the breeding season for nesting birds/raptors (February 1 - August 31, surveys shall occur within four days prior to clearing of any vegetation or any work near existing structures	The LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance.	Project implementation has the potential to impact nesting birds and raptors. Impacts would be reduced to less than significant with MM BIO-10.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	designated buffer until nesting activity has ended. This area shall be designated as an "Environmentally Sensitive Area" and shall be mapped on construction plans. Worker Environmental Awareness Program (WEAP) training shall educate workers on the importance of Environmentally Sensitive Areas. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest or the nest has failed. If any encroachment into a protective buffer is observed, the Biological Monitor shall notify the LACFCD's Construction Inspector of any necessary corrective action needed.			
Cultural Resources				
MM CUL-1	Prior to the start of ground-disturbing activities, a qualified Archaeologist shall be retained by Public Works to attend the pre-grading meeting with the construction contractor to establish, based on the site plans, appropriate procedures for monitoring earth-moving activities during construction. The Archaeologist shall determine, based on consultation with Public Works, when monitoring of grading activities is needed. If any archaeological resources are discovered, construction activities must cease within 50 feet of the discovery, as appropriate, and they shall be protected from further disturbance until the qualified Archaeologist evaluates them using standard archaeological protocols. The Archaeologist must first determine whether an archaeological resource uncovered during construction is a "Tribal Cultural Resources" pursuant to Section 21074 of the *California Public Resources Code*, or a "unique archaeological resource" pursuant to Section 21083.2(g) of the *California Public Resources Code* or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines. If the archaeological resource is determined to be a "Tribal Cultural Resource", "unique archaeological resource" or a "historical resource", the Archaeologist shall formulate a Cultural Resources Treatment and Monitoring Plan (CRTMP) in consultation with Public Works that satisfies the requirements of the above-listed Code Sections. Upon approval of the CRTMP by Public Works, the Project shall be implemented in compliance with the CRTMP. If the Archaeologist determines that the resource is not a "Tribal Cultural Resource", "unique archaeological resource" or "historical resource," s/he shall record the site and submit the recordation form to the California	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	Project implementation has the potential to impact archaeological resources. Impacts would be reduced to less than significant with MM CUL-1.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	Historical Resources Information System (CHRIS) at the South Central Coastal Information Center (SCCIC). The Archaeologist shall prepare a report of the results of any study prepared as part of a testing or mitigation plan, following accepted professional practice. The report shall follow guidelines of the California Office of Historic Preservation. Copies of the report shall be submitted to Public Works and to the CHRIS at the SCCIC at the California State University, Fullerton.			
Geology and Soils				
MM GEO-1	Throughout sediment removal activities and during the sorting of the sediment for beneficial reuse through the aggregate stockpiles, the LACFCD shall require the Contractor to use only suitable sized gravels and cobbles from the upper and middle portions of the Big Tujunga Reservoir as suitable for use as aggregate. Sediments from the lower portion of the Big Tujunga Reservoir shall be evaluated for suitability as aggregate prior to stockpiling. All sediment with high organic contents shall be blended with other sediment to ensure that the organic content does not exceed 5 percent prior to placement at the Maple Canyon SPS and/or stockpiled.	Ongoing throughout sediment removal activities and during the sorting of the sediment for beneficial reuse through the aggregate stockpiles	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Project implementation has the potential to result in hazards involving the release of hazardous materials into the environment. Impacts would be reduced to less than significant with MM GEO-1.
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 or Maple Canyon SPS 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 refueling requirements identified in the LACFCD BMP Manual. • Hazardous materials shall not be stored within the limits of BTR or near drainages. Instead, the hazardous materials shall be stored	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	Project implementation has the potential to result in the accidental release of hazardous materials. Impacts would be reduced to less than significant with MM HAZ-1.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	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	Prior to commencement of any Project 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 shall require that all on-site workers be trained annually on the requirements and protocols. 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. • 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	Project implementation has the potential to result in the hazards to employees. Impacts would be reduced to less than significant with MM HAZ-2.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
MM HAZ-3	Prior to commencement of Project 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 Program shall require that all on-site workers be trained annually on the requirements and protocols. 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 Program shall identify the following: • Type of fall protection 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	Project implementation has the potential to result in the hazards to employees. Impacts would be reduced to less than significant with MM HAZ-3.
MM HAZ-4	Prior to commencement of any Project 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 contractor 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 Plan shall require that all on-site workers be trained annually on the requirements and protocols. The Fire Protection Plan shall be prepared to the satisfaction of LACFCD and provided to the USFS for review and approval prior to commencement of any Project 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	Project implementation has the potential to result in the increased risks of wildland fires. Impacts would be reduced to less than significant with MM HAZ-4.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
Hydrology and Water Quality			
MM HYD-1 Prior to commencement of any Project activities in each year of Project implementation, the LACFCD shall require the Contractor to provide on-site water storage tanks to ensure adequate water availability for fugitive dust suppression. The water for the storage tanks shall be imported throughout the Project.	Prior to commencement of any Project activities in each year of Project implementation	LACFCD shall ensure the measure is included in contractor's specifications and shall monitor compliance	Project implementation has the potential to divert Creek flows during the non-storm season for dust suppression. Impacts would be reduced to less than significant with MM HYD-1.
Land Use and Planning			
MM LUP-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, in compliance with the U.S. Forest Service (USFS) requirements, the LACFCD shall submit a complete application to the USFS for the issuance of a Special Use Permit (SUP) for the continued operation of Maple Canyon Sediment Placement Site (SPS) for the placement of sediment removed from Big Tujunga Reservoir into the SPS and for revegetation of the SPS. Prior to commencement of sediment removal activities, the application and all supporting technical information, including the USFS' *Draft Maple Canyon Sediment Placement Site Revegetation Plan*, shall be completed to the satisfaction of the USFS. The draft document establishes conceptual installation, maintenance, and monitoring guidelines for establishment of native plant species in the Maple Canyon SPS at the conclusion of sediment placement. Based on the Performance Standards, the restoration of the mitigation areas shall be considered successful when all the following criteria are met: • Canopy cover by native species shall attain cover during the 180-day establishment period. Restored areas shall also have acceptable cover at the beginning of the growing season of the year and increase in coverage over the implementation period of ten years. Restored areas shall have an annual nonnative species composition deemed acceptable by the USFS.	Prior to commencement of any sediment removal activities in the first year of Project implementation.	LACFCD shall submit a complete application to the USFS. It shall be completed to the satisfaction of USFS.	Project implementation requires a SUP for the continued operation and revegetation of Maple Canyon SPS. Impacts would be reduced to less than significant with MM LUP-1.

TABLE 1-1
MITIGATION MEASURES TO REDUCE IMPACTS TO LESS THAN SIGNIFICANT/AVOID POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACTS

	Mitigation Measures	Timing	Responsible Party	Potential Impact Avoided/ Reduced to Less Than Significant with Mitigation
	• Woody perennial non-native species and non-native grass and herbaceous species shall have a coverage deemed acceptable by the USFS. • Prior to the agreement that performance standards are met, all restoration sites shall be given an assessment in accordance with the requirements listed in Appendix A, Section A-7 (Maintenance and Trend Monitoring) of the revegetation document.			
Transportation				
MM TRA-1	Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall prepare a Traffic Control Plan, in compliance with the *California Manual for Uniform Traffic Control Devices* (MUTCD), and its California supplements, 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; (2) truck traffic shall be managed such that no queuing shall occur on Big Tujunga Canyon Road; (3) the construction crew shall be required to attend traffic safety meetings to ensure that the Plan is fully implemented; (4) 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 (5) the coordination protocol shall be confirmed with law enforcement and other emergency agencies, as necessary.	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	Project implementation has the potential to result in increased traffic hazards associated with truck traffic. Impacts would be reduced to less than significant with MM TRA-1.

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SECTION 2.0 INTRODUCTION AND ENVIRONMENTAL SETTING

2.1 INTRODUCTION

2.1.1 PURPOSE OF THE REVISED AND RECIRCULATED 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 Revised and Recirculated Initial Study (IS) has been prepared as documentation for a Mitigated Negative Declaration (MND) for the proposed Los Angeles County Flood Control District (LACFCD) BTR Restoration Project (Project). This Revised and Recirculated 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 Revised and Recirculated 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 Revised and Recirculated IS/MND to reflect its independent judgment, including reliance on applicable LACFCD technical personnel and review of all technical subconsultant reports. Data for this Revised and Recirculated 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 a ssessments prepared for the Project. The LACFCD has the authority for Project approval and adoption of this Revised and Recirculated IS/MND.

This Revised and Recirculated IS/MND evaluates the potential environmental impacts of Project implementation; it includes significance determinations from the environmental analyses; it identifies 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 by the U.S. Forest Service (USFS) for the disposal of sediment removed from the BTR. The EA evaluated the environmental impacts of the removal of 2.4 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 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 1.1 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, installation of a boat dock, new elevator, new lighting, valves, and control house). The objective of this seismic upgrade project was to strengthen the dam and reduce the probability of dam failure during a seismic event. This project involved an informal Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) 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. The boat dock would be installed near the end of the proposed Project once sediment at the dam face has been removed. The work would consist of installing anchors to the dam structure, running cables, and placing the boat dock in the reservoir.

Due to changes in existing conditions at the Project site since the 1981 EA, new regulations applicable to the Project, and the expiration of the LACFCD's existing SUP issued by the USFS, an IS/MND was prepared, independent of the previous environmental documentation and in accordance with current CEQA regulations. In 2013, an IS/MND (2013 Draft IS/MND) was prepared for the Project[6], and was circulated for public review from May 13 to June 26, 2013, pursuant to CEQA Guidelines Section 15073. The 45-day public review period exceeded the requirements of a 30-day public review period for an IS/MND. An informational public meeting was held on Monday, May 20, 2013 at 6:00 p.m. at the Elk's Lodge Sunland-Tujunga Lodge Room located at 10137 Commerce Avenue, in Tujunga, to discuss the Project and the 2013 Draft IS/MND. Twenty individuals signed the sign-in sheet that was made available at the meeting.

The 2013 Draft IS/MND was sent to the State Office of Planning and Research, State Clearinghouse and Planning Unit (State Clearinghouse); responsible and trustee agencies; organizations and interested parties, and all parties who requested notice in accordance with CEQA. The Notice of Intent (NOI) was filed with the Los Angeles County Registrar-Recorder/County Clerk in the City of Norwalk, and published in the Los Angeles Times, San Fernando Valley Sun, and San Gabriel Valley Tribune. An electronic copy of the IS/MND and the NOI, or the NOI alone was provided to 16 agencies, including nine agencies notified via the State Clearinghouse. The IS/MND and associated technical reports were made available for public viewing online at pw.lacounty.gov/wrd/Projects/BigTujunga/. Hard copies of the 2013 Draft IS/MND were available for public viewing during regular business hours at the LACFCD office in Alhambra; the La Crescenta Library; the Sunland Tujunga Library; and the San Fernando Library.

Letters commenting on the information and analysis in the Draft IS/MND were received from various agencies and individuals during the public review period. As discussed further below, written responses to all comments received on the 2013 Draft IS/MND will be prepared after the close of the public review period for this Revised and Recirculated IS/MND.

To account for the approximately six years that have passed since the public review period of the 2013 Draft IS/MND, this Revised and Recirculated IS/MND has been prepared to clarify the revisions to the Project Description and to update the analysis of environmental impacts and associated mitigation measures, accordingly, as discussed below.

[6] The title of the Project during the previous IS/MND was the Big Tujunga Sediment Removal Project

2.1.3 REVISED AND RECIRCULATED IS/MND CEQA PROCESS

Pursuant to Section 15073.5 of the State CEQA Guidelines, because the changes to the Project are considered "substantial revisions" and the 2013 Draft IS/MND had not been adopted by the County, a Revised and Recirculated IS/MND has been prepared to disclose the revised Project Description and analyze the environmental impacts of the current Project. Section 15073.5 of the State CEQA Guidelines states:

> (a) A lead agency is required to recirculate a negative declaration when the document must be substantially revised after public notice of its availability has previously been given pursuant to Section 15072, but prior to its adoption. Notice of recirculation shall comply with Sections 15072 and 15073.
>
> (b) A "substantial revision" of the negative declaration shall mean:
>
> (1) A new, avoidable significant effect is identified and mitigation measures or project revisions must be added in order to reduce the effect to insignificance, or
>
> (2) The lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required.

The proposed Project's baseline conditions have changed since the 2013 Draft IS/MND and new biological resources were identified during surveys that were not present during previous surveys. As such, new significant impacts were identified that required the addition of mitigation measures to reduce the effects to levels less than significant. Accordingly, this Revised and Recirculated IS/MND has been prepared because the criterion described under Section 15073.5(b)(1) above has been met, and substantial revisions are required to the 2013 Draft IS/MND after its public review period but prior to its adoption per Section 15073.5(a) above. Table 2-2, further below, summarizes the substantive changes to the 2013 Draft IS/MND, including those related to Project revisions and new environmental impacts and associated mitigation measures. The 2013 Draft IS/MND will remain posted on the LACFCD's website.

The LACFCD, as the Lead Agency, has commissioned the preparation of this Revised and Recirculated IS/MND and has reviewed and revised, as necessary, all submitted drafts and technical studies to reflect its independent judgment, as required by Section 21082.1 of CEQA. Data for this Revised and Recirculated IS/MND was obtained from on-site field observations, and review of available technical studies, reports, guidelines, and data.

Under CEQA, an Environmental Impact Report (EIR) is required when there would be impacts that would not be avoided or reduced to a less than significant level with project changes or with mitigation measures (Section 15064(a)(1) of the State CEQA Guidelines). This Revised and Recirculated IS/MND discloses the environmental impacts that would result from the revised Project and describes new mitigation measures that would reduce all new impacts to a level that is less than significant. Therefore, an MND is the appropriate CEQA documentation for the Project. This Revised and Recirculated IS/MND and its associated technical appendices replace and supersede the 2013 Draft IS/MND.

Regarding circulation of the IS/MND, it should be noted that due to the pandemic and the State of Emergency in California, Executive Orders (EO N-54-20 and N-80-20) were issued to address filing, noticing, and posting of the CEQA documents.

EO N-54-20. In recognition that some County offices are closed to the public and do not accept filings and post notices as required by CEQA, EO N-54-20, signed on April 22, 2020, suspended deadlines for filing, noticing, and posting of CEQA document for 60 days. EO N-54-20 states the following:

Paragraph 8

The public filing, posting, notice, and public access requirements set forth in Public Resources Code sections 21092.3 and 21152, and California Code of Regulations, Title 14, sections 15062 (c)(2) and (c)(4); 15072(d); 15075(a), (d), and (e); 15087(d); and 15094(a), (d), and (e), for projects undergoing, or deemed exempt from, California Environmental Quality Act review, are suspended for a period of 60 days. This suspension does not apply to provisions governing the time for public review.

In the event that any lead agency, responsible agency, or project applicant is operating under any of these suspensions, and the lead agency, responsible agency, or project applicant would otherwise have been required to publicly post or file materials concerning the project with any county clerk, or otherwise make such materials available to the public, the lead agency, responsible agency, or project applicant (as applicable) shall do all the following:

a) Post such materials on the relevant agency's or applicant's public-facing website for the same period of time that physical posting would otherwise be required;

b) Submit all materials electronically to the State Clearinghouse CEQAnet Web Portal; and

c) Engage in outreach to any individuals and entities known by the lead agency, responsible agency, or project applicant to be parties interested in the project in the manner contemplated by the Public Resources Code sections 21100 et seq. and California Code of Regulations, Title 14, sections 15000 et seq.

In addition to the foregoing, lead agencies, responsible agencies, and project applicants are also encouraged to pursue additional methods of public notice and outreach as appropriate for particular projects and communities.

EO N-80-20. This EO, signed on September 23, 2020, extended the relief from certain public filing, posting, notice, and public access requirements under CEQA that were first implemented under EO N-54-20 in April 2020. EO N-80-20 states the following:

Paragraph 6

The provisions of Paragraph 8 of Executive Order N-54-20- conditionally suspending (subject to the conditions set forth in subparagraphs (a)-(c) of that paragraph) certain public filing, posting, notice, and public access requirements for projects undergoing, or deemed exempt from, California Environmental Quality Act review- are hereby extended until this Order is modified or rescinded, or until the State of Emergency is terminated, whichever occurs sooner. A lead agency, responsible agency, or project applicant that complies with the conditions set forth in subparagraphs (a)-(c) of Paragraph 8 of Executive Order N-54-20 shall be deemed to have fully satisfied any applicable requirements for public filing, posting, notice, and public access set forth in Public Resources Code sections 21092.3 and 21152, as well as California Code of Regulations, Title 14, sections 15062(c) (2) and (c)(4); 15072(d); 15075 (a), (d), and (e); 15087(d); and 15094(0), (d), and (e).

> Nothing in this Paragraph 6 or in Paragraph 8 of Executive Order N-54- 20 shall be construed to limit a lead agency's, responsible agency's, or project applicant's ability to satisfy applicable requirements for public filing, posting, notice, and public access by complying with the laws conditionally suspended by Paragraph 8 of Executive Order N-54-20. A lead agency, responsible agency, or project applicant that is able to comply with those laws (and that therefore need not avail itself of the conditional suspension set forth in Paragraph 8 of Executive Order N- 54-20) may do so without further satisfying the conditions set forth in subparagraphs (a)-(c) of Paragraph 8 of Executive Order N-54-20.

As the restrictions have not been lifted, and the office of Registrar-Recorder/County Clerk remains closed to the public, per direction on the County's website, an original copy of the NOI and associated fees was mailed along with a self-addressed paid envelope to the said office. Per the current guidance and practices, an executed copy of the NOI will be mailed to the Lead Agency in the self-addressed paid envelope.

Additionally, in recognition of the guidance issued from the Office of Planning and Research (OPR), since November 3, 2020, all CEQA documents and notices of completion (NOCs) are to be posted on the OPR website (CEQAnet) electronically. Hard copy submittals are no longer acceptable. Therefore, the IS/MND has met all noticing requirements in light of the current requirements and conditions.

Furthermore, the Revised and Recirculated IS/MND has been submitted to potentially affected agencies and interested organizations and individuals that have provided a written request to the LACFCD to be informed about the proposed Project, as well as individuals that attended the Community Meeting or provided comments on the 2013 Draft IS/MND. An NOI to adopt an MND was also published in the Los Angeles Times and is on file at the Los Angeles County Registrar-Recorder/County Clerk in the City of Norwalk. The Revised and Recirculated IS/MND and associated technical reports can be viewed online at pw.lacounty.gov/wrd/Projects/BigTujunga/, in light of the pandemic. Electronic copies of the Revised and Recirculated IS/MND and technical appendices can also be viewed at the following public libraries: Sunland Tujunga Library at 7771 Foothill Boulevard, Sunland; La Crescenta Library at 2809 Foothill Boulevard, La Crescenta; and San Fernando Library at 217 North Maclay Avenue, San Fernando.

There will be a 30-day public review period for the Revised and Recirculated IS/MND, meeting the requirements of Section 15073 of the State CEQA Guidelines. In reviewing the Revised and Recirculated 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 Project are avoided or lessened. Comments or questions on this Revised and Recirculated IS/MND must be postmarked by 5:00 PM on October 25, 2021 and can be sent in writing by mail to the LACFCD at the address below; via email to reservoircleanouts@pw.lacounty.gov, or by fax to (626) 979-5436. Please include "Big Tujunga Reservoir Restoration Project" in the subject line. Comments can also be mailed to the following address:

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

In accordance with Section 15074 of the State 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 Revised and Recirculated IS/MND together with any comments received during the public review process. The Board will adopt the Revised and Recirculated

IS/MND and approve the Project 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 Revised and Recirculated IS/MND reflects the County's independent judgment. Written responses to all comments received on the 2013 Draft IS/MND will be prepared after the close of the public review period for this Revised and Recirculated IS/MND.

In light of the pandemic, a virtual public information meeting to discuss the Project will be held, during recirculation of the IS/MND, on Thursday, October 14, 2021**,** from 6:00 PM to 8:00 PM. Further information regarding accessing the meeting virtually and the link to the meeting are provided in the Notice of Intent (NOI) that was recently circulated. Information is also provided at the County's website at pw.lacounty.gov/wrd/Projects/BigTujunga/.

2.1.4 SUMMARY OF REVISED AND RECIRCULATED IS/MND FINDINGS

This Revised and Recirculated IS/MND evaluates the potential environmental impacts of Project implementation; includes significance determinations from the environmental analyses; identifies regulatory requirements (RRs) that must be implemented; and sets forth mitigation measures (MMs) that would reduce or avoid potentially significant Project impacts on the environment to less than significant impacts. RRs are based on local, State, and/or federal regulations or laws that are required independent of CEQA review, yet also serve to offset or prevent certain impacts. Because RRs are required to be part of any project's design and/or implementation and are requirements regardless of the need for environmental review pursuant to CEQA, they do not constitute mitigation measures under CEQA.

The LACFCD will confirm that all RRs and MMs are included in the Contractor Specifications and bid documents, as appropriate, and verified as part of the Mitigation Monitoring and Reporting Program (MMRP). Prior to mitigation, implementation of the Project would result in potentially significant impacts to Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards/Hazardous Materials, Hydrology and Water Quality, Transportation, Tribal Cultural Resources, Wildfire, and Mandatory Findings of Significance (i.e. cumulative). Implementation of MMs as detailed in Section 1.0 Executive Summary, and Section 4.0 Environmental Checklist Form and Assessment, would reduce the potentially significant impacts related to these topical areas to a less than significant level. There would be no impact or less than significant impacts for all other topical areas after mitigation.

2.2 SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Table 2-1 below provides a tabular summary of the substantive changes to the 2013 Draft IS/MND, with a reference to the primary section(s) of this Revised and Recirculated IS/MND addressing the change. Substantive changes include but are not limited to: the Project description, analysis methodology, and/or supporting data; new or revised mitigation measures; and/or impact conclusions. Grammatical or editorial changes, or updates to reference documents that do not affect the analysis or conclusions of the Revised and Recirculated IS/MND, are not considered substantive changes and are not listed in Table 2-1. Please refer to Section 3.0, Project Description, for a complete discussion of the currently proposed Project.

The 2013 Draft IS/MND and other documentation related to the proposed Project is available for viewing online at: pw.lacounty.gov/wrd/Projects/BigTujunga/. As noted above, pursuant to the analysis in the Revised and Recirculated IS/MND, and affirmed by the revised technical studies, implementation of the proposed Project would result in less than significant environmental impacts after implementation of MMs. Therefore, an MND remains the appropriate CEQA document for the Project.

Individual responses to all comments received on both the 2013 Draft IS/MND and this Revised and Recirculated IS/MND will be prepared subsequent to the issuance of the NOI and the close of the public review period for this Revised and Recirculated IS/MND. All comments received on the 2013 Draft IS/MND and this Revised and Recirculated IS/MND, and written responses to these comments, will be provided to the County of Los Angeles Board of Supervisors as part of the information to be considered in whether to approve the Project and adopt the Revised and Recirculated IS/MND.

TABLE 2-1
SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Information Presented in 2013 Draft IS/MND	Revisions in Revised and Recirculated IS/MND	Primary Section(s) Addressing the Change
Summary of Project Description; 2013 IS/MND conclusions, RRs and MMs	Summary of Project Description; Revised and Recirculated IS/MND conclusions, RRs and MMs	1.0 Executive Summary 2.0 Introduction and Environmental Setting
Project Design Features (PDFs) listed	PDFs eliminated and converted into Mitigation Measures (MMs) when they have value for mitigation	1.0 Executive Summary 4.3 Air Quality 4.4 Biological Resources 4.10 Hydrology/Water Quality
N/A	Summary of Changes to the 2013 IS/MND; Table 2-2	2.0 Introduction and Environmental Setting
Based on 2009/2010 and 2010/2011 storm season surveys, the total amount of sediment in the reservoir was approximately 2.0 mcy and sediment elevation at the dam face was at 2,170 feet above mean sea level (msl).	Based on the survey following the 2015 storm season, the total amount of sediment in the reservoir was approximately 2.1 mcy and sediment elevation at the dam face was at 2,167feet above msl (following the 2017 survey).	2.0 Introduction and Environmental Setting 4.4 Biological Resources
Summary of on-site biological resources	Update to biological resources, including Critical Habitat; presence of least Bell's vireo and Greata's aster	2.0 Introduction and Environmental Setting
Sediment excavations are anticipated to begin approximately April 16, 2015 and would continue through approximately October 14 (non-storm season) each year for five years	Sediment excavations are anticipated to begin approximately April 16 to October 14 (i.e., non-storm season) each year for five years or until all sediment above the reservoir bottom is removed, whichever comes first. Work could continue past October 14 until the first major forecasted storm.	3.0 Project Description 4.3 Air Quality 4.4 Biological Resources 4.8 Greenhouse Gas Emissions
Conveyor Belt System Option for delivery of sediment to Maple Canyon SPS	Elimination of Conveyor Belt System Option as an alternative to move all sediment to Maple Canyon SPS. Project Description includes low-emissions trucking of sediment to the Maple Canyon SPS.	3.0 Project Description
Maple Canyon Sediment Placement Site Revegetation Plan assumed as part of the Project Description	Updated *Maple Canyon Sediment Placement Site Revegetation Plan* required and subject to USFS review and approval (MM LUP-1). The *Draft Maple Canyon Sediment Placement Site Revegetation Plan* is currently in review by the USFS. As such, the document is not available for public review at this time.	3.0 Project Description

TABLE 2-1
SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Information Presented in 2013 Draft IS/MND	Revisions in Revised and Recirculated IS/MND	Primary Section(s) Addressing the Change
Trucking of crushed aggregate materials 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. This staging area would be completely removed from the reservoir prior to each storm season.	Elimination of off-site hauling of aggregate. Project includes stockpiling of up to 28,000 cy of aggregate on-site for use within Forest boundaries. Stockpiles would stay at the staging area up at maximum height of 20 feet (MM AES-1), after Project completion until aggregate was used by Public Works' Stormwater Maintenance Division and Road Maintenance Division.	3.0 Project Description
Dump trucks to leave worksite each day under Low-Emissions Trucking Option	Dump trucks to remain on-site, mobilizing only once each year at the beginning of sediment removal operations in April and once at the end of sediment removal operations in October	3.0 Project Description
N/A	Other minor activities that would occur in conjunction with the proposed sediment removal activities include: (1) hydroblasting to flush a stilling well on the dam crest; (2) repair of the hydraulic sluicegate; (3) access road paving and repair of the culvert crossing; (4) slope protection measures adjacent to the spillway;(5) rehabilitating the northern access ramp to safely access the reservoir bottom; (6) installing a boat dock at the dam face; and (7) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering.	3.0 Project Description
N/A	Additional text describing no changes to long-term operations and maintenance at BTR or Maple Canyon SPS	3.0 Project Description
Table 3-2; Section 7 consultation to address impacts to arroyo toad and Santa Ana sucker	Table 3-2; Section 7 consultation to address impacts to arroyo toad, Santa Ana sucker, and least Bell's vireo	3.0 Project Description
Impact analysis for Conveyor Belt System Option with belt crossing Big Tujunga Canyon Road to Maple Canyon SPS	Use of a conveyor belt is no longer applicable.	4.1 Aesthetics
N/A	Analysis of other repair-related activities	4.1 Aesthetics
Discussion of *Maple Canyon Sediment Placement Site Revegetation Plan* as applicable to State Scenic Highway analysis	Revision to analysis, confirming there are no designated State scenic highways in Project vicinity	4.1 Aesthetics
N/A	New analysis and visual simulation of aggregate stockpiles and new MM AES-1	4.1 Aesthetics
Tables 4-1 and 4-2 applicable to 2013 regulations	Table 4-1 updated to reflect latest California and National Ambient Air Quality Standards and Table 4-2 updated to reflect latest Criteria Pollutants	4.3 Air Quality

TABLE 2-1
SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Information Presented in 2013 Draft IS/MND	Revisions in Revised and Recirculated IS/MND	Primary Section(s) Addressing the Change
Low-Emission Trucking Option would require that 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 to reduce air pollutants (PDF AQ-2).	All off-road equipment would be required to be Tier 4 Final or better to reduce air pollutants (MM AQ-2).	4.3 Air Quality
PDF AQ-3 states that all haul roads, with the exception of the 0.33-mile portion of the route, would be paved prior to sediment removal activities.	PDF AQ-3 converted to MM AQ-3, and increased to 0.4 mile-portion to be unpaved instead of 0.33-mile unpaved portion	4.3 Air Quality
RR AQ-1 presents overview of required South Coast Air Quality Management District rules applicable to Project	Additional detail added to RR AQ-1 regarding Rule 402 and anticipated contractor requirements to manage fugitive dust under Rule 403	4.3 Air Quality
Regulatory information related to 2007 South Coast South Coast Air Quality Management District Air Quality Management Plan (AQMP)	Regulatory information updated related to current 2016 AQMP	4.3 Air Quality
N/A	Analysis of other repair-related activities	4.3 Air Quality
Air quality and greenhouse gas emissions analyses modeled for years 2013-2014.	Air quality and greenhouse gas emissions analyses modeled for year 2020.	4.3 Air Quality 4.8 Greenhouse Gas Emissions
Paving activity (PDF AQ-1) addressed qualitatively.	Paving activity (MM AQ-1) emissions are quantified.	4.3 Air Quality 4.8 Greenhouse Gas Emissions
Air modeling prepared using CalEEMod Version 2013.2.2	Air modeling prepared using CalEEMod Version 2016.3.2	4.3 Air Quality
N/A	Vegetation mapping, focused surveys, and the jurisdictional delineation have been updated since the previous 2013 Draft IS/MND was circulated, and results are incorporated throughout Section 4.4.	4.4 Biological Resources
Biological Resources present in 2013 are discussed	Biological Resources present in 2018 are discussed based on new survey data. Updates were made to the following: Jurisdictional Delineation Report; Arroyo Toad Survey; Sierra Madre Yellow-Legged Frog Survey; Red-legged Frog Survey; Focused Plant Surveys; Least Bell's Vireo and Southwestern Willow Flycatcher Surveys; Vegetation Mapping for the Big Tujunga Dam Operation and Maintenance Habitat Conservation Plan (HCP); and results of the 6th, 7th, 8th, 9th, and 10th Annual Long-term Santa Ana Sucker and Benthic Macroinvertebrate Monitoring Project	4.4 Biological Resources
PDF BIO-1 (arroyo toad), avoidance of direct impacts on critical habitat.	PDF BIO-1 converted to MM BIO-5.	4.4 Biological Resources

TABLE 2-1
SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Information Presented in 2013 Draft IS/MND	Revisions in Revised and Recirculated IS/MND	Primary Section(s) Addressing the Change
PDF BIO-2 (dewatering releases ramp-up and ramp-down to minimize impacts on the Santa Ana sucker)	PDF BIO-2 converted to MM BIO-4.	4.4 Biological Resources
PDF BIO-3 (water quality filtration BMPS)	PDF BIO-3 converted to MM BIO-4.	4.4 Biological Resources
PDF BIO-4 (coast live oak tree branches/root trimming and maintenance)	PDF BIO-5 removed.	4.4 Biological Resources
No significant impact to Greata's aster	MM BIO-1 required to reduce impacts to Greata's aster	4.4 Biological Resources
No significant impact to Plummer's mariposa-lily and fragrant pitcher sage	MM BIO-2 required to avoid and minimize unintentional impacts to Plummer's mariposa-lily and fragrant pitcher sage adjacent to the impact area	4.4 Biological Resources
MM BIO-3	A new MM was added to address proposed impacts to Crotch bumble bee.	4.4 Biological Resources
MM BIO-4	[Renumbered] MM BIO-4 to include a Special Status Fish Relocation Plan to describe the methodology to move Santa Ana sucker, arroyo chub, and Santa Ana speckled dace out of the plunge pool and work area at the mouth of the stream where BMPs will be installed for water quality and/or to allow for the continued fish passage while water is diverted around an in-stream work area.	4.4 Biological Resources
MM BIO-5	[Renumbered] MM BIO-5 to include Arroyo Toad Relocation Plan (ATRP) and preconstruction surveys	4.4 Biological Resources
MM BIO-6	[Renumbered] MM BIO-6 to include a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act and Consistency Determination by the CDFW. The LACFCD/USACE to obtain written concurrence from the USFWS and CDFW that the avoidance and minimization measures for least Bell's vireo are suitable.	4.4 Biological Resources
MM BIO-7	[Renumbered] MM BIO-7 to require relocation for western pond turtle approved by USFWS due to its HCP Covered Species status. MM expanded per HCP requirements.	4.4 Biological Resources
MM BIO-8	Due to the pond turtle's status as an HCP Covered Species and expanded measures for its protection, [Renumbered] MM BIO-7 was split and MM BIO-8 was added to address two-striped garter snake separately, at the same level of mitigation as previously listed in MM BIO-6.	4.4 Biological Resources
MM BIO-9	[Renumbered] MM BIO-9 to require mitigation for impacted jurisdictional resources and either purchase of credits from a mitigation bank or preparation of a habitat mitigation and monitoring plan (HMMP).	4.4 Biological Resources

TABLE 2-1
SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Information Presented in 2013 Draft IS/MND	Revisions in Revised and Recirculated IS/MND	Primary Section(s) Addressing the Change
MM BIO-10	[Renumbered] MM BIO-10 to clarify additional requirements for the breeding season for avoidance of nesting birds/raptors. Revised per HCP requirements.	4.4 Biological Resources
N/A	Summary of Phase I Cultural Resources Assessment completed in 2017. Discussion of updated archaeological and historical resources records search for the Project site.	4.5 Cultural Resources
Historic resources discussed related to SCE transmission line	Historic resources analysis updated to include discussion of Big Tujunga Dam and non-eligibility of listing of the SCE Verdugo Circuit and USFS Transmission Line Road Alignment, and avoidance of Hansen's Lodge	4.5 Cultural Resources
MM CUL-1	MM CUL-1 to include requirement to address tribal cultural resources	4.5 Cultural Resources
N/A	New discussion of Energy thresholds	4.6 Energy
Threshold 4.5[d] (related to expansive soils) less than significant.	Threshold 4.5[d] (related to expansive soils) less than significant with MM GEO-1	4.7 Geology and Soils
N/A	Summary of Los Angeles County General Plan 2035 and Los Angeles County Community Climate Action Plan 2020.	4.8 Greenhouse Gas Emissions
Table 4-16	Table 4-16 includes updated quantification based on air modeling prepared using CalEEMod Version 2016.3.2	4.8 Greenhouse Gas Emissions
N/A	Summary of 2013 Geotechnical and Materials Engineering Division (LACPW) report	4.9 Hazards/Hazardous Materials
N/A	Removal of MM HAZ-2 (related to Conveyor Belt option).	4.9 Hazards/Hazardous Materials
RR HAZ-1	RR HAZ-1 to include more discussion of regulations	4.9 Hazards/Hazardous Materials
N/A	New discussion of hazards from exposure to soil retardants used for fire fighting	4.9 Hazards/Hazardous Materials
PDF HYD-1 and PDF HYD-2	Removed PDF HYD-1 and PDF HYD-2 and incorporated as part of required project description components	4.10 Hydrology and Water Quality
N/A	Discussion of how [Renumbered] MM BIO-4 contributes to water quality protection	4.10 Hydrology and Water Quality
N/A	MM HYD-1 requires the Contractor to provide on-site water storage tanks to ensure adequate water availability for fugitive dust suppression. The water for the storage tanks will be imported throughout the Project.	4.10 Hydrology and Water Quality 4.19 Utilities and Service Systems
MM LUP-1	MM LUP-1 requires the U.S. Forest Service (USFS) Draft Maple Canyon Sediment Placement Site Revegetation Plan to be completed to the satisfaction of USFS prior to commencement of sediment removal activities.	4.1 Aesthetics 4.11 Land Use and Planning
Trucking of aggregate to off-site processor	Elimination of option to use aggregate outside of the Forest boundaries	4.12 Mineral Resources

TABLE 2-1
SUMMARY OF CHANGES TO THE 2013 DRAFT IS/MND

Information Presented in 2013 Draft IS/MND	Revisions in Revised and Recirculated IS/MND	Primary Section(s) Addressing the Change
Noise from trucks hauling aggregate through neighborhoods to off-site processor	Elimination of option to use aggregate outside of the Forest boundaries	4.13 Noise
Population growth from employment	Augmented discussion of Dam Operator and available skilled workforce	4.14 Population and Housing
RR TRA-1 required that traffic control would be in compliance with the County Code.	RR TRA-1 clarified to add compliance with Greenbook. RR TRA-2 added for oversized transport vehicles.	4.17 Transportation
MM TRA-1	MM TRA-1 eliminates requirement related to queuing on I-210 because no off-site hauling of aggregate allowed and no removal of dump trucks from Project site on a daily basis	4.17 Transportation
N/A	New discussion of Tribal Cultural Resources thresholds	4.18 Tribal Cultural Resources
N/A	New discussion of Wildlife thresholds	4.20 Wildfire
IS/MND contributors from Public Works	LACFCD contributors updated to reflect current project staffing	5.0 Document Preparers and Contributors
Appendix A – Air Quality Modeling Data	Revised data provided in Appendix A	Appendix A, Section 4.3, Air Quality
Appendix B – Biological Studies	Revised reports provided in Appendix B	Appendix B (B-1 through B-10), Section 4.4, Biological Resources
Appendix C – Cultural Resources Assessment	Revised report provided in Appendix C	Appendix C, Section 4.5, Cultural Resources
Appendix D – Energy	Energy Data included as a new Appendix D	Appendix D, Section 4.6
Appendix E – Sediment Characterization Study	Included in Appendix E	Appendix E, Section 4.9 Hazards/Hazardous Materials
Appendix F – Geotechnical Investigation	Geotechnical Investigation, Maple Canyon Sediment Placement Site report provided in Appendix F.	Appendix F

2.3 ENVIRONMENTAL SETTING

The LACFCD proposes to conduct the Big Tujunga Reservoir Restoration Project, which involves the excavation of sediment within the BTR and the transport and deposition of the sediment in Maple Canyon 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 proposed Project's need and background. The information provided in this section is used as the "baseline" condition from which Project-related impacts are assessed.

2.3.1 PROJECT LOCATION

The proposed 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. Exhibit 2-1 identifies the Project boundary; access road alignment; sediment removal area within BTR; access ramp and slope protection areas adjacent to the dam; aggregate stockpile/staging area; and sediment placement area within Maple Canyon SPS.

BTR and Maple Canyon SPS are located within the unincorporated Los Angeles County on lands owned by the USFS. BTR is located on the north and 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 Big Tujunga Dam structure is approximately 0.7-mile northeast 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.

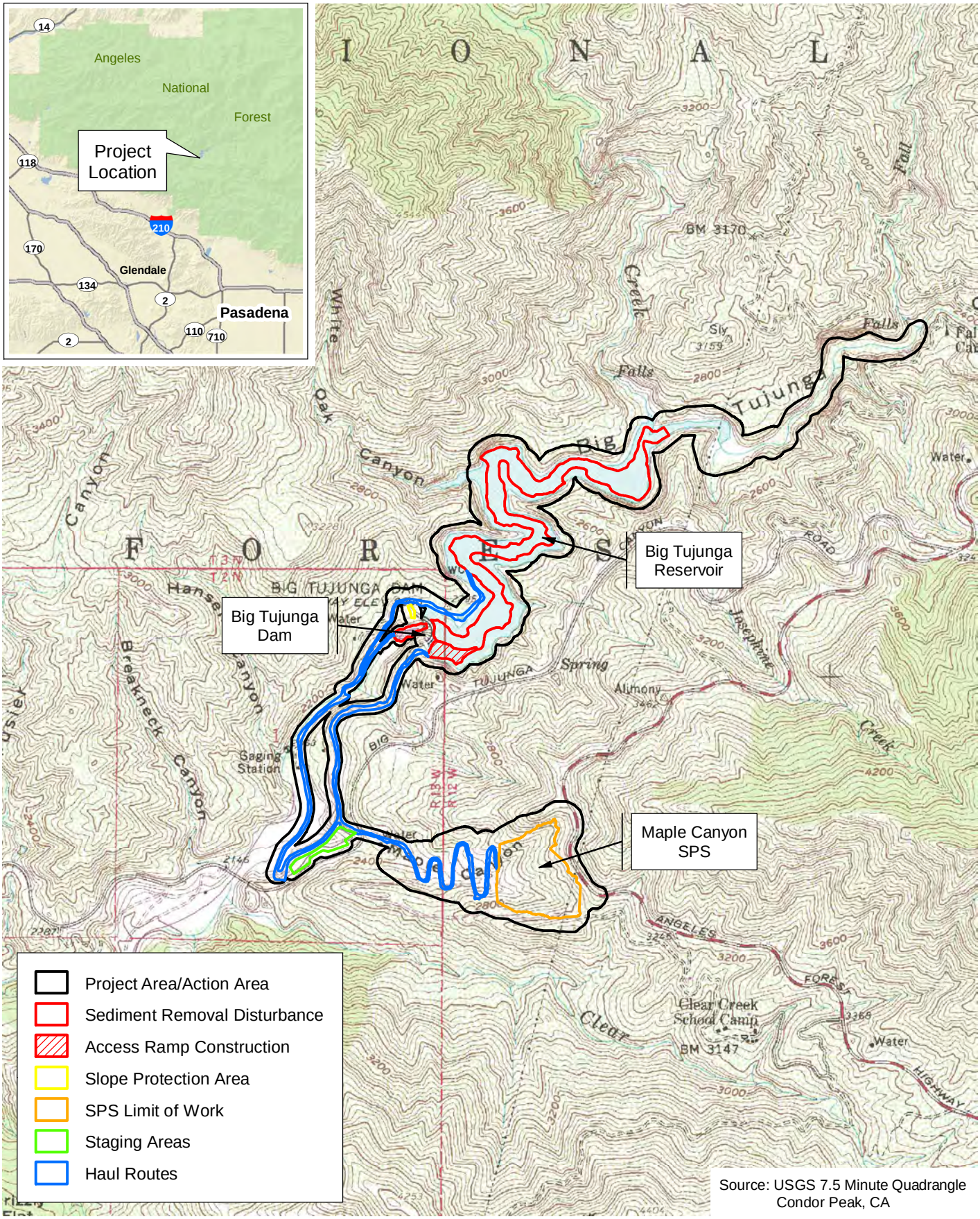
2.3.2 PROJECT BACKGROUND

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 clean-out 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 2.4 mcy of sediment and debris to Maple Canyon SPS. The 1994-95 clean-out resulted in the removal of approximately 1.1 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



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Regional Location

Exhibit 2-1

Big Tujunga Reservoir Sediment Removal Project

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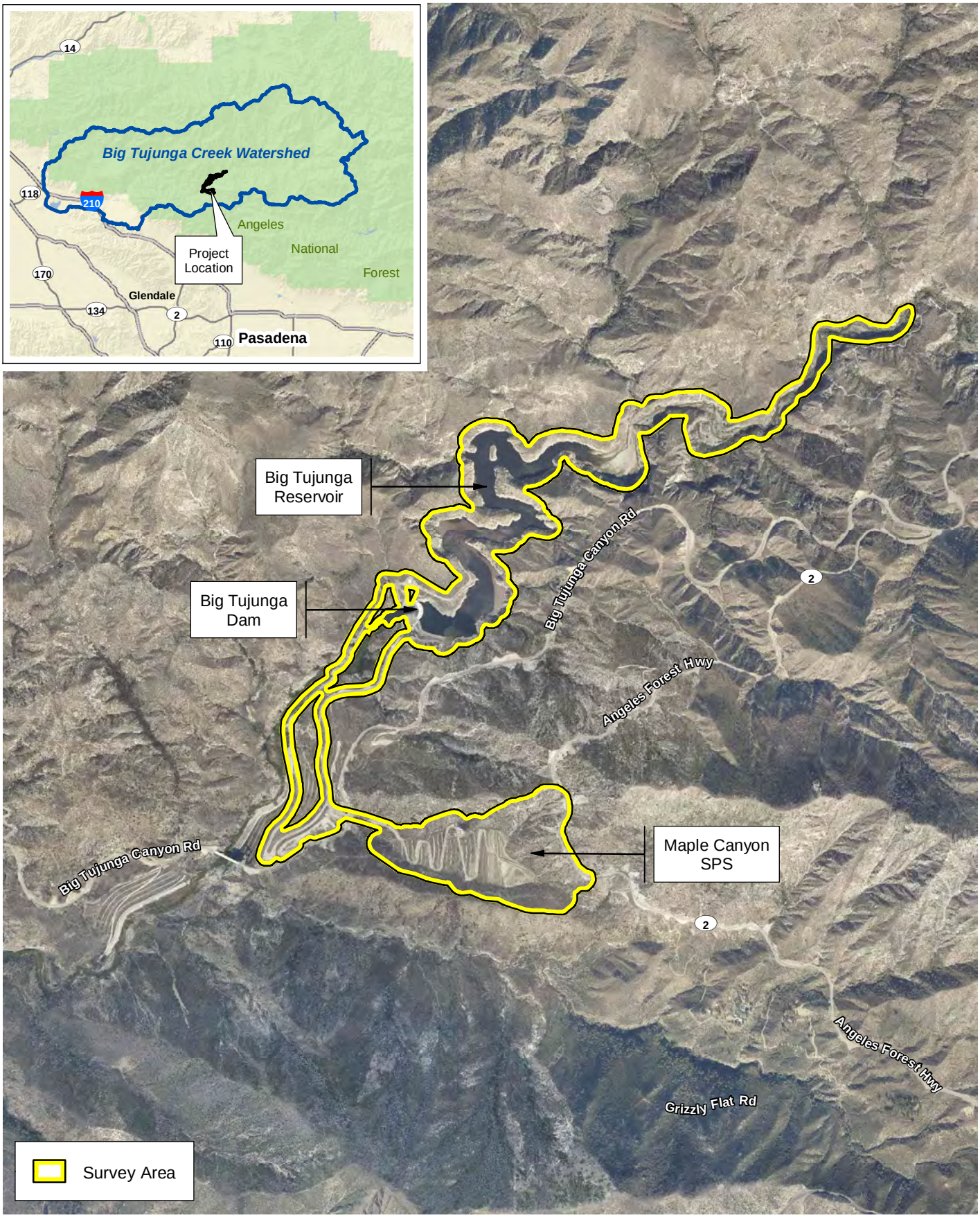
from a wildfire burn. During this recovery time, increased amounts of debris (e.g., scorched vegetation and topsoil) are transported from burned areas during rain events due to the denuded ground surface. Based on the County's survey following the 2017 storm season, the total amount of accumulated sediment in the BTR was approximately 2.1 mcy. Due to the extended drought which followed the fire, significant volumes of debris remain at the bottom of tributary canyons upstream of the reservoir. The drought has also delayed the watershed's recovery, leaving the potential for increased sediment runoff. Due to these factors, heavy storms could still produce an additional 2.3 mcy of sediment/debris, totaling 4.4 mcy that could affect Big Tujunga Dam. 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 Seismic Upgrade 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 Seismic Upgrade project seismically strengthened the dam to reduce the probability of dam 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 elevation (2,290 feet above msl).

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 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; installing a boat dock; 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 provided increased water conservation and habitat enhancement opportunities by removing the State-imposed holding elevation of 2,213 feet above msl allowing for a potential increase in annual water conservation of up to 4,500 acre-feet (af). Additionally, a low-flow valve was installed to allow for additional habitat enhancement opportunities downstream.

2.3.3 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 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.



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Project Site Aerial and Watershed

Exhibit 2-2

Big Tujunga Reservoir Sediment Removal Project

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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.

2.3.4 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) timing, 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); (5) amount of sediment impounded in the reservoir; and (6) supplemental releases for the Santa Ana sucker.

On an annual basis during the storm season, flows are released from the reservoir on an as-needed basis, particularly during and after large storm events, to ensure adequate capacity behind the dam to attenuate flows during subsequent storms. As each storm season proceeds, additional water may be held in the reservoir to provide for water conservation, supplemental releases, and habitat enhancement (in coordination with the Santa Ana Sucker Working Group – See Section 2.3.7 Biological Resources) during the summer months. The amount of water in the reservoir at the end of each storm season varies dependent upon timing/intensity of winter storms and the amount and duration of recession flows.

Prior to the completion of the Seismic Upgrade Project in 2012 (described under Section 2.1.2, Previous Environmental Documentation), the holding elevation for BTR was at 2,213 feet above msl due to the seismic restrictions imposed on the facility by the Division of Safety of Dams (DSOD). The lowest elevation the reservoir can be dewatered to using only valve releases is 2,188 feet above msl. The Seismic Upgrade Project eliminated the seismic restrictions imposed by the DSOD and restored the ability to impound water to spillway elevation (2,290 feet above msl). In addition to improving seismic stability and flood safety of the dam, the Big Tujunga Dam Seismic Upgrade Project provides increased water conservation and habitat enhancement opportunities by allowing for an increase in annual water conservation and the ability to implement more controlled discharges. Since the completion of the Seismic Upgrade Project in 2012, LACFCD has managed the water from BTR to provide up to 1,500 af for supplemental releases for the Santa Ana sucker.

2.3.5 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 located on the upstream dam face, which protect the dam's valves from large debris as water is released into the plunge pool at the downstream side of the dam. 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.[7] A 5-ft by 5-ft hydraulic slide gate is located on the upstream face of the dam at an elevation of 2,144 feet above msl. The current sediment elevation at the face of the dam based on the most recent topographic survey is at elevation of 2,167 feet above msl (following the 2017 survey).

2.3.6 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 but are not located within the boundaries of the newly designated San Gabriel Mountains National Monument. BTR is operated by the LACFCD under an existing statutory easement from the United States. Continued operation of Maple Canyon SPS requires a new SUP to be issued by the USFS (MM LUP-1). Maple Canyon SPS is designated as a sediment placement location per the USFS Land Management Plan.

BTR and Maple Canyon SPS have an open space resource designation of "Federal Land" in the County General Plan Open Space Resources Policy Map, and a zoning designation of "W" (Watershed) in the County's Zoning Map (LACDRP 2017). 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 2005b).[8]

[7] 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 A-1 (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).

[8] 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 2005b). 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 2005b).

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 Dam Operator's home 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 not in use. A helipad is located just northwest of the dam and is used for emergency firefighting 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 retrieve 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 east. 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 west 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 southwest. 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

On-Site Facilities at Big Tujunga Dam

Exhibit 2-3

Big Tujunga Reservoir Sediment Removal Project

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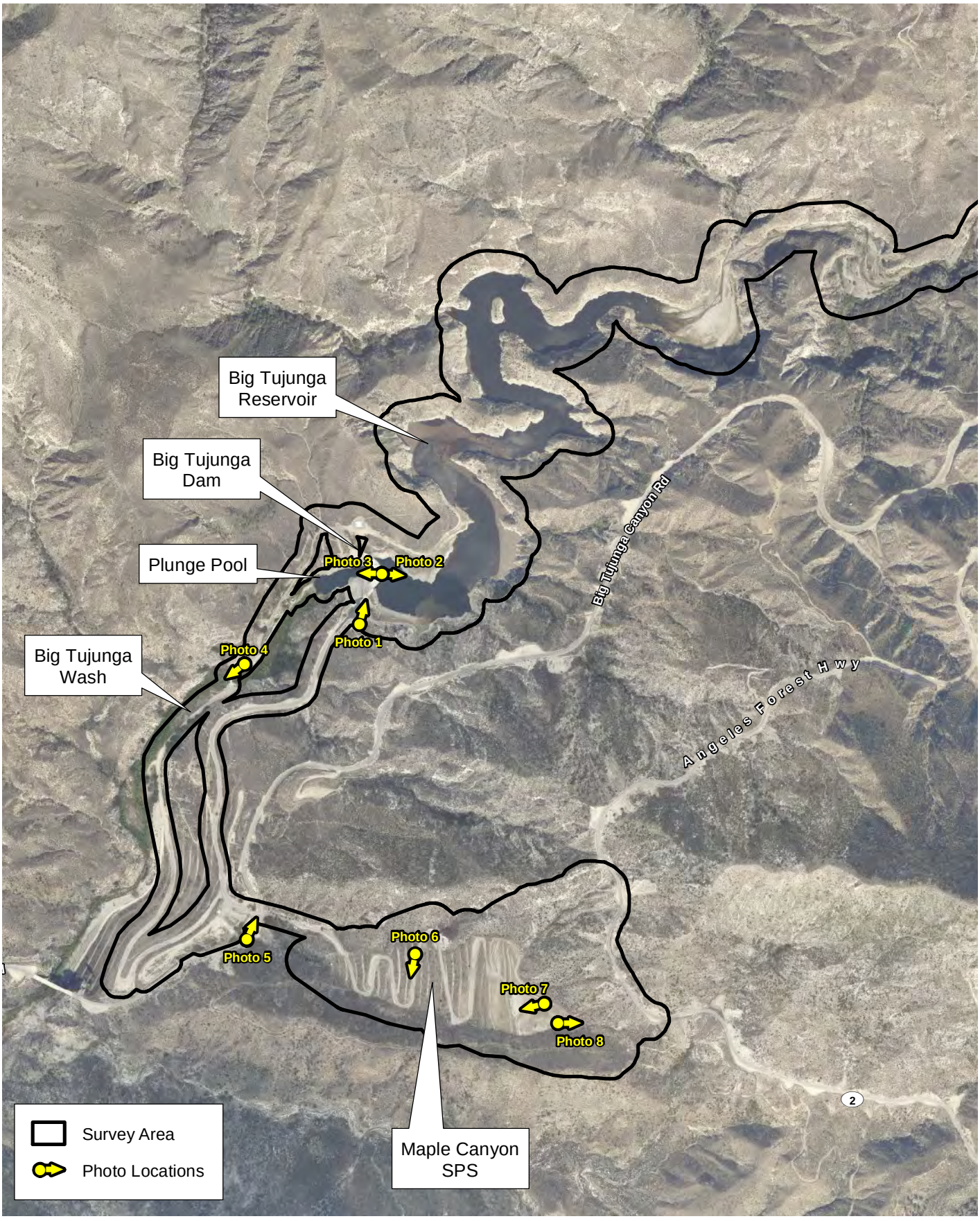

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Photograph Locations

Exhibit 2-4

Big Tujunga Reservoir Sediment Removal Project

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Photo 1: Photo depicts BTR dam structure looking north.

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

Photo 3: Photo depicts plunge pool west 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 southwest.

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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.

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.

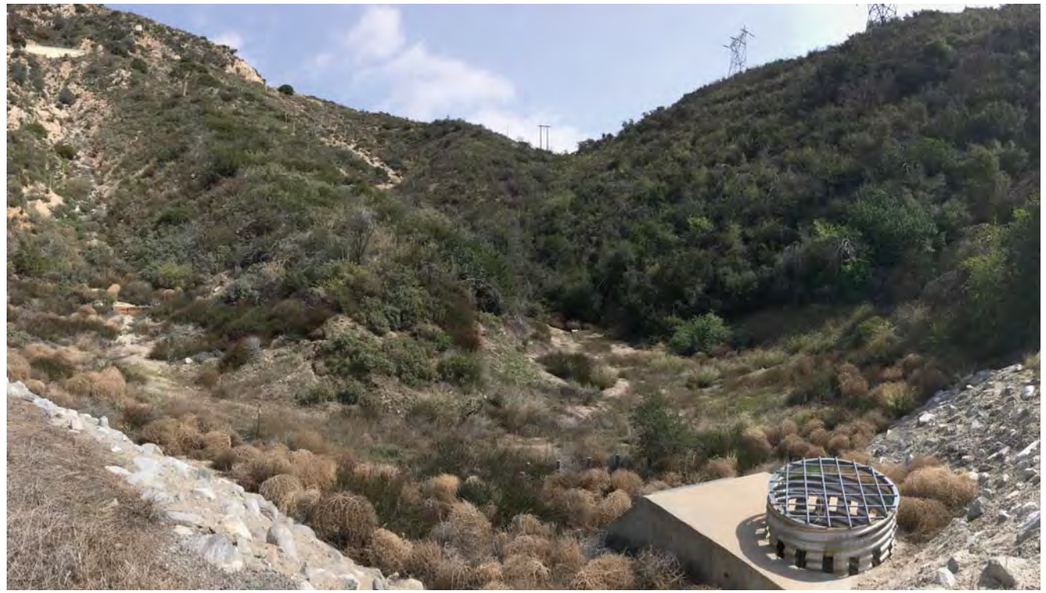

Photo 8: Photo depicts remaining capacity in far eastern edge of Maple Canyon SPS, looking east.

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Site Photographs

Exhibit 2-4B

Big Tujunga Reservoir Sediment Removal Project

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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.

2.3.7 BIOLOGICAL RESOURCES

Exhibits 4-4A and 4-4B, from Section 4.4, Biological Resources, depict the vegetation communities in the Project area. Upstream of BTR, Big Tujunga Creek consists of dry wash with patches of scale broom scrub, white alder grove–California sycamore woodland, white alder grove–willow thicket, California sycamore woodland–red willow thicket, black willow thicket, arroyo willow thicket, sandbar willow thicket, mule fat thicket, smartweed-cocklebur patch, and freshwater seep. The BTR is entirely open water. The existing access roads are mapped as disturbed (unvegetated) and are bordered by annual brome grassland, California buckwheat scrub, disturbed California buckwheat scrub, birch leaf mountain mahogany chaparral, chamise chaparral, chamise chaparral–thick leaf yerba santa scrub, hoary leaf ceonothus chaparral, bigcone Douglas fir–canyon live oak chaparral, native plantings, and non-native plantings. The upper portions and outer edges of Maple Canyon SPS consist of laurel sumac chaparral, chamise chaparral, scrub oak chaparral, and cliffs with the central portion dominated by annual brome grassland, California buckwheat scrub, and native plantings. The lower portion of Maple Canyon SPS consists of coast live oak woodland and thick leaf yerba santa scrub. Many of these vegetation types were burned in the 2009 Station Fire but are now recovered or recovering.

"Critical Habitat"[9] is designated for the Santa Ana sucker (*Catostomus santaanae*) downstream of the dam and including a portion of the plunge pool. The Santa Ana sucker is a federally Threatened species 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. Santa Ana sucker Critical Habitat is depicted on Exhibit 4-7, Critical Habitat, in Section 4.4, Biological Resources.

Critical Habitat is designated for the arroyo toad (*Anaxyrus californicus*) upstream of BTR. The arroyo toad is a federally Endangered species known to occur upstream of BTR. It is not expected to occur in the lower portion of BTR because it does not meet the preferred habitat requirements of the arroyo toad (i.e., shallow washes). It is not expected to occur downstream of BTR because it is believed to be extirpated from this area. Arroyo toad Critical Habitat is shown on Exhibit 4-7, Critical Habitat, in Section 4.4, Biological Resources.

Although there is no Critical Habitat designated in the Project area, the federally and State Endangered least Bell's vireo (*Vireo bellii pusillus*) also occurs upstream of BTR and also has potential to occur downstream of BTR. It is not expected to occur in the lower portion of BTR because it does not meet the preferred habitat requirements of the least Bell's vireo (i.e., lacks riparian scrub habitat).

[9] "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).

Although not federally or State listed, Greata's aster (*Symphyotrichum greatae*) is considered Threatened and Endangered in California and elsewhere by California Native Plant Society (CNPS),), and it occurs upstream and downstream of BTR.

Maple Canyon SPS does not contain any designated Critical Habitat areas, and it does not contain habitat for any of the species mentioned above.

Exhibit 4-6, in Section 4.4, Biological Resources, shows all special status species locations in the Project's study area.

The LACFCD 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. The LACFCD is also pursuing a Habitat Conservation Plan (HCP) under Section 10 of the Federal Endangered Species Act (FESA) for Big Tujunga Dam's Operations and Maintenance, including sediment removal projects.

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SECTION 3.0 PROJECT DESCRIPTION

The LACFCD proposes to conduct restoration-related activities at BTR, which includes 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 maintain the capacity of the reservoir and protect the capabilities of the dam's outlet works. Reservoir capacity and operability of the outlet works are necessary to protect life and property by attenuating storm water flow peaks and to capture locally-generated water to support the region's water supply. The proposed Project would ensure the operating capabilities of the dam's outlet works to contain future storm water flows, debris, and sediment, and to enable release of captured storm water for flood attenuation, and downstream water conservation.

As of the latest survey conducted in September 2017, BTR contains approximately 2.1 mcy of sediment, but future storms could rapidly increase the amount of sediment deposited behind the dam due to the recovering nature of the upstream watershed resulting from the 2009 Station Wildfire. Storm water runoff from watersheds recovering from a burn 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 a 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). A DDE is defined as the quantity of sediment produced by a saturated watershed significantly recovered from a burn (after four years) as a result of a 50-year, 24-hour rainfall amount according to LACFCD's Sedimentation Manual. The DDE for the BTR is approximately 6.9 mcy.

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 2.1 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. The actual amount of sediment removal beyond the existing 2.1 mcy would depend on the amount of sediment deposition in BTR in the coming years.

3.1 PROJECT ACTIVITIES AND SCHEDULE

3.1.1 PROJECT SCHEDULE

Sediment excavations are anticipated to begin approximately April 16, 2022 and would continue until all sediment above the reservoir bottom is removed, or five years, whichever comes first. 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); work could continue past October 14 until the first major storm is forecast, providing sufficient time for demobilization. Construction and operational impacts (i.e., how the dam would be operated during the Project) are considered the same for the Project. Double-bottom belly dump trucks or off-highway trucks would be mobilized to the Project site at the beginning of the non-storm season and would stay on-site until the sediment removal activities are concluded for that season, unless repairs, emergency, or other unusual needs arise that necessitate removing the trucks from the site. Sediment placement activities at Maple Canyon SPS would occur concurrent with sediment

removal activities from BTR. It should be noted that vegetation clearing and site preparation at Maple Canyon SPS could occur prior to April 15, and sediment placement activities at SPS could occur after October 15. No sediment removal activities would occur from the first major storm through the remainder of the storm season (approximately October 15 to April 15). During the storm season, the dam would be operated following normal flood control operations.

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 during and after large storm events, to prevent/minimize downstream flooding and ensure adequate capacity within BTR for the next storm event. As the storm season proceeds, additional water may be held in the reservoir to provide for water conservation and supplemental releases. During the storm seasons preceding Project activities (i.e., sediment removal), supplemental water will not be held in the reservoir, and dam operators will release water from the dam with a goal to reach an elevation of 2,188 feet above msl by April 15. Water that would be released as part of normal flood control and water conservation operations would not be considered dewatering activities associated with the Project. Dewatering activities (i.e., release of water until the reservoir is dry) would continue during each year of sediment removal. The starting elevation on April 15 may vary each year based on rainfall patterns, but the goal will be for the reservoir elevation to be at 2,188 feet above msl on this date.

Public Work's Contractor would be responsible for three initial tasks: (1) installing a bypass line to divert inflow from the reservoir upstream of the excavation area to downstream of the dam into Big Tujunga Creek; (2) dewatering the plunge pool and relocating fish; 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 between 1 to 6 weeks, depending on in-flow, status of the plunge pool, condition of the access ramps, etc., and are discussed in detail, below.

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. 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 construction activities.

The bypass would include a temporary inlet structure in the upstream area of the reservoir to capture and direct the upstream creek flows into the bypass line; downstream of the bypass, the stream would be dry to permit construction work below the waterline. 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 Rehabilitation 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. Biologists would relocate any special status fish and aquatic

herpetofauna species prior to dewatering the plunge pool (see MM BIO-4, MM BIO-7, and MM BIO-8) per avoidance and minimization measures. 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 to facilitate its use as a sedimentation basin. Any sediment removed from the plunge pool would be deposited within Maple Canyon SPS. During sediment removal activities, sediment that accumulates within the plunge pool would be removed periodically, as necessary.

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 and would be designed to tolerate the maximum outflow encountered during dewatering. 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.

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 Public Works' database of daily releases in the month of April from 1998 through 2012, determined the inflow that can be expected during wet, average, and dry years over the duration of the Project.[10] These flows were then used to calculate the rise in reservoir elevation over the five days of pre-dewatering activities. 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. In a dry year, the rise would be negligible.

The following discussion presents dewatering schedules under various scenarios:

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. A Dewatering Schedule was developed for a wet year scenario by examining historic flows during wet years (i.e., rainfall greater than 30 inches). The average inflow to BTR during the months of April and May 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.

[10] The wet year data is the average inflow during the month of April in the wettest three years between 1999 and 2012. See Appendix B-9. The dry year average inflow is the average inflow in April during the driest year between 1999 and 2012. 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[11]	2,202	Peak water releases from dam to reach minimum elevation [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 reservoir level decrease (Chimienti 2012).

Source: Mahulikar 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 two 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 2,225 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 generators or 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

[11] The Big Tujunga Habitat Conservation Plan (HCP) covering long-term operation and maintenance of the dam is currently under development. Although water conservation releases of up to 250 cfs during the non-storm season are being discussed with the USFWS as part of the HCP, Public Works is proposing 180 cfs as the maximum release during annual dewatering of the pending Reservoir Restoration Project to be consistent with the project description in previous environmental documentation for the Project.

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 reservoir level decreases (Chimienti 2012).

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 HDPE 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 the sediment level. In addition, a 5-ft by 5-ft 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 could require a minimum of 25 days; however, only two days would include releases as high as 180 cfs. It should be noted that these time frames are estimates 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 minimize impacts to fish and other aquatic resources downstream of the plunge pool in Big Tujunga Creek.

The average inflow to BTR during the month of April in an average rainfall year (i.e., 22 to 30 inches of rainfall) 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 minimize impacts to fish and other aquatic resources downstream of the plunge pool in Big Tujunga Creek.

The average inflow to BTR 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 FROM BTR

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 at BTR would continue to occur until the remaining ultimate capacity of Maple Canyon SPS has been exhausted, until the required reservoir capacity is achieved, or the five-year Project duration is complete.

Workdays are anticipated to include approximately eight hours per day of equipment activity, assuming a maximum of 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 shall be limited to approximately 400 round-trip truck trips within a given day (see MM AQ-1). Additionally, the LACFCD's Contractor must document the number of round-trip truck trips for each day of sediment removal and maintain an accurate log of daily truck trips and mileage per truck and have the daily log available for review and confirmation by the LACFCD upon request.

It is anticipated that double-bottom belly dump trucks or off-highway trucks with capacities of 18 cy per load would be used to transport the sediment from BTR to Maple Canyon SPS. The trucks would be mobilized to the Project site at the beginning of the non-storm season and would stay on-site until the sediment removal activities are concluded for that season, unless repairs, emergency, or other unusual needs arise that necessitate removing the trucks from the site. The dump trucks would then leave the Project site at the end of the non-storm season. Therefore, the daily dump truck trips would be limited to traveling between the BTR and Maple Canyon SPS, and the truck drivers and other employees would drive to the Project site each day in their personal/work vehicles. During the peak construction period (which would occur from September 15 to October 14 yearly, during sediment removal activities), there would be a peak of approximately 97 personal/work vehicles traveling each day to and from the Project site. Work would be conducted during the non-storm season between approximately April 16 to October 14 (or until the first forecasted storm). Work would typically be conducted Monday through Friday on a weekly basis; however, this Revised and Recirculated IS/MND has assumed work may occur Monday through Saturday for a conservative analysis.

All off-road equipment would be required to be Tier 4[12] to significantly reduce air quality pollutants (see MM AQ-2). Bulldozers and other heavy equipment would be operated continuously at Maple Canyon SPS in order to spread and compact the sediment during the non-storm season. The access roads behind the dam on either side of the reservoir would be rehabilitated 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.

[12] 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 4 Final 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 4 Final emission limits shown in the BACT Guidelines.

Maple Canyon SPS is the closest active 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 travel through the approximate 0.7-mile loop behind the dam, of which approximately 0.4 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 5 miles total. Of this access road loop, approximately 2.15 miles are currently unpaved. The unpaved roadway would be paved (with the exception of 0.4-mile unpaved portion of the access road in the reservoir) in order to reduce fugitive dust emissions (see MM AQ-3 and MM AQ-4). The existing approximately three miles of paved access roads would be maintained in their existing condition. For stockpiling of aggregate material, the full trucks would travel on the same route (as if traveling to Maple Canyon SPS), but before crossing Big Tujunga Canyon Road to Maple Canyon SPS, the trucks would turn into the staging area west of Maple Canyon and Big Tujunga Canyon Road, as shown on Exhibit 2-1. Trucks would travel on a 20-ft access road where 12 stockpiles would be created to temporarily store up to approximately 28,000 cy of aggregate material.

Coast live oak (*Quercus agrifolia*) trees are present along portions of the access road between the reservoir and Maple Canyon SPS. Though not anticipated, if any coast live oak tree branches or roots need to be trimmed or maintained during Project implementation, it would be done under the direction of a certified Arborist to ensure that it would avoid or minimize adversely affecting the health and viability of the oak trees.

3.1.5 SEDIMENT PLACEMENT AT MAPLE CANYON SPS

Prior to any sediment placement, areas within the fill footprint of Maple Canyon SPS would be cleared of vegetation and grubbed. Sediment brought to Maple Canyon SPS would be dumped by trucks 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., 2:1) would be incorporated as an additional measure to reduce erosion. Double-bottom belly dump trucks or off-highway trucks and construction equipment would be mobilized to the Project site at the beginning of the non-storm season and would stay on-site until the sediment removal activities are concluded for that season, unless repairs, emergency, or other unusual needs arise that necessitate removing the trucks from the site. During the storm season, the construction equipment may be temporarily stored at the Maple Canyon SPS.

Maple Canyon SPS currently holds approximately 3.0 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 8.0 acres currently contains sediment from previous projects; this would eliminate the remaining capacity of the SPS. If only 2.1 mcy is removed from BTR, fewer acres of Maple Canyon SPS would be impacted, which would leave 2.3 mcy of remaining capacity for future projects.

The design for Maple Canyon SPS is based on Public Works' 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, intercept any natural seepage from the underlying strata, and collect and convey these waters through an underground pipe to discharge into Big Tujunga Wash approximately 4,000 feet downstream of the dam. Debris basins were also

installed at the upstream end of each underground drainage pipe to catch eroded sediment from the natural drainages. During Project implementation, these drainage facilities would be extended into new fill areas of Maple Canyon.

3.1.6 REVEGETATION AND CLOSURE OF MAPLE CANYON SPS

Previous revegetation efforts performed at the completion of sediment placement activities at Maple Canyon SPS were conducted in full compliance with USFS' *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document, which was approved in conjunction with the 1981 EA and SUP. However, the USFS-issued 1981 SUP is expired. In 2012, the LACFCD prepared a draft *Maple Canyon Sediment Placement Site Revegetation and Ultimate Completion Guidance* document that set forth a plan for closure of Maple Canyon SPS (Public Works 2012).

In 2020, the USFS prepared a *Draft Maple Canyon Sediment Placement Site Revegetation Plan* to replace the 2012 plan previously prepared by LACFCD in connection with the new SUP for Maple Canyon SPS. The *Draft Maple Canyon Sediment Placement Site Revegetation Plan* is currently in review by the USFS. As such, the document is not available for public review at this time.

The revegetation plan describes in detail the revegetation activities to restore biological functions to the hillsides; reduce visual impacts; and control erosion at Maple Canyon SPS. The revegetation plan includes the application of locally-collected native seed mix; installation of container stock plants, such as trees and native shrubs; and temporary irrigation to ensure appropriate establishment of the vegetation. 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 SPS and would be collected from the Angeles Forest, Zone 993. Revegetation efforts at Maple Canyon SPS would require occasional water truck trips from off-site to fill the existing 50,000-gallon water tank at Maple Canyon SPS for use in irrigation. The plan requires the LACFCD to provide annual monitoring reports to the USFS to document the success of the revegetation efforts.

It is possible that sediment placement at Maple Canyon SPS would occur in two (or more) phases if less than the remaining 4.4 mcy capacity of the SPS is placed during the Project. Phase 1 would include the Project's removal (currently approximately 2.1 mcy of sediment and aggregate). In order to reduce the potential for fugitive dust, the 2.1 mcy of sediment, (approximately 10 acres of placed sediment) would be revegetated as deemed acceptable by the USFS. If phasing is required, then Phase 2 would be completed at a later date and may include multiple subphases to place the remaining SPS capacity of 2.3 mcy of sediment and aggregate. Upon completion of all sediment placement, LACFCD would revegetate 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 and any subsequent phases/subphases are complete, the entire fill area would be revegetated in accordance with the requirements of the USFS SUP and revegetation plan.

3.1.7 TEMPORARY STOCKPILE STAGING AREA

Sediment removal operations would also involve the onsite crushing and stockpiling of rock and gravel materials that are determined to be suitable for beneficial re-use within the Forest. During sediment removal activities, some large rocks would be set aside within the dewatered reservoir; processed/crushed to reduce the size of the rocks; and sorted by size for stockpiling of up to 28,000 cubic yards (cy). This activity may occur during each year of sediment removal activity. Once the aggregate has reached a volume of approximately 28,000 cy from the crushing process, the stockpiles would not be replenished. Aggregate material may be stored at the staging area

west of Maple Canyon SPS (as shown on Exhibit 2-1) and would be available for future use by both Public Works' Stormwater Maintenance Division (SWMD) and Road Maintenance Division (RMD) for routine maintenance activities that are unrelated to the BTR Restoration Project. At the staging area, the aggregate would be arranged into 12 gravel cones, which would range in height, from approximately 14 to 41 feet, and in diameter, from 42 to 120 feet at maximum capacity. Exhibits 4-2A and 4-3A, Visual Simulation – Aggregate Stockpiles, in Section 4.1, Aesthetics of this IS/MND, depicts views of the proposed aggregate stockpiles from Big Tujunga Canyon Road. After the aggregate material stockpile has reached a volume of approximately 28,000 cy, all sediment (including aggregate material) removed from BTR would be deposited within Maple Canyon SPS. The stockpiles of aggregate would remain at the staging area until they are eliminated over time through various ongoing road and general maintenance activities. Because the rate at which the stockpiles will be used is unknown, and because the ultimate end-use of the aggregate material is not a part of this proposed Project, this Draft IS/MND considers the environmental impacts associated with the presence of the stockpiles on the Project site long-term. As provided in MM AES-1, LACFCD will ensure that the aggregate stockpiles located furthest to the west with the highest visibility from Big Tujunga Canyon Road be removed first. During the final year of sediment removal activities, whether or not activities last for the full five years, the LACFCD must ensure that all remaining stockpiles do not exceed a maximum height of 20 feet. If required in order to meet the 20-ft height restriction, the LACFCD must remove the necessary amount of aggregate from the stockpiles and deposit the aggregate within the Maple Canyon SPS prior to the conclusion of the Project activities. Implementation of MM AES-1 would ensure that impacts pertaining to visual character or quality of the surrounding area is less than significant.

3.1.8 OTHER MISCELLANEOUS IMPROVEMENTS

Other minor activities that would occur in conjunction with the proposed restoration activities include: (1) hydroblasting to flush a stilling well on the dam crest; (2) repair of the hydraulic sluicegate; (3) access road paving and repair of the culvert crossing; (4) slope protection measures adjacent to the spillway; (5) rehabilitating the northern access ramp to safely access the reservoir bottom; (6) installing a boat dock at the dam face; and (7) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering. These activities are described in more detail below.

In order to maintain the functionality of the existing stilling well that is located on the dam's crest, the stilling well would be hydroblasted to clear cement slurry that has accumulated within the pipe of the well. The LACFCD's Contractor would unplug the existing 4-inch pipeline and 10-inch pipeline so that the water inside the 10-inch vertical pipe within the dam structure would fluctuate with reservoir water elevation changes. While the reservoir is dewatered, the discharge from the hydroblasting of the stilling well would be discharged to the upstream face of the dam, and the water would be captured and stored into temporary water tanks that would be mobilized at the Project site. This process would last a couple of days and would occur once.

The sediment removal activities associated with the Project would expose the existing sluice gate hydraulic system, which is currently covered with sediment. In order to maintain functionality, portions of the existing sluice gate hydraulic system would be replaced. This activity would occur for approximately one month. All work would occur within the dam structure. The sluice gate hydraulic system would require the installation of new needle valves, ball valves, and modification and/or replacement of sections of the pipes within the system. All activities related to the repair of the sluice gate hydraulic system would be completed with hand tools, and no additional vehicles would be required.

On the existing access road downstream of the dam where the road crosses over the Big Tujunga Wash, a new concrete slab would be poured over the existing culvert crossing. This would be a one-time event that would occur before any large construction trucks/equipment would be allowed to cross the culvert. Additionally, prior to sediment removal activities, per the requirements set forth in Mitigation Measure (MM) AQ-3, the Project requires the paving of approximately 2.15 miles of haul road behind the dam in order to reduce fugitive dust from truck trips.

Between the plunge pool on the western side of the dam and the north access road, is an area of steep slopes that will be modified to minimize erosion of the naturally rocky slopes. The slope repair involves the import and placement of light rip-rap and crushed rock from the stockpile areas placed over a geotextile filter fabric on the face of the slope to repair existing slope erosion and prevent further degradation of the surface soils. The area of repair is adjacent to the existing spillway retaining wall to the south and the existing northern access road. This work is a one-time activity that is anticipated to occur over the course of approximately one month.

As one of the miscellaneous activities, boat dock installation would take place either in the final year of cleanout or when final grade is achieved at the face of the dam. The installation would occur over two weeks using hand tools, truck for transporting materials, and possibly a loader. The activity would involve installing anchor assemblies (four total) at elevations of 2,142 and 2,294 feet; assembling boat dock; and fastening wire rope to lower anchor assembly, through the ring of boat dock, and to upper anchor assembly (both sides).

As indicated above, the proposed activities also include creating a 2-ft by 2-ft opening through underwater coring. This minor activity would occur over the course of a week and would not occur simultaneously with hauling of sediment. A drill rig would likely be attached to the outside surface of the riser. Underwater divers would drill the opening on the riser a few feet above the reservoir bottom. The opening would be cored using 4-inch to 6-inch core drills. A slide gate would be installed at the opening to facilitate dewatering.

3.1.9 DEMOBILIZATION/STORM SEASON OPERATIONAL CHARACTERISTICS

During the years when the Project is occurring, BTR would continue to be operated according to standard operating guidelines during the rainy season from October 15 through April 15. Public Works' Contractor would demobilize from the reservoir before the first major storm (approximately October 15) of each year. 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 remobilize at the end of each storm season (April 15). 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)[13] due to the presence of "waters of the U.S." and "waters of the State" within the BTR 100 percent

[13] 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.

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

This Revised and Recirculated IS/MND is intended to serve as the primary environmental document pursuant to CEQA for actions associated with BTR Restoration 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 Revised and Recirculated 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	Scope/Applicability
USACE	Clean Water Act Section 404 Permit	Activities involving the discharge of dredge and fill material into “Waters of the U.S.”.
USFS	Special Use Permit (SUP)	Activities involving the placement of sediment at Maple Canyon SPS within the Angeles National Forest.
USFWS	Endangered Species Act Section 7 Consultation	Activities that have the potential to impact the Santa Ana sucker, arroyo toad, and the least Bell’s vireo.
RWQCB	Clean Water Act Section 401 Water Quality Certification	Same as USACE 404 Permit
CDFW	CA Fish and Game Code Section 1602 Streambed Alteration Agreement	Activities involving diversions of flow and changes to the bed, channel, or bank of a river, stream, or lake.
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.		

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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 Restoration Project and identifies whether the Project is expected to have potential significant impacts.

1. Project Title: Big Tujunga Reservoir Restoration Project

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

3. Contact Person and Phone Number: Los Angeles County Flood Control District
   Los Angeles County Public Works
   Stormwater Engineering Division – Sediment Management
   P.O. Box 1460
   Alhambra, California 91802-1460
   reservoircleanouts@pw.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 Public Works
   Stormwater Engineering Division – Sediment Management
   P.O. Box 1460
   Alhambra, California 91802-1460

6. General Plan Designation/Zoning: Open Space—Federal Lands

7. Description of Project: The proposed Project involves excavations of up to 4.4 million cubic yards (mcy) of sediment within BTR and the placement of sediment within Maple Canyon SPS up to its capacity. Sediment removal would occur via hauling trucks over the course of up to 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 29.7 acres within Maple Canyon SPS and would eliminate the remaining capacity of the facility. Aggregate material, up to 28,000 cubic yards (cy) would be stockpiled at a staging area for reuse within the Forest. Various minor repairs/replacements would be made at the dam structure.

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

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
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
Except as provided in Public Resources Code Section 21099, 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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☒	☐	☐
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, north and 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 Natural Resources Element states that "[s]cenic resources consist of designated scenic highways and corridors (or routes), and hillsides and ridgelines". These resources include the coastline, mountain vistas, and other scenic features of the region, such as the San Gabriel Mountains, Verdugo Hills, Santa Susana Mountains, Simi Hills, Santa Monica Mountains, and Puente Hills (LACDRP 2015a).

The County contains three State scenic highways (LACDRP 2015a):

1. Angeles Crest Highway (State Route [SR] 2) within the Angeles National Forest, from 2.7 miles north of Interstate 210 (I-210) to the San Bernardino County line.
2. Mulholland Highway, in two locations; from California 1(CA-1) to Kanan Dume Road, and from west of Cornell road to east of Las Virgenes Road.
3. Malibu Canyon—Las Virgenes Highway, from CA-1 to Lost Hills Road.

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.

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 2017). As previously discussed, the Project site is not visible from SR-2. I-210, from U.S. 101 to SR 126 is an Eligible State Scenic Highway (not Officially Designated). I-210 is approximately 5.4 miles south of the Project site, and neither BTR nor Maple Canyon SPS are visible from the freeway.

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 2005a).

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 2005b).

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

Regulatory Requirements

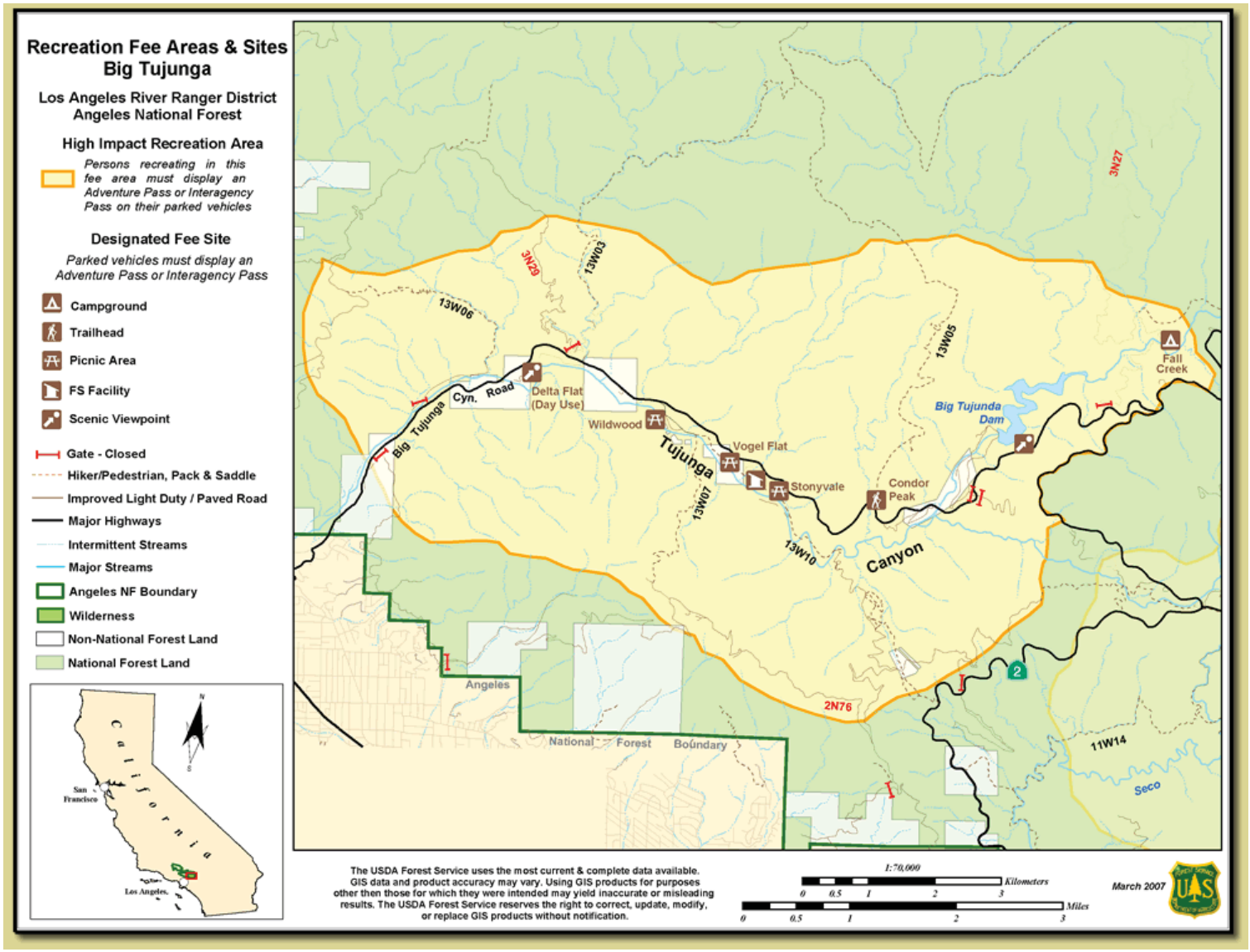
None required.

Impact Discussion

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

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 of the upstream side of the dam into BTR would be available to those who choose to stop at the Scenic Viewpoint along Big Tujunga Canyon Road, as identified in Exhibit 4-1. Unless



USFS Recreation Areas

Exhibit 4-1

Big Tujunga Reservoir Sediment Removal Project

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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 alignment of Big Tujunga Canyon Road in the vicinity of BTR; and the intervening vegetation and topography. Because sediment is below the water surface, the removal of sediment would have no long-term impact to scenic vistas and the visual character of BTR from the Scenic Viewpoint and from views along Big Tujunga Canyon Road. In the storm season of each year, and after the completion of the proposed Project, the sediment bottom of the BTR would be covered by surface water.

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. Additionally, in 2020, the USFS prepared a Draft *Maple Canyon Sediment Placement Site Revegetation Plan* to replace the plan previously prepared by LACFCD in coordination with the new SUP for Maple Canyon SPS. The *Draft Maple Canyon Sediment Placement Site Revegetation Plan* is currently in review by the USFS. As such, the document is not available for public review at this time.

The revegetation plan describes in detail the revegetation activities to restore biological functions to the hillsides; reduce visual impacts; 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 growing period, steps will be taken to enhance the visual aspects of Maple Canyon SPS from the manmade improvements on the site. The *Draft Maple Canyon Sediment Placement Site Revegetation Plan* would ensure that aesthetic impacts at Maple Canyon SPS would be less than significant and no mitigation required. Therefore, sediment removal and placement activities within BTR and Maple Canyon, and the revegetation and closing of Maple Canyon SPS would not have a substantial adverse impact on a scenic vista.

Other minor activities that would occur in conjunction with the proposed sediment removal activities include: (1) hydroblasting to flush a stilling well on the dam crest; (2) repair of the hydraulic sluicegate (3) access road paving and repair of the culvert crossing; (4) slope protection measures adjacent to the spillway; (5) the temporary rehabilitating the northern access ramp to safely access the reservoir bottom; (6) installing a boat dock at the dam face; and (7) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering. The hydroblasting and repair of the sluicegate are activities that would occur largely within the dam structure and with the exception of small trucks and equipment, would not be visible or have any impact on scenic vistas. The rest of the activities may be slightly visible from public views along Big Tujunga Canyon Road, but not such that would result in a significant visual impact.

Therefore, the proposed Project would not have a substantial adverse effect on a scenic vista. Temporary dewatering of BTR and sediment removal activities would be visible from the Scenic Viewpoint, but impacts would not alter the viewshed or topography, and all Project-related impacts would be temporary and less than significant 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?

No Impact. The nearest designated State scenic highway is SR-2, located approximately 1.2 miles south-southeast of Maple Canyon SPS at its nearest point. As previously discussed, the proposed Project would not be visible from SR-2 due to the presence of intervening trees and mountainsides. Thus, there would be no impacts to scenic resources or a scenic highway.

c) Would the project in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant with Mitigation. 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 only 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 between April 16 and October 14 annually for up to five years, depending on the amount of sediment removed. As stated under Threshold 4.1[a], 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 alignment 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 BTR.

During sediment removal activities, dump trucks would be regularly travelling across Big Tujunga Canyon Road between BTR and Maple Canyon SPS. Travelers, bicyclists, and hikers on Big Tujunga Canyon Road would see these trucks and flag person(s), per requirements of MM TRA-1 for a Traffic Control Plan, for only short periods of time as they pass through the area. These construction-related changes in views would be short-term and temporary, and construction trucks and vehicles would not alter the visual character of the area. Also, worker trucks and employees would leave at the end of each day, and all equipment would be removed at the beginning of each storm season (i.e. sediment removal and placement activities would cease during the rainy season of each year).

The stockpiling/staging area for aggregate material adjacent to Big Tujunga Canyon Road is shown on Exhibit 2-1. As described in Section 3.1.6 of this Revised and Recirculated IS/MND, aggregate removed from BTR would be arranged into 12 gravel cones, which would range in height, from approximately 14 to 41 feet tall, and in diameter, from 42 to 120 feet wide at maximum capacity. The first stockpiles that would be visible on the southwesterly portion of the staging area, cones #1 and #2, would be approximately 39 and 41 feet tall, respectively. Other stockpile cones that would exceed 30 feet in height include cones #9, #10, and #11. All other stockpile cones would be between 14 to 26 feet in height.

Approximately 28,000 cy of aggregate material would be removed from BTR during sediment removal activities and would be trucked to the staging area. Aggregate crushing within BTR would occur throughout the non-storm season (i.e., April 16 through October 14) throughout the entirety of Project implementation. However, only 28,000 cy of aggregate would be stockpiled at the staging area over the course of the annual sediment removal activities. After the aggregate material stockpile reaches a volume of 28,000 cy, all sediment (including aggregate material) removed from BTR would be deposited within Maple Canyon SPS.

The stockpiles of aggregate would remain at the staging area temporarily, until they were eliminated over time through various ongoing road and general maintenance activities within the Forest. However, because the rate at which the stockpiles would be used is unknown, and because the ultimate end-use of the aggregate material is not a part of this proposed Project, this Revised and Recirculated IS/MND considers the environmental impacts associated with the presence of the stockpiles on the Project site for the long-term.

The bridge that crosses Big Tujunga Canyon Road has views of the southern portions of the access road and the terraced slopes adjacent to the staging area. The proposed Project would use this staging area for the temporary stockpiling of aggregate materials. Currently, this staging area is flat and graded with no vegetation and is directly adjacent to Big Tujunga Canyon Road. These stockpiles would be visible from drivers who stop at parking area just south of the Big Tujunga Canyon Road bridge that crosses over the Big Tujunga Creek, as well as from drivers continuing northward along Big Tujunga Canyon Road.

Exhibit 4-2A, Visual Simulation – Stockpiles from Bridge, depicts views of the aggregate stockpiles for visitors at the parking area just south of the Big Tujunga Canyon Road bridge. Similarly, Exhibit 4-3A, Visual Simulation – Stockpiles from Big Tujunga Canyon Road, shows the view of the stockpiles for drivers going northward along Big Tujunga Canyon Road adjacent to the staging area. These simulations depict the existing condition and the pre-mitigated condition when all stockpiles would be at their maximum size and height. These two locations provide the most visibility for the stockpiles; there are no views of the staging/stockpile area from the Scenic Overlook or Big Tujunga Canyon Road north of the dam.

As shown in Exhibit 4-2A, the stockpiles would be visible from the bridge area, although they would not be a primary feature in the viewshed. As shown in Exhibit 4-2B, the stockpiles would be more visible for drivers on Big Tujunga Canyon Road traveling northward adjacent to the staging area. In this location, the stockpiles would be nearer to the roadway and a more prominent feature. The stockpiles would consist of stones, gravel, rocks, and other aggregate obtained during sediment removal activities, which are earthen materials that blend with the surrounding rocky landscape in both color and texture. The aggregate would be obtained from the BTR and consist of materials that are from the natural slopes and drainages of the Big Tujunga Creek watershed within the Forest. As such, they would not appear out of character for the area, which consists of rocky steep slopes and naturally vegetated areas. Additionally, the stockpiles would be placed adjacent to graded switchback access roads, which are in the context of other developed features, including the dam, spillway, BTR office and control house, and parking lots.

However, due to the size and height of some of the stockpiles (up to 41 feet tall) and because their elimination cannot be predicted within the 5-year construction period, the visual impacts of the stockpiles must be considered as a long-term feature. Because the Project would not dictate the rate at which the stockpiles are depleted over time, the potential visual impacts of the stockpiles being located at the Project site indefinitely could result in potentially significant visual impacts related to the visual character or quality of the surrounding area prior to mitigation.

Therefore, implementation of MM AES-1 is required to reduce the impacts to the visual character of the surrounding area. MM AES-1 requires that the LACFCD ensure that the aggregate stockpiles located furthest to the west with the highest visibility from Big Tujunga Canyon Road must be removed first. During the final year of sediment removal activities, whether or not activities last for the full 5 years, the LACFCD must ensure that all remaining stockpiles do not exceed a maximum height of 20 feet. If required in order to meet the 20-ft height restriction, the LACFCD must remove the necessary amount of aggregate from the stockpiles and deposit the aggregate within the Maple Canyon SPS prior to the conclusion of the Project activities. This post-mitigation condition is depicted in Exhibit 4-3A, Visual Simulation – Post-Mitigation Stockpiles from Bridge

Existing Conditions

Proposed Conditions

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Visual Simulation – Stockpiles from Bridge

Exhibit 4-2A

Big Tujunga Reservoir Sediment Removal Project

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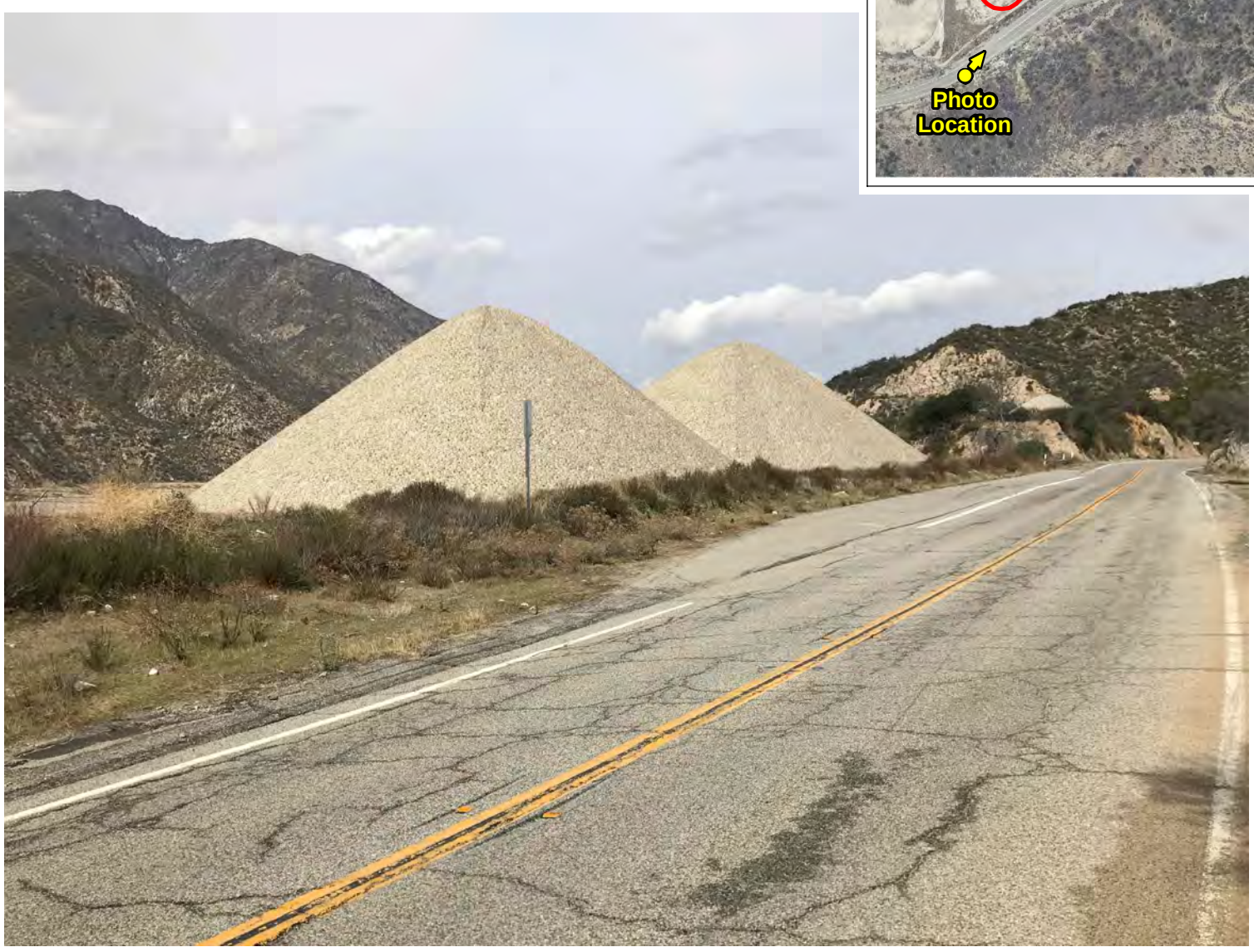
Existing Conditions



Proposed Conditions

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Visual Simulation – Stockpiles from Big Tujunga Canyon Road

Exhibit 4-2B

Big Tujunga Reservoir Sediment Removal Project

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and Exhibit 4-3B, Visual Simulation – Post-Mitigation Stockpiles from Big Tujunga Canyon Road, which depict the most prominent views of the stockpiles in the post-mitigation conditions with the maximum height of 20 feet. As shown, the mitigated views substantially reduce the visibility and prominence of the stockpiles to viewers at the bridge as well as drivers along Big Tujunga Canyon Road. Additionally, MM AES-1 requires that the most visible stockpiles are eliminated first, which would first reduce the visibility of cones #1 and #2. With implementation of MM AES-1, impacts to the visual character or quality of the surrounding area would be reduced to less than significant.

Maple Canyon SPS is designated and approved for sediment placement within the USFS Land Management Plan for the Angeles National Forest (USFS 2005b). 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 29.7 acres of land to be filled, of which 8.0 acres currently contain sediment from previous projects.

Additionally, as required through MM LUP-1, the USFS' *Draft Maple Canyon Sediment Placement Site Revegetation Plan* will be required for placement of sediment from the Big Tujunga Reservoir and revegetation within the Maple Canyon SPS. The *Draft Maple Canyon Sediment Placement Site Revegetation Plan* is currently in review by the USFS. As such, the document is not available for public review at this time.

This revegetation plan would regulate revegetation activities after completion of sediment placement to restore biological functions to the hillsides, reduce visual impacts, and control erosion at the SPS. The revegetation plan would require the LACFCD to provide annual monitoring reports to the USFS to ensure the success of the revegetation efforts and also require the enhancement of the visual aspects of Maple Canyon SPS, such as the removal of all irrigation and supporting water tanks infrastructure. Implementation of MM LUP-1 would ensure that aesthetic impacts at Maple Canyon SPS would be less than significant.

As stated under Threshold 4.1[a] above, recreational visitors 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. Therefore, sediment removal and placement activities within BTR and Maple Canyon would not substantially degrade the visual character or quality of the area.

As stated under Threshold 4.1[a] above, other repair-related activities that would occur in conjunction with the proposed sediment removal activities, including (1) hydroblasting to flush a stilling well on the dam crest; (2) repair of the hydraulic sluicegate (3) paving access road and repairing the culvert crossing; (4) incorporating slope protection measures adjacent to the spillway; (5) rehabilitating the northern reservoir access ramp to safely access the reservoir bottom; (6) installing a boat dock at the dam face; and (7) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering, would not be visible from public views along Big Tujunga Canyon Road.

As detailed above, with incorporation of MM AES-1 and MM LUP-1, potential impacts to the visual character of the Project site and surrounding area due to aggregate stockpiles, the placement of

Existing Conditions

Proposed Conditions

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Visual Simulation – Post-Mitigation Stockpiles from Bridge

Exhibit 4-3A

Big Tujunga Reservoir Sediment Removal Project

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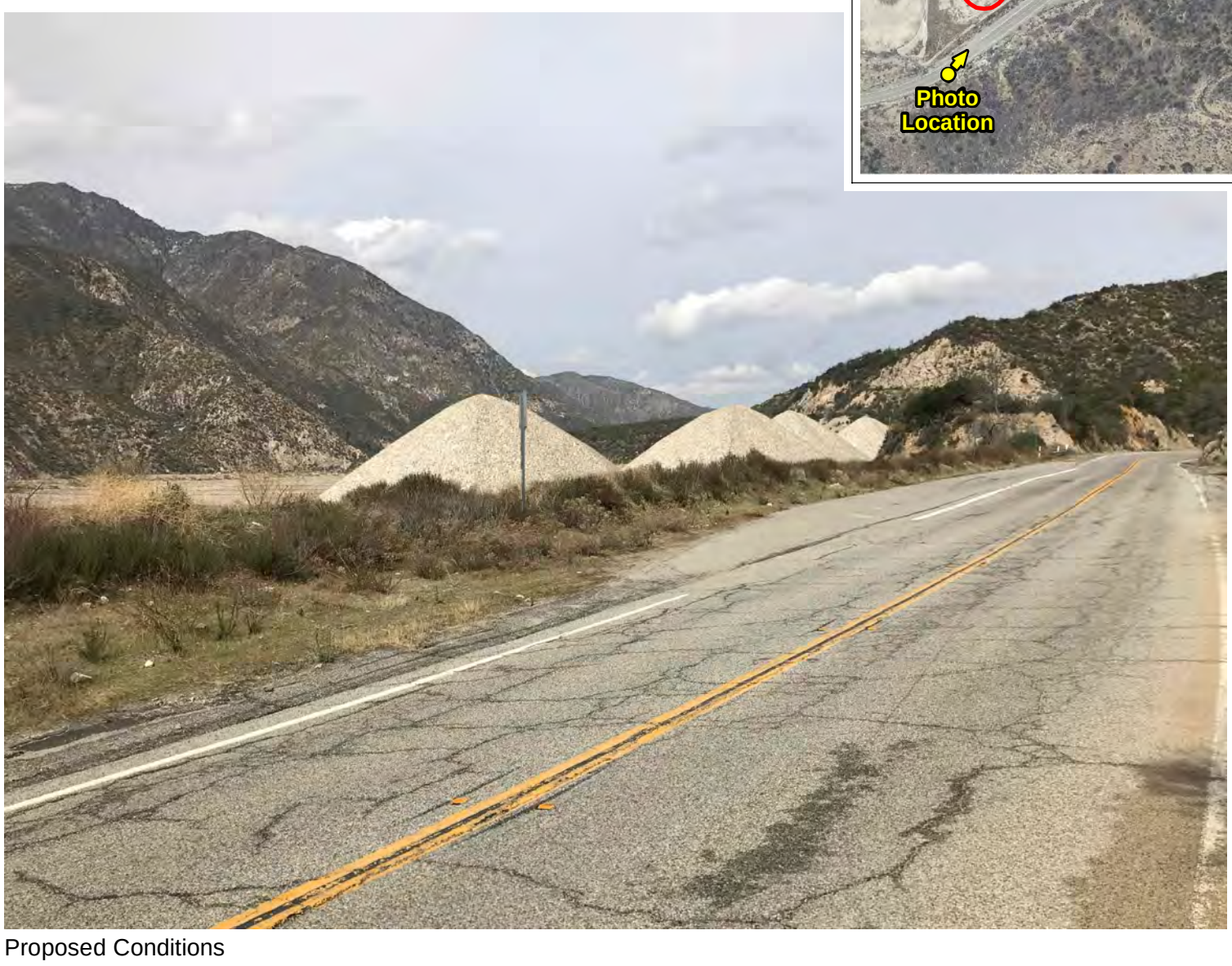
Existing Conditions



Proposed Conditions

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Visual Simulation – Post-Mitigation Stockpiles from Big Tujunga Canyon Road

Exhibit 4-3B

Big Tujunga Reservoir Sediment Removal Project

PSOMAS

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sediment within Maple Canyon SPS, and the revegetation and closing of Maple Canyon SPS would be reduced to less than significant.

Regarding applicable zoning and other regulations governing scenic qualities within urbanized areas, the Project is not located in an urbanized area, it would not conflict with applicable zoning and other regulations governing scenic quality. No impacts would result, and no mitigation is required.

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.

4.1.3 MITIGATION MEASURES

MM AES-1 The LACFCD shall ensure that the aggregate stockpiles located furthest to the west with the highest visibility from Big Tujunga Canyon Road must be removed first. During the final year of sediment removal activities, whether or not activities last for the full 5 years, the LACFCD shall ensure that all remaining stockpiles do not exceed a maximum height of 20 feet. If required in order to meet the 20-foot height restriction, the LACFCD shall remove the necessary amount of aggregate from the stockpiles and deposit the aggregate within the Maple Canyon SPS before the conclusion of the Project.

MM LUP-1 would also apply to reduce visual impacts to visual character of the site.

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 pursuant to a statutory easement from the United States. Maple Canyon SPS was first used in 1981 under a SUP 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 2017). The proposed 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 2005b).

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?

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.

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

No Impact. As discussed above, 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.

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])?

No Impact. The proposed Project area is designated as Open Space—Federal Lands in the County's Land Use Plan (LACDRP 2015a). The proposed sediment removal, placement, and restoration activities would occur in an existing reservoir and SPS, where forest and timberland resources are not present. The proposed Project would not conflict with the forest use of the surrounding area. BTR is located in an area zoned by the USFS Land Management Plan for the Angeles National Forest as Back Country (USFS 2005b). 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 4.11, 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 removal, placement, and restoration activities are consistent with this zone (USFS 2005b). There would be no impact.

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

No Impact. 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. There would be no impact.

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 proposed Project activities would occur in an existing reservoir and SPS, where forest and timberland resources are not present. The proposed Project would not conflict with the forest use of the surrounding area. The proposed Project would comply with the conditions of the SUPs issued by the USFS for the continued use of these LACFCD facilities. Thus, no impacts on forest resources would occur.

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
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) 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?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

4.3.1 EXISTING CONDITIONS

The proposed 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[c]	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 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	12.0 µg/m^3	15.0 µg/m^3
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, –: No Standard; PM10: respirable particulate matter with a diameter of 10 microns or less, AAM: Annual Arithmetic Mean, PM2.5: fine particulate matter with a diameter of 2.5 microns or less, CO: carbon monoxide, mg/m^3: milligrams per cubic meter, NO_2: nitrogen dioxide, SO_2: sulfur dioxide, km: kilometer.

[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.

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

Source: CARB 2016.

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	Nonattainment
O_3 (8 hour)		Nonattainment
PM10	Nonattainment	Attainment/Maintenance
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Attainment/Nonattainment*
All others	Attainment/Unclassified	No standards

O_3: ozone; PM10: respirable particulate matter 10 microns or less in diameter; PM2.5: fine particulate matter 2.5 microns or less in diameter; CO: carbon monoxide; NO_2: nitrogen dioxide; SO_2: sulfur dioxide; SoCAB: South Coast Air Basin.

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

Source: SCAQMD 2016

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

Regulatory Requirements

RR AQ-1 All construction activities shall be conducted in compliance with all applicable South Coast Air Quality Management District (SCAQMD) rules and permitting requirements, including but not limited to:

- SCAQMD Rule 402, Nuisance, which states that a Project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property". Rule 402

refers to air contaminants or other material being discharged into the air, but not generation of noise and vibration.

- SCAQMD Rule 403, Fugitive Dust, for controlling fugitive dust and avoiding nuisance. Compliance with this rule will reduce short-term particulate pollutant emissions. Contractor compliance with Rule 403 requirements shall be mandated in the contractor's specifications. This would include, but not be limited to:
    - Preparing and implementing a Fugitive Dust Control Plan.
    - Signage would be installed around the Project site that provides a contact person and phone number to call with dust-related complaints and the phone number of the SCAQMD compliance office. The signage would remain and be maintained for the length of the Project.
    - Watering exposed surfaces at least three times per day, or more during windy conditions. High wind conditions are defined under Rule 403 as instantaneous wind speeds that exceed 25 miles per hour.
    - Non-toxic soil stabilizers/dust suppressants that create a crust on the surface to be resistant to wind erosion would be selected and applied consistent with Rule 403.
    - Traffic speeds on unpaved roads would be restricted to no more than 15 miles per hour.
    - One or more devices would be installed at ingress/egress points to remove dirt from vehicle tires and undercarriage prior to leaving the site.
    - All materials to be loaded for export would be pre-watered.
    - All haul trucks would either be covered (with on board tarp) or would maintain at least six inches of freeboard between the top of the soil and the edge of the truck bed.
    - Apply chemical stabilizers within five working days of grading completion.
    - For inactive disturbed surface areas, apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust or establish a vegetative ground cover within 21 days after active operations have ceased.

Impact Discussion

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

No Impact. The SCAQMD Air Quality Management Plan (AQMP) is the air quality plan applicable to the reaches in the SoCAB. The SCAQMD's current air quality planning document is the 2016 Air Quality Management Plan (AQMP), which is a regional and multi-agency effort among the SCAQMD, CARB, the Southern California Association of Governments (SCAG), and the United States Environmental Protection Agency (USEPA). The 2016 AQMP includes an analysis of emissions, meteorology, atmospheric chemistry, regional growth projects, and the impact of existing control measures. The purpose of the 2016 AQMP is to set forth a comprehensive program that would promote reductions in criteria pollutants, greenhouse gases, and toxic risk and efficiencies in energy use, transportation, and the goods movement (SCAQMD 2017a). The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS);

updated emission inventory methods for various source categories; and SCAG's latest growth forecasts (SCAQMD 2017b). The 2016 AQMP includes strategies and measures necessary to meet the National Ambient Air Quality Standards (NAAQS):

- 8-hour O_3 (75 parts per billion [ppb]) by 2031[14]
- Annual PM2.5 (12 micrograms per cubic meter [µg/m^3]) by 2025
- 8-hour O_3 (80 ppb) by 2023
- 1-hour O_3 (120 ppb) by 2022
- 24-hour PM2.5 (35 µg/m^3) by 2019

The main purpose of an AQMP is to bring an area into compliance with the federal and State ambient air quality standards. For a project to be consistent with the AQMP, the pollutants emitted from the project should not (1) exceed the SCAQMD CEQA air quality significance thresholds or (2) conflict with or exceed the assumptions in the AQMP. As shown in response to Threshold 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 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?

Less than Significant with Mitigation. Criteria pollutant emissions would occur during the summer season (generally from April to October) from the operation of (1) paving of all haul roads, except for a 0.4-mile portion that traverses through the reservoir; (2) off-road construction equipment at BTR and Maple Canyon SPS; (3) aggregate processing (crushing and screening) equipment; (4) on-road or off-road trucks hauling sediment from BTR to Maple Canyon SPS and aggregate from the aggregate processing area to the screened material stockpile and aggregate staging area; (5) personal vehicles driven to and from BTR and Maple Canyon SPS by construction workers; (6) hydroblasting to flush a stilling well on the dam crest; (7) repairing the hydraulic sluicegate; (8) access road paving and repair of the culvert crossing; (9) slope protection measures; (10) rehabilitating the northern reservoir access ramp to safely access the reservoir bottom and disposal of it; (11) closure of Maple Canyon SPS; (12) installing a boat dock; and (13) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering. Additionally, fugitive dust containing PM10 and PM2.5 would be generated from aggregate processing; material transfer to and from trucks; and storage piles.

Project-generated emissions were calculated as follows:

- Off-road construction equipment, fugitive dust from sediment excavation and placement, paving of haul roads, construction worker personal vehicle emissions, and revegetation/closure of Maple Canyon SPS were estimated using the California Emission Estimator Model (CalEEMod) Version 2016.3.2 computer program (CAPCOA 2016). 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

[14] On October 1, 2015, the USEPA lowered the 8-hour O_3 standard to 0.070 ppm (70 ppb). The SIP (or AQMP) for the 70 ppb standard will be due 4 years after the attainment/nonattainment designations are issued by the USEPA, which is expected in 2017. Thus, meeting the 70 ppb standard will be addressed in a 2021 AQMP.

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 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 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. Revegetation of Maple Canyon SPS would occur after the sediment removal and placement activities at Maple Canyon SPS.

Summer Season

- On-road vehicle (haul trucks) exhaust, tire, and brake emissions were calculated using CARB's EMFAC 2014 and 2017 emission factors.
- Off-road vehicle (haul trucks) exhaust, tire, and brake emissions were calculated using CalEEMod.

Preliminary Calculations

Because the 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 for on-road trucks, or 220 round trips for off-road trucks

2.2 miles from BTR to Maple Canyon SPS (southbound)

2.8 miles from Maple Canyon SPS to BTR (southbound, then northbound)

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

6 round trips per day

1.0 mile crusher to stockpile (southbound)

1.3 miles stockpile to crusher (northbound)

Average speed – 20 mph

3 minutes idle at crusher to load

3 minutes idle at stockpile to unload

This estimate also assumed watering of active grading areas, stockpiles, and unpaved roads three times per day in compliance with SCAQMD Rule 403, Fugitive Dust (RR AQ-1). It is noted that the SCAQMD Rule 403 does refer to the prohibition of visible dust beyond property lines; however, visible dust is not permitted and must be controlled to avoid creating a nuisance (SCAQMD Rule 402) (RR AQ-1). Per MM AQ-1, during sediment removal activities, the sediment would be removed and loaded onto either double-bottom belly dump trucks with capacities of 18 cubic yards (cy) per load, or ~~20~~ off-highway trucks with capacities of 33 cy per load to transport the sediment from BTR to Maple Canyon SPS. The trucks would be mobilized to the Project site at the beginning of the non-storm season and would stay on-site until the sediment removal activities are concluded for that season, unless repairs, emergency, or other unusual needs arise that necessitate removing the truck from the site. The trucks would then leave the Project site at the end of the non-storm season. Therefore, the daily dump truck trips would be limited to traveling between the BTR and Maple Canyon SPS, and the truck drivers and other employees would drive to the Project site each day in their personal/work vehicles. Work would be conducted during the non-storm season between approximately April 16 to October 14 (or until the first forecasted storm). For purposes of a conservative air quality analysis, the analysis assumes that all sediment would be trucked out of the reservoir.

MM AQ-1 provides two scenarios for different types of trucks: on-road (double-bottom belly dump trucks) or off-road trucks, with corresponding cubic yard capacities and maximum round truck trips allowable per day. MM AQ-1 requires that equipment will be scheduled to be active no more than 8 hours per workday. For on-road trucks, there will not be more than 400 round-trip trucks trips per workday (i.e., an average of 50 truck trips per hour over an 8-hour workday). For off-road trucks, there will not be more than 220 round-trip truck trips per workday (i.e., an average of 28 truck trips 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 worksite equipment (e.g. trucks, loaders, bulldozers) activity will be limited to a maximum of 400 round-trip truck trips for on-road trucks and a maximum of 220 roundtrip truck trips for off-road trucks within a given day. Additionally, the Construction Contractor must document the number of round-trip truck trips for each day of sediment removal and maintain an accurate log of daily truck trips and mileage per truck and have the daily log available for review and confirmation by the LACFCD upon request. Table 4-3 presents the estimated emissions of the Project with incorporation of only MM AQ-1 for sediment removal activities (during the first five years of Project implementation), for on-road trucks and off-road trucks, and revegetation/closure of Maple Canyon SPS (after completion of sediment removal activities). The SCAQMD considers exceedance of these thresholds to be a significant impact under CEQA.

TABLE 4-3
MAXIMUM DAILY CONSTRUCTION EMISSIONS
(WITH MITIGATION MEASURE AQ-1 ONLY) (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
ON-ROAD TRUCKS (MM AQ-1)					
Sediment Removal Activities					
Off-road equipment	21	197	126	22	11
Aggregate processing PM	–	–	–	2	2
Material transfer (batch drops) PM	–	–	–	1	<1
On-road truck (exhaust) (with MM AQ-1)	2	36	8	<1	<1
On-road PM	–	–	–	425	44
Storage piles PM	–	–	–	2	2
Total Emissions from Sediment/Aggregate Excavation and Placement	**22**	**234**	**134**	**453**	**60**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***Yes***	***No***	***Yes***	***Yes***
OFF-ROAD TRUCKS (MM AQ-1)					
Sediment Removal Activities					
Off-road equipment (exhaust) (with MM AQ-1)	28	271	174	22	12
Aggregate processing PM	–	–	–	2	2
Material transfer (batch drops) PM	–	–	–	1	<1
Off-road PM	–	–	–	388	41
Storage piles PM	–	–	–	2	2
Total Emissions from Sediment/Aggregate Excavation and Placement	**28**	**271**	**174**	**416**	**57**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***Yes***	***No***	***Yes***	***Yes***
Revegetation/Closure of Maple Canyon Sediment Placement Site					
Year 1	1	7	4	3	2
Year 2	1	7	4	3	2
Maximum Emissions	**1**	**7**	**4**	**3**	**2**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***

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

Source: SCAQMD 2019 (thresholds). Calculation data in Appendix A.

As shown in Table 4-3, with only MM AQ-1, NOx, PM10, and PM2.5 emissions would exceed the SCAQMD significance thresholds during sediment removal activities for on-road and off-road trucks and would therefore be a potentially significant impact. Therefore, implementation of MM AQ-2 through MM AQ-4 would be required to reduce all air quality related impacts from the Project to less than significant. During the closure activities for Maple Canyon SPS, the main activities that would generate emissions would occur during the site preparation and revegetation phases. As such, these activities were modeled in the analysis, and would occur for one to two years following completion of sediment removal activities. After site preparation and planting activities, there would be a 180-day warranty period, where there would be visits to Maple Canyon SPS once every other week. After revegetation of Maple Canyon SPS, there would be approximately 10 years of maintenance and monitoring, which would result in minimal routine maintenance vehicle trips and no heavy equipment use. After the warranty period, visits would reduce over

time, from monthly to quarterly over ten years. There would be less trips and activities occurring during the maintenance and monitoring phases than during site preparation and revegetation activities. Therefore, emissions from long-term monitoring would be less than the site preparation and planting phases of Maple Canyon SPS and would also be less than significant without mitigation.

MM AQ-2 requires that the proposed Project use all low-emission construction equipment (Tier 4 Final equipment). Implementation of MM AQ-2 would reduce NOx emissions from off-road equipment. MM AQ-3 requires that all currently unpaved roads that would be used for sediment hauling be paved between BTR, Maple Canyon SPS, and the aggregate stockpile site, except for a 0.4-mile section that traverses the reservoir. MM AQ-3 would reduce PM10 and PM2.5 emissions. MM AQ-4 requires that the unpaved approximate 0.4-mile portion of the access road that traverses through the reservoir be consistently maintained in a damp state to ensure dust reductions, which would further reduce PM10 and PM2.5 emissions.

Watering dry soil 3 times per day, as assumed for the unmitigated calculation per requirements of RR AQ-1, would achieve an approximate 61 percent reduction in fugitive dust. The incorporation of MM AQ-4 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 0.4-mile unpaved portion of the access road is within the reservoir bottom, it would contain residually damp soils from the dewatering activities. MM AQ-4 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 through MM AQ-4, impacts associated with NOx, PM10, and PM2.5 during sediment removal activities would be less than significant for on-road trucks or off-road trucks.

TABLE 4-4
MAXIMUM DAILY CONSTRUCTION EMISSIONS
SUMMER SEASON – WITH ALL MITIGATION MEASURES (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
ON-ROAD TRUCKS					
Off-road equipment	4	14	128	22	11
Aggregate processing PM	–	–	–	<1	<1
Material transfer (batch drops) PM	–	–	–	1	<1
On-road truck (exhaust)	2	36	8	<1	<1
On-road PM	–	–	–	114	13
Storage piles PM	–	–	–	2	2
Total	**6**	**50**	**136**	**140**	**27**
SCAQMD significance thresholds	*75*	*100*	*550*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***
OFF-ROAD TRUCKS					
Off-road equipment	5	20	180	22	12
Aggregate processing PM	–	–	–	<1	<1
Material transfer (batch drops) PM	–	–	–	1	<1
Off-road PM	–	–	–	109	13
Storage piles PM	–	–	–	2	2
Total	**5**	**20**	**180**	**135**	**28**

TABLE 4-4
MAXIMUM DAILY CONSTRUCTION EMISSIONS
SUMMER SEASON – WITH ALL MITIGATION MEASURES (POUNDS/DAY)

Source	VOC	NOx	CO	PM10	PM2.5
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 2019 (thresholds). Calculation data in Appendix A.

As shown in Tables 4-4, the combined implementation of MM AQ-1 through AQ-4 would reduce maximum daily emissions to less than the SCAQMD significance thresholds. With the incorporation of MM AQ-1 through AQ-4, the proposed Project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. All impacts would be less than significant with mitigation.

Toxic Air Contaminants Impacts

The greatest potential for toxic air contaminant (TAC) emissions during Project activities would be related to diesel particulate emissions associated with heavy equipment operations. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the temporary nature of construction activities. Activities associated with the Project would be temporary. The assessment of cancer risk is typically based on a 40-year exposure period. Because exposure to diesel exhaust would be on the order of months for a total of 5 to 7 years, activities from the Project would not result in an elevated cancer risk to exposed persons.

In addition, there are no residential land uses in the vicinity of BTR, with the exception of the Dam Operator's home at the dam site. 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. Air pollutant emissions disperse quickly with distance. The CARB recommends that residential uses be located at least 1,000 feet from major emission sources such as freeways. The Project site is located substantially further than this recommendation and would involve substantially fewer emission sources than a freeway. As such, Project-related toxic emission impacts during Project activities would be less than significant and no mitigation is required.

Cumulative Impacts

The SoCAB is a nonattainment area for O_3, PM10, and PM2.5. The proposed Project would generate these pollutants during paving and sediment removal activities, as described above. As shown in Table 4-4 above, construction emissions would not exceed SCAQMD CEQA significance thresholds with incorporation of MM AQ-1 through MM AQ-4.

SCAQMD's policy with respect to cumulative impacts associated with the above-referenced pollutants and their precursors is that impacts that would be directly less than significant would also be cumulatively less than significant (SCAQMD 2003). As discussed under this threshold, short-term construction emissions would be reduced to less than significant levels with mitigation. Therefore, consistent with SCAQMD policy, the cumulative construction impact of criteria pollutants would be less than significant.

Upon Project completion, there would be no long-term changes to the regular maintenance and operations at BTR or Maple Canyon SPS. Therefore, with incorporation of MM AQ-1 through MM AQ-4, there would be less than significant impacts related to the Project's long-term cumulative contribution to the air quality violations in the SoCAB, and no additional mitigation would be required.

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

Less than Significant Impact. The one on-site 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. The SCAQMD's localized significance threshold (LST) is not applied to this Project in part due to the distances of the off-site receptors and the type of sensitive receptors exposed. The LST methodology only applies to off-site receptors of the Project site. The Dam Operator is not an off-site receptor. The nearest off-site 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. 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. The nearest sensitive use (aforementioned trailhead) is approximately 1,930 meters from the Project site, which is substantially further than the LST-recommended 500-meter distance. Additionally, 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 trailhead. At these distances, impacts from pollutants generated in BTR and Maple Canyon SPS would not be of concern and would be less than significant.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact. The proposed 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. Additionally, the Project would be required to comply with RR AQ-1 (SCAQMD Rule 402, Nuisance), which would prevent the discharge of air contaminants or other material that could adversely affect a substantial number of people. Therefore, impacts would be less than significant, and no mitigation is required.

4.3.3 MITIGATION MEASURES

MM AQ-1 The LACFCD shall include in the Contractor's Requirements and Specifications the following requirement:

If using double-bottom belly dump trucks (on-road trucks) with the equivalent capacity of 18 cubic yards (cy), during all sediment removal activities, equipment shall be scheduled to be active no more than 8 hours per workday (assuming 400 round-trip trucks trips per workday [i.e., an average of 50 truck trips 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 worksite equipment (e.g. trucks, loaders, bulldozers) activity shall be limited to a maximum of 400 round-trip truck

trips within a given day. The Construction Contractor shall document the number of round-trip truck trips for each day of sediment removal and maintain an accurate log of daily truck trips and mileage per truck and have the daily log available for review and confirmation by the LACFCD upon request.

If using off-highway trucks with the equivalent capacity of 33 cy, during all sediment removal activities, equipment shall be scheduled to be active no more than 8 hours per workday (assuming 220 round-trip trucks trips per workday [i.e., an average of 28 truck trips 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 worksite equipment (e.g. trucks, loaders, bulldozers) activity shall be limited to a maximum of 220 round-trip truck trips within a given day. The Construction Contractor shall document the number of round-trip truck trips for each day of sediment removal and maintain an accurate log of daily truck trips and mileage per truck and have the daily log available for review and confirmation by the LACFCD upon request.

MM AQ-2 The LACFCD shall include in the Contractor's Requirements and Specifications the following requirement:

All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 4 Final or better off-road emissions standards.

MM AQ-3 Prior to the commencement of any Project-related activities that require heavy trucks or equipment to travel over the access roads/haul routes, the LACFCD shall ensure that all haul roads are paved, with the exception of the 0.4-mile portion of the route within the Big Tujunga Reservoir.

MM AQ-4 The unpaved approximate 0.4-mile portion of the access road that traverses through the reservoir shall be consistently maintained in a damp state to ensure dust reductions. The Construction Contractor shall prepare and implement an Exposed Soils Watering Plan to the satisfaction of the LACFCD, 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. In addition to the requirements of South Coast Air Quality Management District (SCAQMD) Rule 403, water trucks or other watering mechanisms shall 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 state or federally protected wetlands (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 were completed in the Project area to determine the presence of biological resources that may be impacted by the Project. Focused surveys and the jurisdictional delineation have been updated since the previous 2013 Draft IS/MND was circulated; results have been incorporated herein. Additionally, vegetation mapping was updated as part of the Big Tujunga Dam Operation and Maintenance HCP; vegetation mapping was updated to be consistent between this 2018 Revised and Recirculated IS/MND and the HCP since reservoir cleanout activities, such as the Project, are Covered Maintenance Activities in the HCP.

A summary of the findings of these surveys is provided below and include: (1) Biological Constraints Survey – 2011 (Appendix B-1); (2) Jurisdictional Delineation Report – December 2020 (Appendix B-2); (3) Results of Focused Presence/Absence Surveys for Arroyo Toad – 2011 (upstream of the reservoir); 2016 (downstream of the dam), 2017 (upstream of the reservoir), and 2018 (upstream of the reservoir) (Appendix B-3); (4) Results of Presence/Absence Surveys for Sierra Madre Yellow-Legged Frog – 2012 and 2016 (Appendix B-4), and 2018 (Appendix B-3); (5) Results of Focused Presence/Absence Surveys for the California Red-legged Frog – 2018 (Appendix B-3); (6) Results of Focused Presence/Absence Surveys for Special Status Fish Species Surveys – 2011 (Appendix B-5) and 2019 (upstream of the reservoir) (Appendix B-5);

(7) Results of Focused Presence/Absence Surveys for Western Pond Turtle – 2012 and 2018 (Appendix B-6); (8) Results of Focused Plant Surveys – 2011 and 2016 (Appendix B-7); (9) Results of Focused Presence/Absence Least Bell's Vireo and Southwestern Willow Flycatcher Surveys – 2012, 2016, and 2018 (Appendix B-8); (10) Results of Focused Presence/Absence for Western Yellow-billed Cuckoo (Appendix B-8);(11) Dewatering Flow Data Memorandum – 2013 (Appendix B-9); (12) Supplemental Release Memo (Appendix B-9); and (13) Vegetation Mapping for the Big Tujunga Dam Operation and Maintenance HCP (Appendix B-10). Additionally, results of the 6th, 7th, 8th, 9th, and 10th Annual Long-term Santa Ana Sucker and Benthic Macroinvertebrate Monitoring Project have been incorporated (BonTerra Psomas 2015, 2016d, Psomas 2017c, 2018e, and 2019).

4.4.1 EXISTING CONDITIONS

BTR and Maple Canyon support a variety of plant and wildlife species. Exhibit 4-4A, 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 4-4B 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 through B-10.

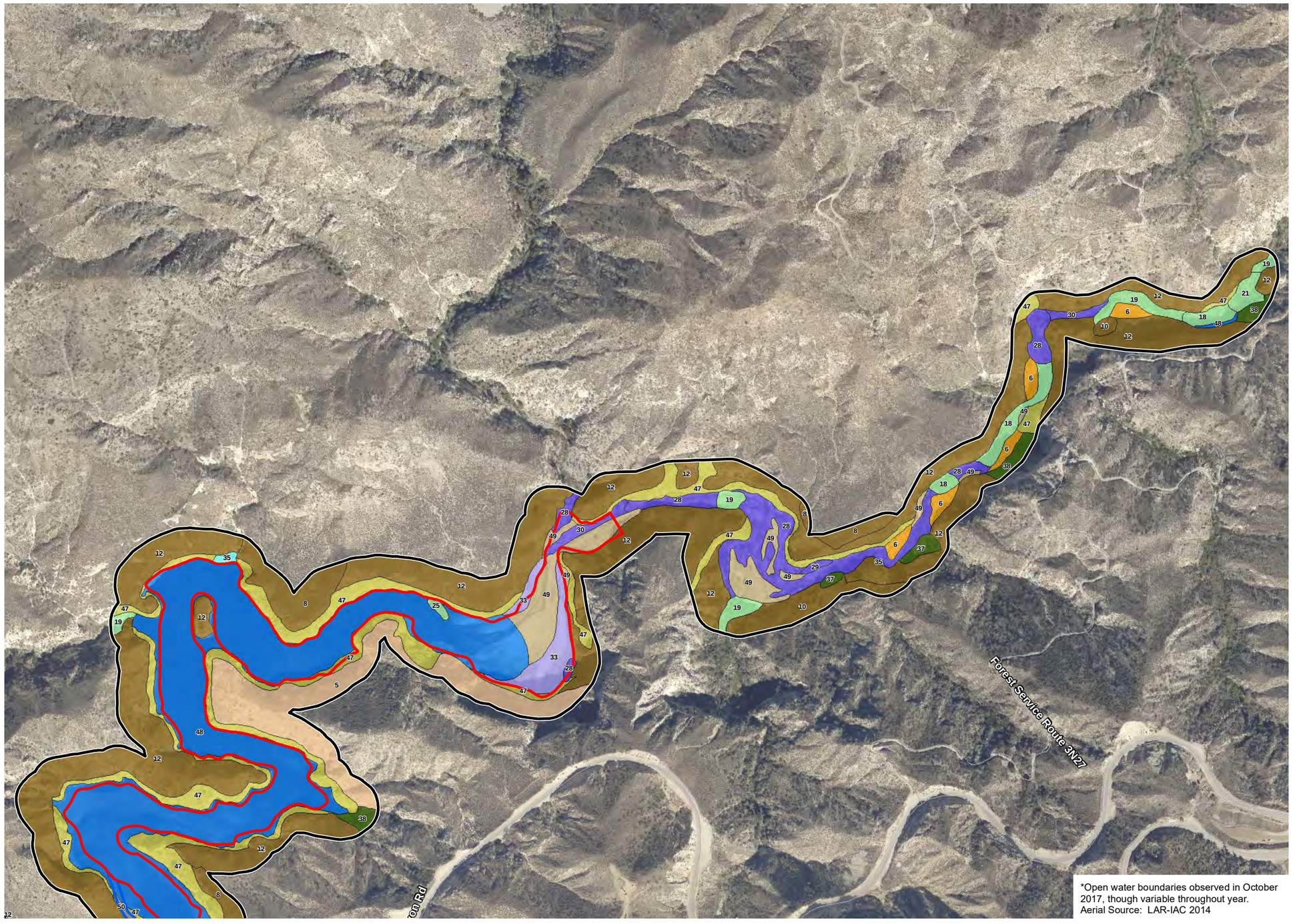
Vegetation Types

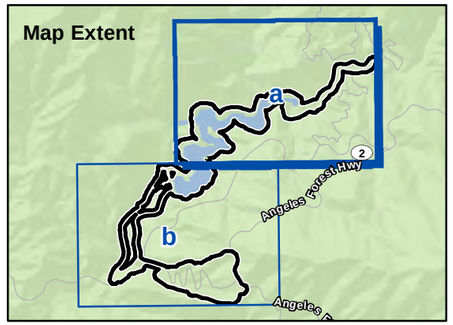
Nomenclature of vegetation types follows that of *A Manual of California Vegetation*, which is the standard classification system currently recognized by the California Department of Fish and Wildlife (CDFW) and the CNPS (Sawyer et al. 2009). For the previous surveys, vegetation was classified according to *The Vegetation Classification and Mapping Program: List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG 2003). The current vegetation types are cross referenced to this older system in the descriptions below to assist with comparison between the previously circulated 2013 Draft IS/MND and the Revised and Recirculated IS/MND.

Nomenclature of plant taxa conform to the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021) for special status species and the Jepson eFlora (Jepson Flora Project 2016) for all other taxa.

Upstream of BTR, Big Tujunga Creek consists of dry wash with patches of scale broom scrub, white alder grove–California sycamore woodland, white alder grove–willow thicket, California sycamore woodland–red willow thicket, black willow thicket, arroyo willow thicket, sandbar willow thicket, mule fat thicket, smartweed-cocklebur patch, and freshwater seep. Big Tujunga Creek upstream of the reservoir and BTR are surrounded by cliffs with laurel sumac scrub, thick leaf yerba santa scrub, chamise chaparral, scrub oak chaparral, birch leaf mountain mahogany chaparral, coast live oak woodland, and bigcone Douglas fir–canyon live oak forest on the adjacent steep slopes. The 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 species (e.g., smartweed-cocklebur patch), annual brome grassland, and dry wash around the periphery of the reservoir.

Downstream of Big Tujunga Dam, vegetation types along the Big Tujunga Creek include disturbed freshwater seep, white alder grove-willow thicket, and coast live oak woodland. The existing access roads are mapped as disturbed (unvegetated) and are bordered by annual brome grassland, California buckwheat scrub, disturbed California buckwheat scrub, birch leaf mountain mahogany chaparral, chamise chaparral, chamise chaparral–thick leaf yerba santa scrub, hoary leaf ceonothus chaparral, bigcone Douglas fir–canyon live oak chaparral, native plantings, and non-native plantings. The upper portions and outer edges of Maple Canyon SPS consist of laurel





Survey Area

Areas of Impact

Sediment Removal Disturbance

Haul Routes

Vegetation Types and Other Areas

Sage Scrub

5 : Laurel Sumac Scrub

Alluvial Scrub

6 : Scale Broom Scrub

Chaparral

8 : Chamise Chaparral

10 : Scrub Oak Chaparral

12 : Birch Leaf Mountain Mahogany Chaparral

Riparian Forest

18 : White Alder Grove–California Sycamore Woodland

19 : White Alder Grove–Willow

21 : California Sycamore Woodland–Red Willow Thicket

25 : Black Willow Thicket

Riparian Scrub

28 : Arroyo Willow Thicket

29 : Sandbar Willow Thicket

30 : Mulefat Thicket

Riparian Herb

33 : Smartweed–Cocklebur Patch

Seep

35 : Freshwater Seep

Forest/Woodland

37 : Coast Live Oak Woodland

38 : Bigcone Douglas Fir–Canyon Live Oak Forest

Cliff/Rock

47 : Cliff

Open Water

48 : Open Water

Alluvium

49 : Dry Wash

Other Landcover

50 : Disturbed

*Open water boundaries observed in October 2017, though variable throughout year.
Aerial Source: LAR-IAC 2014

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Vegetation Types and Disturbance Limits within Project Area

Exhibit 4-4a

Big Tujunga Reservoir Sediment Removal Project

N W E S

600 300 0 600 Feet

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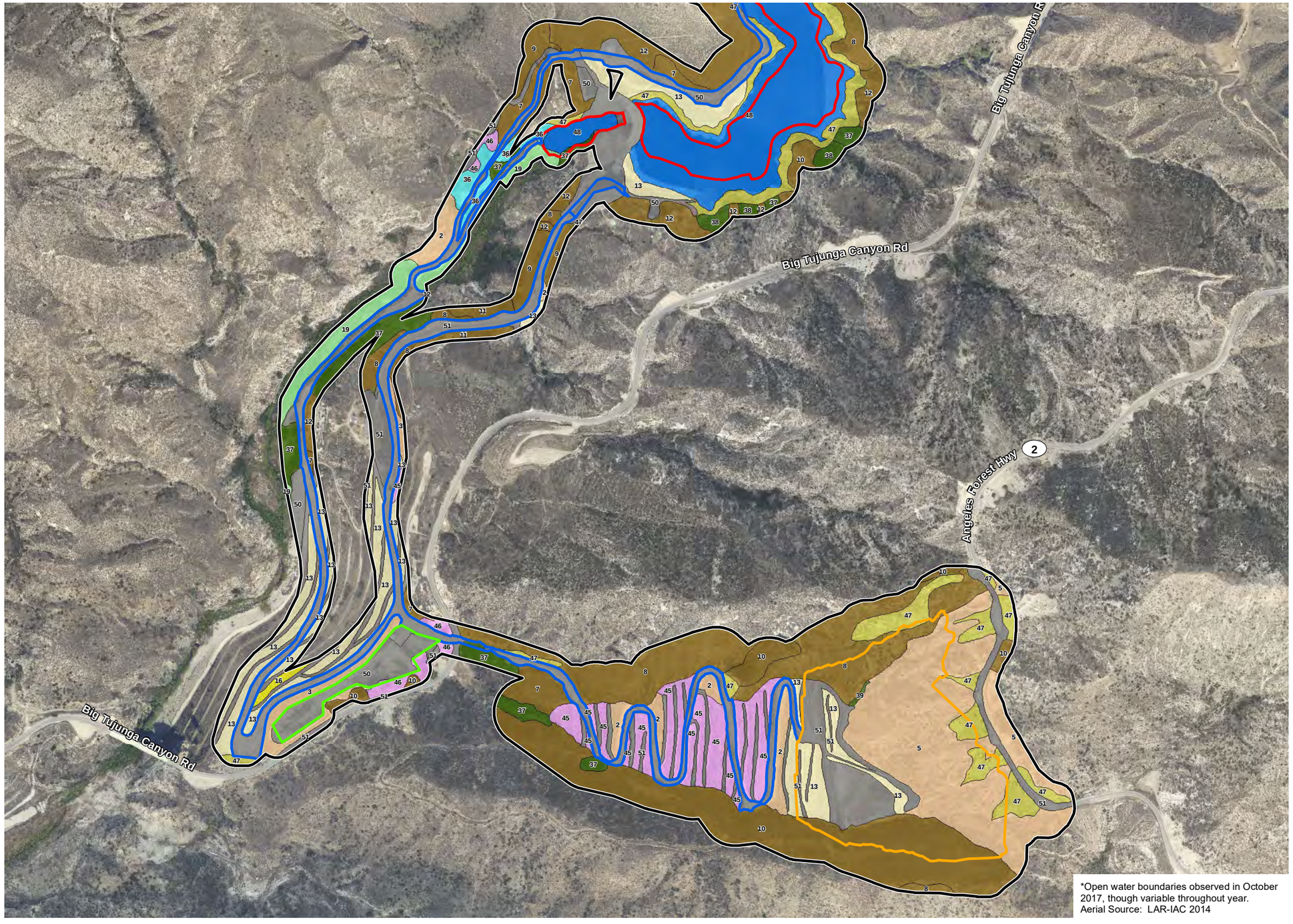

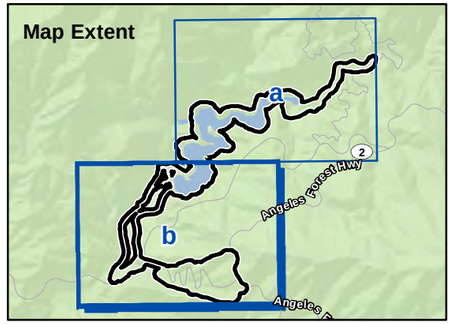

Survey Area

Areas of Impact

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

Vegetation Types and Other Areas

- Sage Scrub
  - 2 : California Buckwheat Scrub
  - 3 : Disturbed California Buckwheat Scrub
  - 5 : Laurel Sumac Scrub
- Chaparral
  - 7 : Thick Leaf Yerba Santa Scrub
  - 8 : Chamise Chaparral
  - 9 : Chamise Chaparral–Thick Leaf Yerba Santa Scrub
  - 10 : Scrub Oak Chaparral
  - 11 : Hoary Leaf Ceanothus Chaparral
  - 12 : Birch Leaf Mountain Mahogany Chaparral
- Grassland
  - 13 : Annual Brome Grassland
- Ruderal
  - 16 : Russian Thistle Field
- Riparian Forest
  - 19 : White Alder Grove–Willow
- Seep
  - 36 : Disturbed Freshwater Seep
- Forest/Woodland
  - 37 : Coast Live Oak Woodland
  - 38 : Bigcone Douglas Fir–Canyon Live Oak Forest
  - 39 : California Sycamore Woodland
- Ornamental Plantings
  - 45 : Native Planting
  - 46 : Non-native Planting
- Cliff/Rock
  - 47 : Cliff
- Open Water
  - 48 : Open Water
- Other Landcover
  - 50 : Disturbed
  - 51 : Developed/Ornamental

*Open water boundaries observed in October 2017, though variable throughout year.
Aerial Source: LAR-IAC 2014

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Vegetation Types and Disturbance Limits within Project Area

Exhibit 4-4b

Big Tujunga Reservoir Sediment Removal Project

N W E S

600 300 0 600 Feet

PSOMAS

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sumac chaparral, chamise chaparral, scrub oak chaparral, and cliffs with the central portion dominated by annual brome grassland, California buckwheat scrub, and native plantings. The lower portion of Maple Canyon SPS consists of coast live oak woodland and thick leaf yerba santa scrub. Many of these vegetation types were burned in the 2009 Station Fire but are now recovered or recovering. The locations of these vegetation types are depicted on Exhibits 4-54A5 and 4-54B5; each vegetation type in the study area is described below.

Sage Scrub

California Buckwheat Scrub: California buckwheat scrub occurs in upland areas adjacent to Big Tujunga Creek and in Maple Canyon SPS. This vegetation type is dominated by California buckwheat (*Eriogonum fasciculatum*). Co-occurring species include Whipple's chaparral yucca (*Hesperoyucca whipplei*). Some of the California annual grassland in Maple Canyon now has California buckwheat as the dominant species. These areas were previously classified as coastal sage scrub.

Disturbed California Buckwheat Scrub: Disturbed California buckwheat scrub occurs in upland areas along the access road to Big Tujunga Dam. This vegetation type is dominated by California buckwheat in the shrub layer. It is disturbed by previous grading/terracing of the slopes, on-going weed treatment, and the presence of non-native species such as red brome (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), and Russian thistle (*Salsola tragus*). These areas were previously classified as coastal sage scrub.

Laurel Sumac Scrub: Laurel sumac scrub occurs on the slopes above Maple Canyon. This vegetation type is dominated by laurel sumac (*Malosma laurina*) in the shrub layer. Co-occurring species include California sagebrush (*Artemisia californica*), California buckwheat, thick-leaved yerba santa (*Eriodictyon crassifolium* var. *crassifolium*), chamise (*Adenostoma fasciculatum*), birch-leaf mountain-mahogany (*Cercocarpus betuloides*), and Whipple's chaparral yucca. The shrub cover is quite open in the study area. In steep, rocky areas, there is little herbaceous cover. Gentler slopes have an herbaceous layer dominated by non-native grasses (e.g., bromes [*Bromus* spp.] and oats [*Avena* spp.]). These areas were previously classified as mixed chaparral.

Alluvial Scrub

Scale Broom Scrub: Scale broom scrub occurs along the alluvial terraces and floodplain of Big Tujunga Creek upstream of the reservoir. This vegetation type is characterized by the presence of scaly scale-broom (*Lepidospartum squamatum*), though the species may not be dominant in terms of cover. California buckwheat is present in most patches, often as the dominant species. Other co-occurring perennials include sessileflower goldenaster (*Heterotheca sessiliflora*), thick-leaved yerba santa, California sagebrush, white sage (*Salvia apiana*), Whipple's chaparral yucca, seaside prickly-pear (*Opuntia littoralis*), cane cholla (*Cylindropuntia californica* var. *parkeri*), and mule fat (*Baccharis salicifolia* ssp. *salicifolia*). Some areas have a sparse cover of annuals including bromes and oats. The active floodplain and lowest terraces, which experience the most frequent flood events, have sparse cover. Vegetation density is greater on the higher terraces. These areas were previously classified with the willow riparian scrub.

Chaparral

Thick Leaf Yerba Santa Scrub: Thick leaf yerba santa scrub occurs in upland areas adjacent to the upper reaches of Big Tujunga Creek. This vegetation type is dominated by thick-leaved yerba santa. Co-occurring species include California sagebrush, California buckwheat, Whipple's chaparral yucca, and chamise, with an understory of bromes. These areas were previously classified as mixed chaparral.

Chamise Chaparral: Chamise chaparral occurs on south-facing slopes above Maple Canyon. This vegetation type is dominated by chamise. Co-occurring species include birch-leaf mountain-mahogany, holly-leaved cherry (*Prunus ilicifolia*), California sagebrush, California buckwheat, and Whipple's chaparral yucca. These areas were previously classified as chamise chaparral.

Chamise Chaparral–Thick Leaf Yerba Santa Scrub: Chamise chaparral–thick leaf yerba santa scrub occurs along the access roads. The species composition is similar to thick leaf yerba santa scrub and chamise chaparral, but thick-leaved yerba santa and chamise co-dominate here. These areas were previously classified as mixed chaparral or chamise chaparral.

Scrub Oak Chaparral: Scrub oak chaparral occurs primarily on the north-facing slopes of the Maple Canyon SPS. This vegetation type is dominated by scrub oak (*Quercus berberidifolia*), with some areas co-dominated by canyon live oak (*Quercus chrysolepis*). Co-occurring species include heart-leaved bush penstemon (*Keckiella cordifolia*), bush poppy (*Dendromecon rigida*), California buckwheat, chaparral clematis (*Clematis lasiantha*), and California brickellbush (*Brickellia californica*). The understory includes species such as California poppy (*Eschscholzia californica*) and bromes. These areas were previously classified as scrub oak chaparral.

Hoary Leaf Ceanothus Chaparral: Hoary leaf ceanothus chaparral occurs in upland areas along the access road to Big Tujunga Dam. This vegetation type is dominated by hoaryleaf ceanothus (*Ceanothus crassifolius*). Other species include chaparral whitethorn (*Ceanothus lecodermis*), thick-leaved yerba santa, sugar bush (*Rhus ovata*), canyon live oak, and Whipple's chaparral yucca. These areas were previously classified as mixed chaparral.

Birch Leaf Mountain Mahogany Chaparral: Birch leaf mountain mahogany chaparral occurs in upland areas adjacent to the upper reaches of Big Tujunga Creek. This vegetation type is dominated by birch-leaf mountain-mahogany, though the overall shrub cover varies across the study area. Co-occurring species include chamise, sugar bush, California buckwheat, thick-leaved yerba santa, and Whipple's chaparral yucca. Some areas also contain chaparral whitethorn (*Ceanothus leucodermis*), hoaryleaf ceanothus, few-flowered California-lilac (*Ceanothus oliganthus*), and big berry manzanita (*Arctostaphylos glauca*). These areas were previously classified as mixed chaparral.

Grassland

Annual Brome Grassland: Annual brome grassland occurs along access roads and in Maple Canyon SPS. This vegetation type is dominated by non-native grasses, such as ripgut grass and red brome. Oat is also present. This vegetation type was previously classified as California annual grassland.

Ruderal

Russian Thistle Field: Russian thistle fields occur in a disturbed area along an access road. This vegetation type is dominated by Russian thistle. Co-occurring species include grayish shortpod mustard (*Hirschfeldia incana*) and cocklebur (*Xantium strumarium*). This area was previously classified as California annual grassland.

Riparian Forest

White Alder Grove–California Sycamore Woodland: White alder grove–California sycamore woodland occurs along the main channel in the upper reaches of Big Tujunga Creek. This vegetation type is co-dominated by mature white alder (*Alnus rhombifolia*) and western sycamore

(*Platanus racemosa*) in a closed canopy. These patches lack a substantial cover of willows (*Salix* spp.). These areas were not previously mapped.

White Alder Grove–Willow Thicket: White alder grove–willow thicket occurs throughout the upper reaches of Big Tujunga Creek at the upstream end of the study area. This vegetation type contains a variety of mature riparian tree species and has a closed canopy. In this vegetation type, white alder is co-dominant with a variety of willow species. Other tree species in this vegetation type include red willow (*Salix laevigata*), Pacific willow (*Salix lasiandra* var. *lasiandra*), Goodding's black willow (*Salix gooddingii*), some tall arroyo willows (*Salix lasiolepis*), and western sycamore. Understory species along the margins include southern cattail (*Typha domingensis*), California blackberry (*Rubus ursinus*), mugwort (*Artemisia douglasiana*), California brickellbush, hoary nettle (*Urtica dioica* ssp. *holosericea*), and water cress (*Nasturtium officinale*). These areas were previously classified as white alder–Fremont cottonwood–willow riparian forest or willow riparian forest.

California Sycamore Woodland–Red Willow Thicket: California sycamore woodland–red willow thicket occurs along Big Tujunga Creek at the upstream end of the survey area. This vegetation type is similar to the adjacent riparian forest but is co-dominated by western sycamore and red willow and lacks white alder.

Black Willow Thicket: Black willow thicket occurs along Big Tujunga Creek. This vegetation type has mature Goodding's black willow as the dominant species in the tree canopy. Most areas have a dense, closed canopy. Co-occurring trees include western sycamore, Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), and arroyo willow at relatively low densities. The understory is largely unvegetated. Shrubby species such as mule fat, Hinds' willow (*Salix exigua* var. *hindsiana*), and cocklebur are present along the margins. These areas were previously classified as willow riparian scrub.

Riparian Scrub

Arroyo Willow Thicket: Arroyo willow thickets occur in the upper reaches of Big Tujunga Creek. This vegetation type is dominated by the shrubby arroyo willow and is more open than the riparian forest vegetation. Co-occurring species include mule fat, red willow, and Goodding's black willow. The understory contains western poison oak (*Toxicodendron diversilobum*), mugwort, branching phacelia (*Phacelia ramosissima*), crofton weed (*Ageratina adenophora*), white sweetclover (*Melilotus albus*), and various monkeyflowers (*Mimulus* spp.). These areas were previously classified as willow riparian scrub.

Sandbar Willow Thicket: Sandbar willow thickets occur along the low flow channel of Big Tujunga Creek. This vegetation type is dominated by Hinds' willow; mule fat is also generally present. These areas were previously classified as willow riparian scrub.

Mulefat Thicket: Mulefat thickets occur along Big Tujunga Creek. This vegetation type is dominated by mule fat. In these areas, mule fat grows sparsely on either side of the narrow channels; some areas have scattered emergent Fremont cottonwood. These areas were previously classified as willow riparian scrub.

Riparian Herb

Smartweed–Cocklebur Patch: Smartweed–cocklebur patches occur above the reservoir along Big Tujunga Creek. This vegetation type is dominated by cocklebur. Other herbaceous species include willow weed (*Persicaria lapathifolia*), red-dotted monkeyflower (*Mimulus guttatus*), bentgrass (*Agrostis* sp.), smilo grass (*Stipa miliacea* var. *miliacea*), long-leaved rush (*Juncus*

macrophyllus), tall evening primrose (*Oenothera elata*), water speedwell (*Veronica anagallis-aquatica*), water cress (*Nasturtium officinale*), common beggar-ticks (*Bidens pilosa*), annual beard grass (*Polypogon monspeliensis*), crofton weed, white sweetclover, red monkeyflower (*Mimulus cardinalis*), cock's spur barnyard grass (*Echinochloa crus-galli*), false daisy (*Eclipta prostrata*), and lovegrass flatsedge (*Cyperus eragrostis*). These areas were previously classified as riparian herb.

Seep

Freshwater Seep: Freshwater seep occurs along the canyon walls above the Big Tujunga Creek reservoir. This vegetation type is dominated by stream orchid (*Epipactis gigantea*), California maidenhair (*Adiantum jordanii*), red monkeyflower, and western blue-eyed-grass (*Sisyrinchium bellum*). This plant community has no corresponding vegetation type in Sawyer et al. (2009). These areas were not previously mapped.

Disturbed Freshwater Seep: Disturbed freshwater seep occurs along the canyon walls adjacent to the access road below Big Tujunga Dam and on a cliff above the reservoir. This vegetation type contains an underlying native component of stream orchid, California maidenhair, red monkeyflower, and western blue-eyed-grass. However, it is disturbed by the presence of non-native crofton weed, barbed Mediterranean schismus (*Schismus barbatus*), fescue (*Festuca* sp.), and bromes. This plant community has no corresponding vegetation type in Sawyer et al. (2009). These areas were previously classified as disturbed freshwater seep.

Forest/Woodland

Coast Live Oak Woodland: Coast live oak woodland occurs along the margins of Big Tujunga Creek. This vegetation type is dominated by coast live oak (*Quercus agrifolia*) in the tree canopy. The understory includes species such as holly-leaved cherry, western poison oak, birch-leaf mountain mahogany, thick-leaved yerba santa, Whipple's chaparral yucca, California sagebrush, California buckwheat, black sage (*Salvia mellifera*), and deerweed (*Acmispon glaber*). These areas were previously classified as coast live oak stands.

Bigcone Douglas Fir–Canyon Live Oak Forest: Bigcone Douglas fir–canyon live oak forest occurs on the steep slopes and side canyons of upper Big Tujunga Creek. This vegetation type is dominated by bigcone Douglas-fir (*Pseudotsuga macrocarpa*) in the tree canopy. Co-occurring species include canyon live oak, coast live oak, sugar bush, and laurel sumac. These areas were previously classified as bigcone Douglas fir–canyon live oak forest.

California Sycamore Woodland: California sycamore woodland occurs on higher terraces along Big Tujunga Creek. This vegetation type consists of an open canopy of western sycamore. Sage scrub species (e.g., California sagebrush, California buckwheat, and thick-leaved yerba santa) and annual grasses (e.g., bromes) are present in the understory. These areas were previously mapped as California sycamore woodland.

Ornamental

Native Planting: Native plantings are located in Maple Canyon SPS where fill material was planted with coast live oaks interspersed with pine (*Pinus* sp.) trees. This area was previously mapped as California annual grassland.

Non-native Planting: Non-native plantings consist of non-native tree species that have been planted, typically for landscaping purposes. Non-native plantings include pepper tree (*Schinus molle*), gum tree (*Eucalyptus* sp.), tree of heaven (*Ailanthus altissima*), pine, and European olive

(*Oleo europaea*). Understory species vary and include mule fat, blue elderberry (*Sambucus nigra* ssp. *caerulea*), tree tobacco (*Nicotiana glauca*), grayish shortpod mustard, and bromes. These areas were previously classified as ornamental.

Rock/Cliff

Cliff: Cliffs occur in the canyon on either side of Big Tujunga Creek. These areas have steep, sometimes vertical, topography and consist of exposed rock. Areas mapped as cliff are unvegetated. The steep, rocky slopes with scattered vegetation are mapped as the corresponding vegetation type. It should be noted that due to the nature of mapping on aerial imagery, the vertical cliffs in the upper Big Tujunga Canyon are not always visible in the plan view. The actual surface area of cliffs immediately above the canyon floor is larger than shown. These areas were previously classified as cliff.

Open Water

Open Water: Open water occurs where surface water is present in Big Tujunga Creek and not covered by a vegetation canopy. These areas were previously classified as open water.

Alluvium

Dry Wash: Dry wash occurs in alluvial areas, generally in the low flow channels and active floodplains. These areas consist of sandy, gravelly, or cobbly substrate that has been scoured of vegetation. Alluvium present under a vegetative canopy is mapped as the corresponding vegetation type. These areas were previously classified as streambed.

Other

Disturbed: Disturbed areas consist of unvegetated or very sparsely vegetated bare ground that is not alluvial. This includes dirt trails, roads, road shoulders, and graded lots. These areas were not previously mapped.

Developed/Ornamental: Developed/ornamental areas consist of human-made structures and closely associated landscaping. These areas include the dam, facility buildings, paved roads, and rip-rap. Ornamental landscaping includes species such as European olive, pine, pepper trees, and common oleander (*Nerium oleander*). These areas were previously classified separately as ornamental and developed.

Wildlife

Big Tujunga Creek has perennial flows through Big Tujunga Canyon upstream of BTR and intermittent to perennial flows downstream of BTR. Upstream and downstream of BTR, several tributaries feed into Big Tujunga Creek, although many of them may be dry in dry years. These features within Big Tujunga Canyon are favorable for fish species. Native fish species observed in Big Tujunga Creek during surveys included Santa Ana sucker (*Catostomus santaanae*), arroyo chub (*Gila orcutti*), Santa Ana speckled dace (*Rhinichthys osculus* ssp. 3), and rainbow trout (*Oncorhynchus mykiss*). Only non-native species were observed in the BTR and include black 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*), California treefrog (*Pseudacris cadaverina*), and Baja California treefrog

(*Pseudacris hypochondriaca*). The non-native American bullfrog (*Lithobates catesbeianus*) was also observed.

Diversity and abundance of reptiles typically varies with vegetation type and substrate characteristics. The western pond turtle (*Emys marmorata*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western skink (*Plestidon skiltonianus*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), southern alligator lizard (*Elgaria multicarinata*), and two-striped garter snake (*Thamnophis hammondii*) were observed during the survey. The non-native red-eared slider (*Trachemys scripta elegans*) was also observed. 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*), California [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 celata*), yellow warbler (*Setophaga petechia*), yellow-rumped warbler (*Setophaga coronata*), black-throated gray warbler (*Setophaga nigrescens*), Wilson's warbler (*Cardellina pusilla*), spotted towhee (*Pipilo maculatus*), California towhee (*Melozone 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 psaltria*), Lawrence's goldfinch (*Spinus lawrencei*), and American goldfinch (*Spinus 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 concolor*), and black bear (*Ursus americanus*). 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 and BTR pose a barrier that fish are not able pass. Amphibians and reptiles are not as limited by Big Tujunga Dam as they may 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 through the Project area, without being restricted by Big Tujunga Dam.

Special Status Biological Resources

The CNPS' Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2021) and the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) (CDFW 2021a) were reviewed prior to the survey to identify special status plants, wildlife, and habitats known to occur in the vicinity of the 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 4-5 and 4 66. Special status species that were observed in the Project area during focused surveys are shown in Exhibit 4-5, Special Status Species Locations. Exhibit 4-6, Critical Habitat, depicts the designated Critical Habitats for both the arroyo toad and the Santa Ana sucker in the vicinity of the Project area.

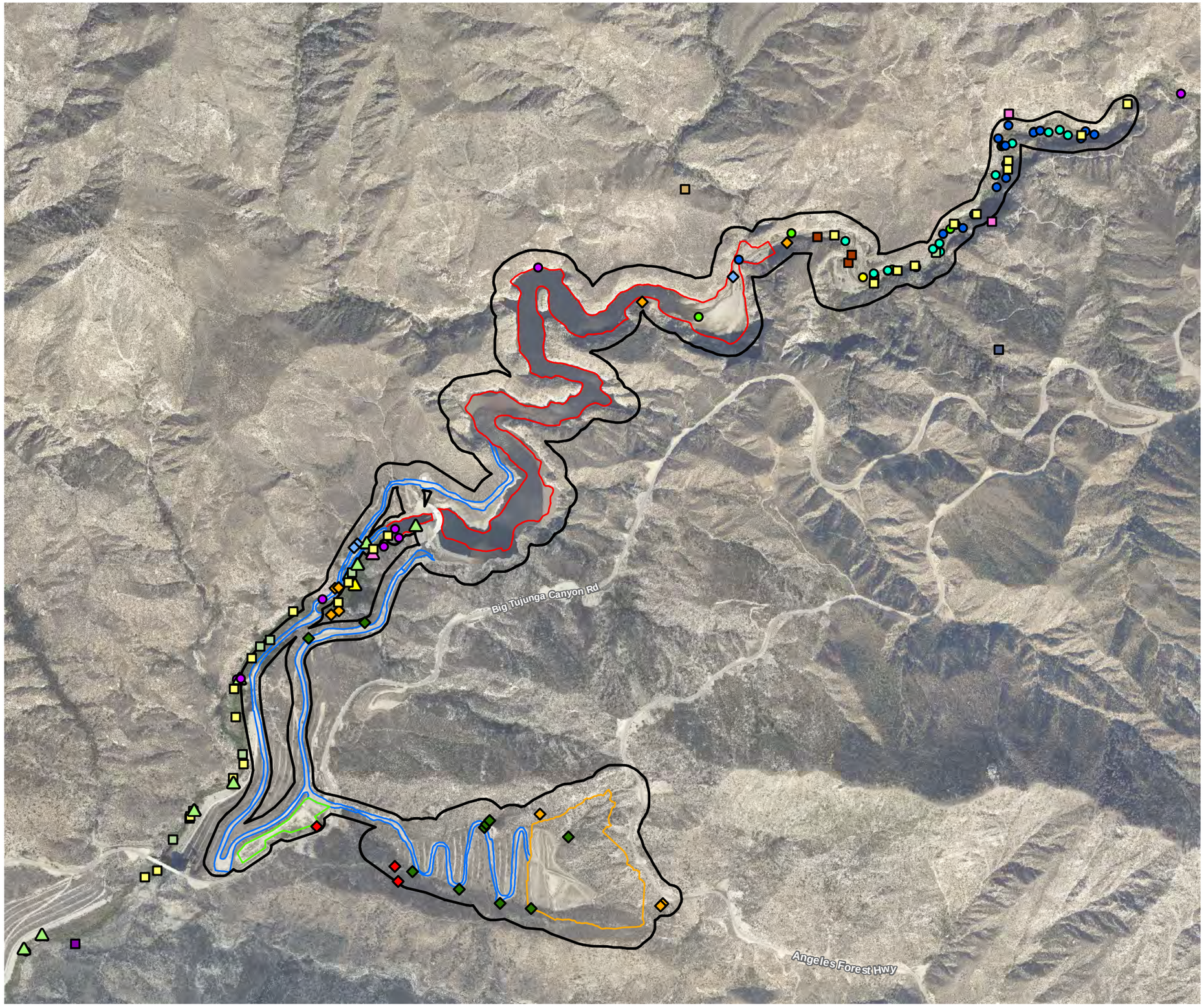
Special Status Vegetation Types

Sage Scrub

Sage scrub has declined approximately 70 to 90 percent in its historic range in coastal 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 habitat for many wildlife species. California buckwheat scrub, disturbed California buckwheat scrub, and laurel sumac scrub are all considered secure or apparently secure, while scale broom scrub is considered vulnerable (CDFW 2020).

Riparian

When the water level in BTR is very low, riparian herb vegetation can grow around the periphery of the BTR and include smartweed-cocklebur patch or disturbed freshwater seep. Black willow thicket, arroyo willow thicket, and mulefat thicket occur upstream of BTR along Big Tujunga Creek and white alder grove–willow thicket, and disturbed freshwater seep occur along Big Tujunga Creek downstream of the dam. In Maple Canyon SPS there is a small patch of California



Study Area

Areas of Impact

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

Special Status Species

Plants

- Greata's Aster
- Plummer's Mariposa Lily
- Fragrant Pitcher Sage
- San Gabriel Oak

Fish

- Santa Ana Sucker
- Arroyo Chub
- Santa Ana Speckled Dace

Amphibians and Reptiles

- Arroyo Toad [1]
- Western Pond Turtle
- Coastal Whiptail
- Coast Horned Lizard
- Two-striped Garter Snake
- San Bernardino ringneck snake

Birds

- American Peregrine Falcon
- Least Bell's Vireo [2]
- Loggerhead Shrike
- Southern California rufous-crowned sparrow
- Willow Flycatcher (undetermined subspecies)
- Yellow warbler [3]
- Yellow-breasted chat

Notes:

[1] These are multiple observations of one individual observed in 2011 and one individual observed in 2017.

[2] These are multiple observations of one pair of vireos observed in 2017.

[3] Yellow warbler locations south of the reservoir are approximate.

N W E S

1,050 525 0 1,050 Feet

Aerial Source: LAR-IAC 2014

Special Status Species Locations

Exhibit 4-5

Big Tujunga Reservoir Sediment Removal Project

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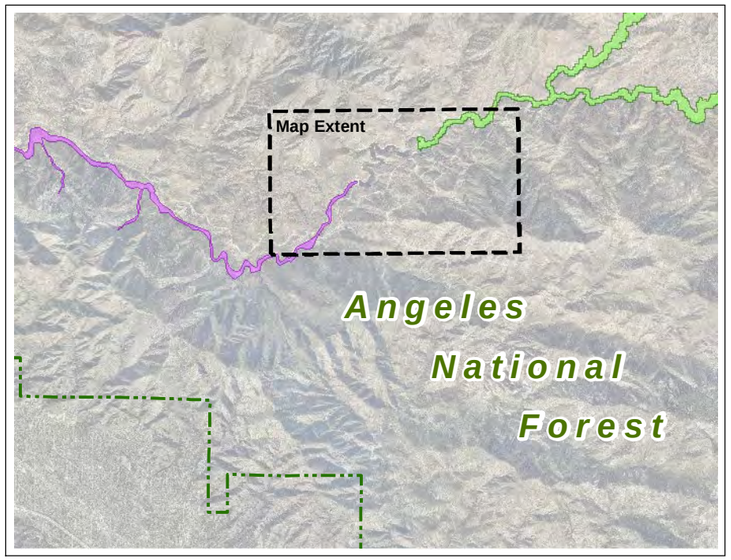

Study Area

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 4-6

Big Tujunga Reservoir Sediment Removal Project

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sycamore woodland along a drainage. Riparian herb, scrub, and forest 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. Of the riparian vegetation types in the Project area white alder grove–California sycamore woodland, white alder grove–willow thicket, California sycamore woodland–red willow thicket, black willow thicket, and arroyo willow thicket are considered vulnerable (CDFW 2020).

These vegetation types may be subject to permit conditions, as regulated by the USACE and the RWQCB pursuant to Section 404 of the Clean Water Act, and the CDFW, under 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 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. The jurisdictional delineation for the entire Project area was updated in 2020 to reflect new regulatory guidance issued by the USACE in 2020 (Appendix B-2). One of the major changes to the definition is that ephemeral waters are no longer considered "waters of the U.S." and subject to USACE regulation under the Clean Water Act. As such, some drainage features (e.g., those in Maple Canyon SPS) would no longer be under the jurisdiction of USACE; however, they would remain under the jurisdiction of RWQCB because they are considered "waters of the State" under the Porter-Cologne Water Quality Control Act. A total of 70.65 acres of "waters of the U.S." under the jurisdiction of the USACE is present in the Project area, including 62.79 acres in BTR; 1.45 acres in the plunge pool; 6.41 acres in Big Tujunga Creek; and 2.48 acres in Maple Canyon SPS. A total of 73.57 acres of waters under the jurisdiction of the RWQCB is present in the Project area, including 62.79 acres in BTR; 1.45 acres in the plunge pool; 6.85 acres in Big Tujunga Creek; and 2.48 acres in Maple Canyon SPS. A total of 93.11 acres under the jurisdiction of the CDFW is present in the Project area, including 71.03 acres in BTR; 1.75 acres in the plunge pool; 14.35 acres in Big Tujunga Creek; and 5.98 acres in Maple Canyon SPS (Psomas 2021). No wetlands were observed in the study area during the jurisdictional delineation.

Coast Live Oak/California Sycamore Woodlands

Coast live oak occurs in areas along the haul routes and along a portion of Big Tujunga Creek downstream of the dam. California sycamore woodland occurs in Maple Canyon SPS. Oak and sycamore forests and woodlands provide food, cover, and nesting or denning habitat for many wildlife species. Coast live oak woodland is considered apparently secure, and California sycamore woodland is considered vulnerable (CDFW 2020).

Bigcone Douglas Fir-Canyon Live Oak Forest

Bigcone Douglas fir-canyon live oak occurs along the southeastern portion of BTR. The USFS lists bigcone Douglas-fir as a Management Indicator Species. 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 bigcone Douglas fir vegetation to be vulnerable (CDFW 2020).

Significant Ecological Areas

The Project area is not located in a Significant Ecological Area (SEA), according to the County General Plan. However, the Project site is located within the San Gabriel Mountains, approximately 6 miles upstream of SEA Number 25: Tujunga Valley/Hansen Dam (LACDRP 2015a). 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. 25) 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 leptoceras*), both federally and State-listed Endangered species. In addition to small pockets of fresh water 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 2015a).

Special Status Plant Species

Focused plant surveys were conducted within the Project area boundary in 2011 and updated in 2016 (Appendix B-7). Table 4-5 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 4-5.

TABLE 4-5
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR
IN THE PROJECT REGION

Species [a, b]	Status				Potential to Occur in the Study Area and Survey Results
	USFWS	CDFW	CRPR	USFS	
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	—	—	1B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Astragalus brauntonii Braunton's milk-vetch	FE	—	1B.1	FE	Outside current known range; therefore, not expected to occur.
Atriplex parishii Parish's brittlescale	—	—	1B.1	—	No suitable habitat; therefore, not expected to occur.
Berberis nevinii Nevin's barberry	FE	SE	1B.1	FE	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
California macrophylla round-leaved filaree	—	—	—	—	No suitable habitat; therefore, not expected to occur.
Calochortus clavatus var. *gracilis* slender mariposa-lily	—	—	1B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Calochortus palmeri var. *palmeri* Palmer's mariposa-lily	—	—	1B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Calochortus plummerae Plummer's mariposa-lily	—	—	4.2	—	Observed; suitable habitat.
Calochortus striatus alkali mariposa-lily	—	—	1B.2	FSS	No suitable habitat and outside current known range; therefore, not expected to occur.

TABLE 4-5
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT REGION

Species [a, b]	Status				Potential to Occur in the Study Area and Survey Results
	USFWS	CDFW	CRPR	USFS	
Camissoniopsis lewisii Lewis' evening-primrose	—	—	3	—	Outside current known range; therefore, not expected to occur.
Castilleja gleasonii Mount Gleason paintbrush	—	SR	1B.2	FSS	No suitable habitat and outside current known range; therefore, not expected to occur.
Centromadia parryi ssp. *australis* southern tarplant	—	—	1B.1	—	No suitable habitat; therefore, not expected to occur.
Centromadia pungens ssp. *laevis* smooth tarplant	—	—	1B.1	—	Outside current known range; therefore, not expected to occur.
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	—	SE	1B.1	FSS	Outside current known range; therefore, not expected to occur.
Chorizanthe parryi var. *parryi* Parry's spineflower	—	—	1B.1	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Cladium californicum California saw-grass	—	—	2B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Dodecahema leptoceras slender-horned spineflower	FE	SE	1B.1	FE	No suitable habitat; therefore, not expected to occur.
Dudleya multicaulis many-stemmed dudleya	—	—	1B.2	FSS	No suitable habitat; therefore, not expected to occur.
Galium grande San Gabriel bedstraw	—	—	1B.2	FSS	No suitable habitat; therefore, not expected to occur.
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	—	—	1A	—	No suitable habitat and presumed extinct; therefore, not expected to occur.
Horkelia cuneata ssp. *puberula* mesa horkelia	—	—	1B.1	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Imperata brevifolia California satintail	—	—	2B.1	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	—	—	1B.1	—	No suitable habitat; therefore, not expected to occur.
Lepechinia fragrans fragrant pitcher sage	—	—	4.2	FSS	Observed; suitable habitat.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	—	—	4.3	—	No suitable habitat; therefore, not expected to occur.
Linanthus concinnus San Gabriel linanthus	—	—	1B.2	FSS	Outside known elevational range; therefore, not expected to occur.
Linanthus orcuttii Orcutt's linanthus	—	—	1B.3	FSS	Outside current known range; therefore, not expected to occur.
Lupinus peirsonii Peirson's lupine	—	—	1B.3	FSS	Outside current known range; therefore, not expected to occur.
Malacothamnus davidsonii Davidson's bush-mallow	—	—	1B.2	—	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Muhlenbergia californica California muhly	—	—	4.3	—	No suitable habitat; therefore, not expected to occur.
Opuntia basilaris var. *brachyclada* short-joint beavertail	—	—	1B.2	FSS	No suitable habitat; therefore, not expected to occur.
Orobanche valida ssp. *valida* Rock Creek broomrape	—	—	1B.2	FSS	No suitable habitat and outside known elevational range; therefore, not expected to occur.

TABLE 4-5
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE PROJECT REGION

Species [a, b]	Status				Potential to Occur in the Study Area and Survey Results
	USFWS	CDFW	CRPR	USFS	
Pseudognaphalium leucocephalum white rabbit-tobacco	—	—	2B.2	—	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Quercus durata var. *gabrielensis* San Gabriel oak	—	—	4.2	—	Observed; suitable habitat.
Ribes divaricatum var. *parishii* Parish's gooseberry	—	—	1A	—	No suitable habitat and presumed extinct; therefore, not expected to occur.
Sidalcea neomexicana Salt Spring checkerbloom	—	—	2B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Spermolepis lateriflora Western bristly scaleseed	—	—	2A	—	No suitable habitat and presumed extinct; therefore, not expected to occur.
Symphyotrichum greatae Greata's aster	—	—	1B.3	—	Observed; suitable habitat.
Symphyotrichum defoliatum San Bernardino aster	—	—	1B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.
Thelypteris puberula var. *sonorensis* Sonoran maiden fern	—	—	2B.2	FSS	Potentially suitable habitat, but not observed during focused surveys; therefore, not expected to occur.

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

Federal Status
FE Endangered
FPT Proposed Threatened

State Status
SE Endangered
SR Rare

Forest Service Status
FSS Forest Service Sensitive

California Rare Plant Rank (CRPR)
1A Plants Presumed Extinct in California
1B Plants Rare, Threatened, or Endangered Throughout Their Range
2B Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
3 Plants of About Which We Need More Information – A Review List
4 Plants of Limited Distribution – A Watch List

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

Note:
[a] Scientific and common names for special status plant species follow the most current List of Special Vascular Plants, Bryophytes, and Lichens available from the California Department of Fish and Wildlife (CDFW 2021b).
[b] 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.

The 2016 special status plant surveys, provided in Appendix B-7, found the same four species that were observed in 2011. The 2016 survey results were consistent with the results of the previous 2011 surveys; no new species were observed. Observed differences in population sizes are not unexpected; population sizes may fluctuate for a variety of reasons, such as differences in annual rainfall. Additionally, every individual doesn't bloom every year; thus, when populations are of limited size and extent, they may be detectable one year and not another depending on the collective flowering of the individuals in that population. However, it is expected that if a large population were present, it would be detectable (assuming adequate rainfall) because there would always be some individuals blooming.

Plummer's Mariposa-Lily

Plummer's mariposa-lily has a CRPR of 4.2. It typically blooms between May and July. This perennial bulbiferous herb occurs in dry, rocky chaparral and yellow-pine forest at elevations between sea level and approximately 5,577 feet above msl. This species is known from the South Coast, Transverse Ranges, and Peninsular Ranges (Jepson Flora Project 2016). Ten individuals were observed in four populations (three of which were new) during the 2016 focused survey (Exhibit 4-5). Two of the populations were observed on the cliff faces above Big Tujunga Reservoir; one population was observed along the haul route below the reservoir; and one population was observed in the Maple Canyon SPS. Note that during the 2011 survey, 30 individuals were observed in 5 populations; of the 2011 locations, only 1 had lilies blooming in 2016.

Fragrant Pitcher Sage

Fragrant pitcher sage has a CRPR of 4.2 and is listed as a sensitive species for the Angeles National Forest by the U.S. Forest Service (USFS). It typically blooms between March and October (Jepson Flora Project 2016). This perennial shrub occurs in chaparral vegetation at elevations between sea level and approximately 4,265 feet above msl. It is known from the Western Transverse Ranges, the San Gabriel Mountains, the South Coast, and the northern Channel Islands. Nine individuals were observed in two populations in dense scrub oak chaparral and sage scrub during the 2016 focused surveys (Exhibit 4-5). One population was observed adjacent to Big Tujunga Canyon Road and the other population is located in the Maple Canyon SPS. Both of these populations had been observed in 2011. Note that, during 2011 surveys, an additional population of three individuals was documented in the Maple Canyon SPS; this area was inaccessible during the current survey due to the dense vegetation.

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 (Jepson Flora Project 2016). It is known from the southeast Western Transverse Ranges and south slopes of the San Gabriel Mountains. Eighty-four individuals were observed in ten populations in the Maple Canyon SPS and along the haul route below the reservoir in chaparral vegetation during the 2016 focused surveys (Exhibit 4-5). In 2011, 48 individuals were observed in 3 populations. The increase in the number of individuals observed is likely due to survey timing—acorn production was at a peak during the final 2016 survey and individuals were easily visible in dense chaparral vegetation.

Greata's Aster

Greata's aster has a CRPR of 1B.3. It typically blooms between August and October (JepsonFlora Project 2016). This rhizomatous perennial herb occurs in damp places in canyons at elevations between approximately 985 and 6,560 feet above msl. It is known from the southern slopes of the San Gabriel Mountains. A total of ten individuals were observed at three locations (one of which was new) during the 2016 focused survey (Exhibit 4-5). Five individuals were observed in two populations at a freshwater seep along the haul route (previously observed in 2011) and five individuals were observed at the creek edge at the upstream end of the reservoir (Exhibit 4-5). Conditions at the seep were similar to those observed in 2011.

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; (2) arroyo

toad; (3) southern mountain [Sierra Madre] yellow-legged frog (*Rana muscosa*); (4) western [Pacific] pond turtle; and (5) southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo (*Vireo bellii pusillus*). Table 4-6 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 4-5.

Focused surveys were updated for select species in spring/summer 2018 at the request of CDFW. The 2018 focused surveys included: special status amphibians (including California red-legged frog [*Rana draytonii*], southern mountain yellow-legged frog, and arroyo toad) both upstream and downstream of BTR; (2) western pond turtle trapping throughout the study area; (3) special status riparian birds (including least Bell's vireo, southwestern willow flycatcher, and western yellow-billed cuckoo [*Coccyzus americanus occidentalis*]). CDFW also requested updated focused surveys for special status fish upstream of BTR; however, these surveys could not be conducted in 2018 because the stream dried due to lack of rainfall. These surveys were conducted in fall 2019. The purpose of conducting these updates was to ensure that species determined absent from the study area are not present (i.e., California red-legged frog, southern mountain yellow-legged frog, southwestern willow flycatcher, western yellow-billed cuckoo, and special status fish upstream of BTR), and to determine the current abundance of species known to occur in the study area (i.e., arroyo toad, western pond turtle, and least Bell's vireo).

TABLE 4-6
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species[a, b]	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Invertebrates				
Bombus crotchii Crotch bumble bee	—	CE	—	May occur; suitable habitat.
Fish				
Catostomus santaanae Santa Ana sucker	FT	—	FT	Observed; suitable habitat present. Observed downstream of the dam during 2011 focused surveys (not observed in plunge pool). Absent from BTR and upstream of BTR during 2011 and 2019 focused surveys.
Gila orcuttii arroyo chub	—	SSC	FSS	Observed; suitable habitat present. Observed downstream of the dam and in the plunge pool during 2011 focused surveys; incidentally observed downstream of the plunge pool during 2018 amphibian surveys. Absent from BTR and upstream of BTR during 2011 and 2019 focused surveys.
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	—	SSC	FSS	Observed; suitable habitat present. Observed downstream of the dam during 2011 focused surveys (not observed in plunge pool). Absent from BTR and upstream of BTR during 2011 and 2019 focused surveys.
Amphibians				
Anaxyrus californicus arroyo toad	FE	SSC	FE	Observed; suitable habitat present. One individual observed upstream of BTR along Big Tujunga Creek during 2011, 2017, and 2018 focused surveys. Absent downstream of the dam during 2016 focused surveys.

TABLE 4-6
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species[a, b]	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Spea hammondii western spadefoot	—	SSC	—	Limited potential to occur; potentially suitable habitat present. However, the project is higher elevation than most occurrences. Additionally, not observed during 2011, 2016, 2017, or 2018 amphibian surveys.
Rana draytonii California red-legged frog	FT	SSC	FT	Not expected to occur; suitable habitat. However, not observed during 2018 focused surveys. Additionally, not observed during 2011, 2016, or 2017 amphibian surveys.
Rana muscosa southern mountain [Sierra Madre] yellow-legged frog	FE	SE/ WL	FE	Not expected to occur; suitable habitat present. However, not observed during 2011, 2016, 2017, or 2018 focused surveys.
Taricha torosa Coast Range newt	—	SSC	—	May occur; potentially suitable habitat present.
Reptiles				
Anniella stebbinsi [pulchra pulchra] Southern California [silvery] legless lizard	—	SSC	FSS	May occur; potentially suitable habitat present.
Arizona elegans occidentalis California glossy snake	—	SSC	—	May occur; potentially suitable habitat present.
Aspidoscelis tigris stejnegeri coastal whiptail	—	SSC	—	Observed; suitable habitat present. Incidentally observed upstream of BTR during 2011, 2017, and 2018 focused surveys.
Charina trivirgata [*Lichanura orcutti*] northern three-lined boa [coastal rosy boa]	—	—	FSS	Not expected to occur; not historically known from Big Tujunga Creek.
Diadophis punctatus modestus San Bernardino ring-neck snake	—	—	FSS	Observed; suitable habitat present. Incidentally observed downstream of BTR during 2016 focused surveys.
Emys marmorata western pond turtle	—	SSC	FSS	Observed; suitable habitat present. Incidentally observed in BTR, as well as upstream and downstream of BTR, during 2011, 2016, 2017, and 2018 focused surveys. Focused surveys for western pond turtle visually observed two pond turtles upstream of BTR and captured three pond turtles downstream of the dam.
Phrynosoma blainvillii coast horned lizard	—	SSC	—	Observed; suitable habitat present; Incidentally observed in BTR during 2017 focused surveys.
Thamnophis hammondii two-striped garter snake	—	SSC	FSS	Observed; suitable habitat present. Incidentally observed upstream of BTR during 2011, 2016, 2017, and 2018 focused surveys.
Birds				
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	—	WL	—	Observed; suitable habitat present. Incidentally observed downstream of BTR during 2012 focused surveys.

TABLE 4-6
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species[a, b]	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Aquila chrysaetos golden eagle	—	WL/FP	—	May occur; potentially suitable foraging and nesting habitat.
Athene cunicularia burrowing owl	—	SSC	—	Not expected to occur; no suitable habitat present.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT	SE	FT	Not expected to occur; not observed during 2018 focused surveys; limited amount of potentially suitable habitat downstream of BTR; no suitable habitat upstream of BTR.
Cypseloides niger black swift	—	SSC	—	May occur; potentially suitable habitat present.
Empidonax traillii extimus southwestern willow flycatcher	FE	SE	FE	Limited potential to occur; suitable habitat present upstream and downstream of BTR. No breeding willow flycatcher observed during 2012, 2016, or 2018 focused surveys; however, migrant willow flycatcher observed during 2012, 2016, 2017, and 2018 focused surveys.
Falco peregrinus anatum American peregrine falcon	Delisted	Delisted /FP	—	Observed; suitable habitat present. Incidentally observed during 2011, 2016, 2017, 2018 focused surveys.
Haliaeetus leucocephalus bald eagle	Delisted	SE/FP	FSS	May occur; suitable foraging and nesting habitat present. No previous nesting records at Big Tujunga Reservoir.
Icteria virens yellow-breasted chat	—	SSC	—	Observed; suitable habitat present. Incidentally observed downstream of BTR during 2016 focused surveys.
Lanius ludovicianus loggerhead shrike	—	SSC	—	Observed; suitable habitat present. Incidentally observed north of BTR (outside the Project area) during 2011 focused surveys.
Polioptila californica californica coastal California gnatcatcher	FT	SSC	FT	Not expected to occur; outside known elevational range.
Riparia riparia bank swallow	—	FT	—	May occur; potentially suitable habitat present.
Setophaga petechia yellow warbler	—	SSC	—	Observed; suitable habitat present. Incidentally observed throughout study area during 2012, 2016, 2017, and 2018 focused surveys.
Vireo bellii pusillus least Bell's vireo	FE	SE	FE	Observed; suitable habitat present upstream and downstream of BTR. Incidentally observed upstream of BTR during 2017 focused surveys for arroyo toad; not observed during 2012, 2016, or 2018 focused surveys.
Mammals				
Antrozous pallidus pallid 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.
Eumops perotis californicus western mastiff bat	—	SSC	—	May occur; potentially suitable foraging and roosting habitat present.

TABLE 4-6
SPECIAL STATUS WILDLIFE SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species[a, b]	Status			Likelihood for Occurrence
	USFWS	CDFW	USFS	
Lasionycteris noctivagans silver-haired bat	—	SA	—	May occur; potentially suitable foraging and roosting habitat present.
Lasiurus blossevillii western red bat	—	SSC	—	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.
Puma concolor Mountain lion	—	CE	—	Expected to occur; suitable habitat present.

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

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
CE Candidate for Endangered
CT Candidate for Threatened
FP California Fully Protected

Forest Service Status
FSS Forest Service Sensitive Species

Note:
[a] Scientific and common names for special status wildlife species follow the most current list of Special Animals available from the California Department of Fish and Wildlife (CDFW 2021e).
[b] 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.

Invertebrates

Crotch Bumble Bee

The Crotch bumble bee (*Bombus crotchii*) is currently a Candidate to be State listed as Endangered. The CDFW is in the process of reviewing the petition for listing and evaluating available information. The CDFW status review report was expected on December 28, 2020; in June 2021, the status has not yet been updated (CDFW 2021c). The Crotch bumble bee is a ground nester and often makes its nest in abandoned mammal burrows and can be found in most native habitat types, although it prefers grassland and scrub habitats. It is primarily associated with plants from the following families: *Fabaceae, Apocynaceae, Asteraceae, Lamiaceae,* and

Boraginaceae (Richardson 2017, Thorp et. al. 1983). Grassland and scrub habitat, as well as several plant species from these families are present; therefore, suitable habitat is present for this species. This species has been recently observed at several locations in the Project region. The nearest observations of this species were in 2017 at Charlton Flats Picnic Area, approximately 10 miles northeast from the Project, and in 2019 at the Theodore Payne Gardens, approximately 10 miles southeast of the Project (CDFW 2021a). Therefore, this species may occur.

Fish

Santa Ana Sucker

The Santa Ana sucker is a federally listed Threatened species. 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 abundance is higher with a higher percent cover of cobble substrate and a higher percent riffle habitat (BonTerra Psomas 2019a).

During the August 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) (BonTerra Consulting 2011d, Psomas 2019b; see Exhibit 4-67). No Santa Ana suckers were observed in BTR or upstream of the reservoir along Big Tujunga Creek during focused surveys in 2011 or 2019.

Focused surveys for Santa Ana sucker were not updated in 2016 because LACFCD conducts long-term monitoring of the Santa Ana sucker population downstream of the dam annually. It should be noted that the long-term monitoring is a sampling of 22, 25-meter reaches from the dam downstream to the Delta Flats; it is not a comprehensive survey of the entire wash. However, monitoring using electrofishing is more quantitative than a focused survey would be, so the count of fish in this sampling of 22 reaches gives a relative idea of whether the population is increasing or decreasing from year to year. The total number of Santa Ana sucker observed in the 22 reaches from 2011 to 2017 is shown below in Table 4-7 (Psomas 2017c, 2018, 2019a). Although 2016–2017 was a more normal rainfall year, it was following five consecutive years of drought in Southern California; the number of Santa Ana sucker have been declining rapidly as stream habitat conditions have been unfavorable. Although the number of Santa Ana sucker fluctuates over time, and the number of individuals is currently much lower than it was in 2011, the Big Tujunga Creek downstream of the dam is consistently occupied by Santa Ana sucker.

TABLE 4-7
TOTAL NUMBER OF SANTA ANA SUCKER OBSERVED DURING LONG-TERM MONITORING ALONG BIG TUJUNGA WASH

Year	2011 Santa Ana Sucker Population Estimate	2012 Santa Ana Sucker Population Estimate	2013 Santa Ana Sucker Captured	2014 Santa Ana Sucker Captured	2015 Santa Ana Sucker Observed [a]	2016 Santa Ana Sucker Observed[b]	2017 Santa Ana Sucker Observed[b]	2018 Santa Ana Sucker Captured
Total	1,255	710	87	55	20	5	6	9

Source: Psomas 2017c, 2018e, 2019a

[a] In all years except for 2015, the methodology used to sample fish was electrofishing. In 2015, only snorkel surveys were conducted. It should be noted that the target species was Santa Ana sucker, but other special status fish species incidentally observed were also counted. At these low population numbers, snorkel surveys have been found to have results that were similar to or better than electrofishing (Psomas 2017c); thus, it is expected that the 2015 number should be representative of the number of fish present that year.

[b] The total Santa Ana sucker shown for 2016 and 2017 is the combined total of suckers observed during electrofishing and snorkeling surveys of the same reaches.

On December 14, 2010, the USFWS published the Final Revised Critical Habitat designating 9,331 acres of habitat along the Santa Ana River in San Bernardino, Riverside and Orange Counties, and the San Gabriel River and Big Tujunga Creek in Los Angeles County. Unit 3A of the Revised Critical Habitat includes the mainstem of Big Tujunga Creek from Big Tujunga Dam to Hansen Dam and Haines Creek. Unit 3B contains three currently unoccupied tributaries to Big Tujunga Creek: Gold Canyon, Delta Canyon, and Stone Canyon Creeks. These additional unoccupied tributaries were designated to maintain transport of sediment necessary to maintain preferred substrates in Big Tujunga Creek. The Project area is located within Unit 3A, which includes the plunge pool and Big Tujunga Creek downstream of BTR (USFWS 2010, Exhibit 4-7). It should be noted that although it is designated as Critical Habitat, there is no suitable habitat for Santa Ana sucker in the plunge pool.[15]

Arroyo Chub

Arroyo chub is a California Species of Special Concern and Forest Service Sensitive species. 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 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, Psomas 2019a; see Exhibit 4-5). No arroyo chubs were observed in BTR or upstream of the reservoir along Big Tujunga Creek during focused surveys in 2011 or 2019. Arroyo chub were incidentally observed downstream of the plunge pool during special status amphibian surveys in 2018.

Focused surveys for arroyo chub were not updated in 2016 because LACFCD conducts long-term monitoring of the Santa Ana sucker population downstream of the dam annually and the number of arroyo chub observed is incidentally recorded (Psomas 2017c, 2018e, 2019a). It should be noted that the long-term monitoring is a sampling of 22, 25-meter reaches from the dam downstream to Delta Flats; it is not a comprehensive survey of the entire wash. However, monitoring using electrofishing is more quantitative than a focused survey would be, so the count of fish in this sampling of 22 reaches gives a relative idea of whether the population is increasing

[15] When designating critical habitat, the USFWS uses large scale maps to delineate areas of suitable habitat; they sometimes designate areas that appear to be suitable from maps but turn out not to be suitable in the field when a habitat assessment is conducted by a species expert.

or decreasing from year to year. The number of arroyo chub observed from 2011 to 2017 is shown below in Table 4-8. Although 2016–2017 was a more normal rainfall year, it was following five consecutive years of drought in Southern California; the number of arroyo chub have declined as stream habitat conditions have been unfavorable. Although the number of arroyo chub fluctuates over time, and the number of individuals is currently lower than it was in 2011, the Big Tujunga Creek downstream of the dam is consistently occupied by arroyo chub.

TABLE 4-8
TOTAL NUMBER OF ARROYO CHUB OBSERVED DURING LONG-TERM MONITORING ALONG BIG TUJUNGA WASH

Year	2011 Arroyo Chub Population Estimate	2012 Arroyo Chub Population Estimate	2013 Arroyo Chub Captured	2014 Arroyo Chub Captured	2015 Arroyo Chub Observed[a]	2016 Arroyo Chub Observed	2017 Arroyo Chub Observed	2018 Arroyo Chub Population Estimate
Total	1,884	2,728	1,089	2,263	1,064	1,093	860	1,474

Source: Psomas 2017c, 2018e, 2019a

[a] In all years except for 2015, the methodology used to sample fish was electrofishing. In 2015, only snorkel surveys were conducted. It should be noted that the target species was Santa Ana sucker, but arroyo chub incidentally observed were also counted. At these low population numbers, snorkel surveys have been found to be similar to electrofishing (Psomas 2017c); thus, it is expected that the 2015 number should be representative of the number of fish present that year.

Santa Ana Speckled Dace

Santa Ana speckled dace is a California Species of Special Concern and Forest Service Sensitive species. 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, Psomas 2019b; see Exhibit 4-5). No Santa Ana speckled dace were observed in BTR or upstream of the reservoir along Big Tujunga Creek during focused surveys in 2011 or 2019.

Focused surveys for Santa Ana speckled dace were not updated in 2016 because LACFCD conducts long-term monitoring of the Santa Ana sucker population downstream of the dam annually and the number of Santa Ana speckled dace observed is incidentally recorded (Psomas 2017c, 2018e, 2019a). It should be noted that the long-term monitoring is a sampling of 22, 25-meter reaches from the dam downstream to Delta Flats; it is not a comprehensive survey of the entire wash. However, monitoring using electrofishing is more quantitative than a focused survey would be, so the count of fish in this sampling of 22 reaches gives a relative idea of whether the population is increasing or decreasing from year to year. The number of Santa Ana speckled dace observed from 2011 to 2017 is shown below in Table 4-9. Although 2016–2017 was a more normal rainfall year, it was following five consecutive years of drought in Southern California; the number of Santa Ana speckled dace have been declining rapidly as stream habitat conditions have been unfavorable. Although the number of Santa Ana speckled dace fluctuates over time, and the number of individuals is currently much lower than it was in 2011, the Big Tujunga Creek downstream of the dam is consistently occupied by Santa Ana speckled dace.

TABLE 4-9
TOTAL NUMBER OF SANTA ANA SPECKLED DACE OBSERVED DURING LONG-TERM MONITORING ALONG BIG TUJUNGA WASH

Year	2011 Santa Ana Speckled Dace Population Estimate	2012 Santa Ana Speckled Dace Population Estimate	2013 Santa Ana Speckled Dace Captured	2014 Santa Ana Speckled Dace Captured	2015 Santa Ana Speckled Dace Observed[a]	2016 Santa Ana Speckled Dace Observed	2017 Santa Ana Speckled Dace Observed	2018 Santa Ana Speckled Dace Observed
Total	3,215	1,879	146	217	78	25	29	32

Source: Psomas 2017c, 2018e, 2019a

[a] In all years except for 2015, the methodology used to sample fish was electrofishing. In 2015, only snorkel surveys were conducted. It should be noted that the target species was Santa Ana sucker, but Santa Ana speckled dace incidentally observed were also counted. At these low population numbers, snorkel surveys have been found to be similar to electrofishing (Psomas 2017c); thus, it is expected that the 2015 number should be representative of the number of fish present that year.

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). Stream substrates range from sands to small cobble, with sandy banks supporting mule fat, willows, cottonwoods, and/or sycamores. The arroyo toad breeds both within streams and in small backwater pools that form along the stream margins, usually in relatively shallow water (four inches) with sand or gravel substrate.

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.

Focused surveys for arroyo toad upstream of the reservoir were not updated in 2016 because the area upstream was already known to be occupied by arroyo toad. However, focused surveys were updated in 2017 to provide additional information for Project permitting. As with the previous survey in 2011, one individual adult male was observed during surveys conducted on May 23, 31, and June 7, 2017. While this particular toad was observed vocalizing on May 31 and June 7, no evidence of successful breeding was detected in the survey area on these or subsequent visits. The locations of the arroyo toad observations are presented on Exhibits4-5 and 4-6.

The area downstream of the dam was not surveyed for arroyo toad in 2011 because, at the time of the surveys, it was believed that a previous survey had covered this area. However, during preparation of the 2011 IS/MND, it was discovered that the previous survey began one mile downstream of the dam; thus, the segment of Big Tujunga Wash from the dam to one mile downstream had never been surveyed for arroyo toad. While it was believed that arroyo toad did

not occur downstream of the dam because habitat conditions were only marginally suitable for the species, and they had not been found during other surveys of the area downstream of the dam, the actual presence or absence of arroyo toad immediately (within one mile) downstream of the dam was unknown. Therefore, the 2011 IS/MND assumed presence of arroyo toad downstream of the dam and included an analysis of indirect impacts that could occur as a result of the project if the species were present downstream of the dam. Focused surveys for arroyo toad were conducted in 2016 (Appendix B-3) and confirmed that arroyo toad is absent from the area downstream of the dam (BonTerra Psomas 2016c). This is consistent with the results of previous focused surveys that were conducted over a 15-mile area from 1 mile downstream of the Big Tujunga Dam to Hansen Dam and found arroyo toad to be absent from this area (BonTerra Consulting 2011c). Therefore, the arroyo toad is not expected to occur downstream of Big Tujunga Dam.

Focused surveys for special status amphibian species (including a modified protocol for arroyo toad) were updated in spring/summer 2018 throughout the Project area to determine the current abundance of this species upstream of BTR and to confirm the absence of the species downstream of BTR. As with the previous surveys, only one individual adult male was observed during the 2018 surveys (see Exhibit 4-5, Psomas 2018b). While the toad was observed vocalizing on May 18, 2018, no evidence of successful breeding was detected in the survey area on this or on subsequent visits. No arroyo toad were observed downstream of BTR.

On February 9, 2011, the USFWS published a Final Revised rule designating 98,366 acres of Critical Habitat for the arroyo toad in portions of Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties, California (USFWS 2011). 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 4-6 shows the designated Critical Habitat for the arroyo toad located in the upper portion of the Project area, upstream of BTR.

California Red-legged Frog

The California red-legged frog is a federally Threatened species. It historically occurred from sea level to approximately 5,200 feet above msl in coastal drainages in the Coast Ranges of California from Mendocino County south to northern Baja California, Mexico. It also occurred in the Sacramento Valley and into the Sierra Nevada foothills south to Tulare County (CalHerps 2016). It has been extirpated from about 70 percent of its former range and is now only found in small populations from Marin County in central California south (USFWS 2016). California red-legged frog requires moist habitats such as perennial streams, lakes, ponds, reservoirs, marshes, or ephemeral wetlands with nearby moist habitat for aestivation when wetlands are dry (CalHerps 2016). There have been no documented observations of California red-legged frog within the watershed, although they have been observed in surrounding watersheds (CDFW 2021a). Although no protocol level focused surveys have been conducted specifically focused on California red-legged frog, it is assumed that the species would have been detected during the 2011, 2016, and/or 2017 focused surveys for arroyo toad and southern mountain yellow-legged frog if it were present. A focused survey for California red-legged frog was conducted in 2009 from one mile downstream of Big Tujunga Dam to upstream of Hansen Dam and the species was determined to be absent (BonTerra Consulting 2010). Therefore, California red-legged frog is not

expected to occur in the Project area. Focused surveys for special status amphibians were conducted in spring/summer 2018 to confirm the absence of this species in the Project area; no California red-legged frog were observed (Psomas 2018b).

On March 17, 2010, the USFWS published a revised final rule designating 1,636,609 acres of Critical Habitat for the California red-legged frog in 27 counties in California (USFWS 2010). The Project area is not within the designated Critical Habitat for this species.

Southern Mountain [Sierra Madre] Yellow-Legged Frog

The southern mountain [Sierra Madre] yellow-legged frog is a federally and state-listed Endangered species. The southern distribution of the southern mountain 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 southern mountain 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.

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

In 2016, focused surveys for southern mountain yellow-legged frog were updated and covered both the area upstream of the reservoir, including assessing habitat inside tributaries, and the area downstream of the dam. No southern mountain [Sierra Madre] yellow-legged frogs were observed during focused surveys conducted from June through September 2016 (BonTerra Consulting 2016).

Focused surveys for special status amphibian species (including the southern mountain yellow-legged frog) were updated in spring/summer 2018 throughout the Project area to confirm the absence of the species in the Project area; no southern mountain yellow-legged frog were observed (Psomas 2018b).

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 a California Species of Special Concern. 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, 2017, and 2018 (BonTerra 2012a, 2011c, 2011d; Psomas 2017b, Psomas 2018b) (Exhibit 4-5).

San Bernardino Ringneck Snake

San Bernardino ringneck snake (*Diadophis punctatus modestus*) is a California Special Animal and a Forest Service Sensitive Species. This subspecies occurs in Ventura, Los Angeles, San Bernardino, Orange, and Riverside counties. Many taxonomists no longer recognize subspecies of this species; however, CDFW continues to track subspecies of ringneck snake. This small snake is found in relatively rocky areas with grasslands and chaparral habitats (Zeiner 1988). Suitable habitat is present throughout the upland habitats in the study area. Ringneck snake was incidentally observed during the 2016 focused surveys (BonTerra Psomas 2016c). The location of the ringneck snake observation is presented on Exhibit 4-5.

Western Pond Turtle

The 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 western 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 western pond turtle was previously observed downstream of the Project area in Big Tujunga Creek south of the dam (approximately 2 miles and eight miles downstream) and approximately 6 miles upstream at the confluence of Upper Big Tujunga Creek and Lynx Gulch. One western pond turtle was observed in BTR during focused turtle trapping in 2011 (BonTerra 2012b). Additionally, it was observed during focused surveys in 2016 and 2017. The western pond turtle was incidentally observed both upstream and downstream of BTR during special status amphibian surveys in 2018 (Psomas 2018b). During the 2018 western pond turtle visual surveys and trapping, two individuals were visually observed upstream of BTR and three individuals were trapped downstream of the dam (Psomas 2018a). The locations of the western pond turtle observations are presented on Exhibit 4-5.

Coast Horned Lizard

Coast horned lizard (*Phrynosoma blainvillii*) is a California Species of Special Concern. This lizard species occurs in open areas with sandy soil in grasslands, coniferous forests, woodlands, chaparral, sandy washes, and dirt roads. It occurs from sea level to 8,000 feet above msl. Coast horned lizard was incidentally observed upstream of BTR during focused surveys in 2017 (Psomas 2017b) (Exhibit 4-5).

Two-Striped Garter Snake

Two-striped garter snake is a California Species of Special Concern and a Forest Service Sensitive Species in the Angeles National Forest. 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, 2016, 2017, and 2018 (BonTerra 2012a, 2011c, 2011d; Psomas 2017b, Psomas 2018b) (Exhibit 4-5).

Birds

Southern California Rufous-crowned Sparrow

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a California Watch List species. This species occurs on steep, dry, rocky hillsides with grassland and scattered shrubs or small trees, such as sagebrush or scrub oaks (Cornell 2018). Recently burned areas provide good, open habitat; this species tends to avoid areas of dense shrubs (Cornell 2018). Suitable habitat is present throughout the upland habitats in the study area. Southern California rufous-crowned sparrow was incidentally observed upstream of the dam during the 2012 focused surveys (BonTerra Consulting 2012). The location of Southern California rufous-crowned sparrow observations is presented on Exhibit 4-5.

Western Yellow-billed Cuckoo

Western yellow-billed cuckoo is a federally Threatened and State-listed Endangered species. The western yellow-billed cuckoo was listed as a Distinct Population Segment (DPS) and includes locations west of the Rocky Mountains, including those in Washington, Idaho, Montana, Oregon, California, Nevada, Wyoming, Utah, Colorado, Arizona, New Mexico, and Texas (USFWS 2014). This species occurs in well-developed riparian forests often dominated by cottonwoods and willows surrounded by arid landscapes. Yellow-billed cuckoo mainly nests in riparian habitat several hundred acres in size; however, in some portions of their range, they will nest in patches as small as 12.4 acres (Halterman et al. 2015). The area upstream of BTR is not considered suitable habitat because it is comprised only of riparian herb and scrub vegetation types; there is no mature riparian forest upstream of BTR. The area downstream of BTR is considered marginally suitable for the species due to its limited size and it has a limited potential to occur. No focused surveys have been conducted for western yellow-billed cuckoo because the extent of riparian habitat was considered too limited. Additionally, there are no known breeding locations in proximity to the Project area. However, due to the recent observations of cuckoo in small habitat patches, focused surveys were conducted in summer 2018 to confirm the absence of this species; no western yellow-billed cuckoo were observed (Psomas 2018d).

On August 15, 2014, the USFWS published a Proposed Rule to designated Critical Habitat for the western yellow-billed cuckoo on 546,335 acres of habitat for the species in Arizona, California, Colorado, Idaho, Nevada, New Mexico, Texas, Utah, and Wyoming; the Proposed Rule has yet to be finalized (USFWS 2014). The Project area is not within the Critical Habitat for this species.

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, 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 the 2012 focused surveys.

The location upstream of BTR was not recorded since the observation was of a migrant and not a breeding individual. In 2016, protocol focused surveys for southwestern willow flycatcher were updated. Again, only migrants of unknown subspecies were observed; no breeding southwestern willow flycatchers were observed.

During vegetation mapping for the HCP in August 2017, one willow flycatcher was observed along Big Tujunga Creek upstream of BTR. During the late summer, multiple willow flycatcher subspecies are beginning migration and pass through Southern California on their way to the wintering grounds; therefore, it is unknown which subspecies was observed. The location of this individual is shown on Exhibit 4-56.

Focused surveys for this species were updated in spring/summer 2018 to confirm the absence of southwestern willow flycatcher from the Project area. No breeding southwestern willow flycatchers were observed; several migrant willow flycatchers of unknown species were observed during the survey (Exhibit 4-5, Psomas 2018c).

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 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). It was formerly a federally and State-listed Endangered species but has since recovered and was delisted by the USFWS and the State of California in 1999 and 2009, respectively. As a delisted species, the USFWS has continued to monitor its population (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 have been incidentally observed in the Project area in approximately the same location during the 2011, 2016, 2017, and 2018 focused surveys (BonTerra 2012a, 2011d, 2016; Psomas 2017b, Psomas 2018c) (see Exhibit 4-5). All designated Critical Habitat for American peregrine falcon was removed upon publication of the Final Rule delisting this species (USFWS 1999).

Yellow-breasted Chat

Yellow-breasted chat is a California Species of Special Concern. This species occurs in early successional riparian habitat with a well-developed shrub layer and an open canopy (Comrack 2008). Nests are typically placed in thickets of dense shrubs, while taller trees are needed for singing perches (Comrack 2008). This species has declined due to brown-headed cowbird parasitism; its numbers have increased in areas with extensive cowbird trapping control programs (Comrack 2008). Suitable habitat is present throughout the riparian habitats in the study area. Yellow-breasted chat was incidentally observed downstream of the dam during the 2016 focused surveys (BonTerra Psomas 2016c). The location of yellow-breasted chat observations is presented on Exhibit 4-5.

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 north of BTR during the 2011 focused surveys (BonTerra 2012b) (Exhibit 4-5).

Yellow Warbler

Yellow warbler is a California Species of Special Concern. This species occurs in riparian habitat in close proximity to water or wet meadows (Shuford and Gardali 2008). This species has increased in coastal southern California since the late 1980s in response to habitat restoration and brown-headed cowbird control programs conducted to help the least Bell's vireo (Shuford and Gardali 2008). Suitable habitat is present throughout the riparian habitats in the study area. Approximately three to five yellow warblers were incidentally observed upstream of BTR and approximately six to eight yellow warblers were incidentally observed downstream of the dam during each year of focused surveys (BonTerra Consulting 2012; BonTerra Psomas 2016b, Psomas 2017b). During the 2012 focused surveys for least Bell's vireo and southwestern willow flycatcher, three to five yellow warblers were observed upstream of BTR and four to six yellow warblers were observed downstream of BTR (BonTerra Consulting 2012). During the 2016 focused surveys for least Bell's vireo and southwestern willow flycatcher, two yellow warblers were observed upstream of BTR and eight yellow warblers were observed downstream of the dam (BonTerra Psomas 2016b). During the 2017 focused surveys for arroyo toad, three yellow warblers were observed upstream of BTR (Psomas 2017b). During the 2018 focused surveys, six yellow warblers were observed downstream of BTR, and seven yellow warblers were observed upstream of BTR (Psomas 2018c). The approximate location of yellow warbler observations over these years is presented on Exhibit 4-5.

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 cowbird 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).

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. Protocol focused surveys were updated in 2016 and confirmed that least Bell's vireo was absent from the study area (BonTerra Psomas 2016b).

During the 2017 focused surveys for arroyo toad along Big Tujunga Creek upstream of the reservoir, a male least Bell's vireo was incidentally observed on multiple survey visits (Psomas 2017b; Exhibit 4-5). A pair of least Bell's vireo was observed on June 14, 2017 feeding one of two fledglings with the second one begging for food. This is the first detection of least Bell's vireo near the Project area.

Focused surveys for this species were conducted in spring/summer 2018 to determine the current number of least Bell's vireo in the Project area. No least Bell's vireo were observed during the 2018 surveys (Psomas 2018c).

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.

Mountain Lion

The mountain lion (*Puma concolor*) is currently a Candidate to be State listed as Threatened as an Evolutionary Significant Unit (ESU) comprised of the following subpopulations: (1) Santa Ana Mountains; (2) Eastern Peninsular Ranges; (3) San Gabriel/San Bernardino Mountains; (4) Central Coast South (Santa Monica Mountains); (5) Central Coast North (Santa Cruz Mountains); and (6) Central Coast Central. The CDFW is in the process of reviewing the petition for listing and evaluating available information. The CDFW status review report is expected in November 2021 (CDFW 2021d). The mountain lion occurs throughout most of California except for the Mojave and Colorado Deserts and the croplands of the Central Valley. Mountain lions occur in a variety of habitats, especially brushy habitats and riparian areas with interspersed irregular terrain, rocky outcrops, and tree/brush edges. Mountain lions use caves, natural cavities, and thickets for cover. Mountain lions use habitat connections for movement among fragmented core habitat (Zeiner 1988). A major threat to this species is fragmentation of habitat by spread of human developments and associated roads. Estimates of effective population size highlight genetic isolation and raise significant concerns for viability in Southern California and the Central Coast (Center for Biological Diversity 2019).

4.4.2 IMPACT ANALYSIS

Regulatory Requirements

RR BIO-1 The LACFCD will obtain all necessary permits for impacts to "waters of the United States" and "waters of the State" from applicable resource agencies, including the California Department of Fish and Wildlife (CDFW), the Los Angeles Regional Water Quality Control Board (RWQCB), the United States Army Corps of Engineers (USACE), and the corresponding Section 7 Consultation with the U.S. Fish and Wildlife Service.

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 its Critical Habitat occur upstream of BTR. The federally and State Endangered least Bell's vireo also occurs

upstream of BTR and may occur downstream of the dam. Greata's aster, considered Threatened and Endangered in California and elsewhere by CNPS, also occurs upstream of BTR. The federally Threatened Santa Ana sucker and its Critical Habitat occur downstream of the dam. Several other special status plant and wildlife species have potential to occur in habitats within or adjacent to the Project area. Impacts on special status species are discussed below.

Special Status Plants

In 2011, all individuals of Greata's aster that were observed were outside of the impact footprint. During the 2016 surveys, a new population of Greata's aster, consisting of five individuals, was observed within the sediment removal footprint at the upper end of the reservoir (Exhibit 4-5). These individuals were observed in bloom early in surveys as five small individuals. These individuals may have been a few seedlings washed down from an upstream population and may not be an established population that could persist from year to year. Another pre-construction survey conducted during the blooming period of this species would be necessary to determine whether this population is established. Although not formally listed under the federal or State Endangered Species Acts, Greata's aster is a California Rare Plant Rank (CRPR) 1B.3 species, which is considered rare, threatened, or endangered within its range, but is not very endangered in California (less than 20 percent of its populations are threatened). Where this species has been observed in the region, this species tends to occur in small numbers (CDFW 2021a). Therefore, the loss of five of the ten individuals of Greata's aster in the survey area would be considered potentially significant. Any impact on Greata's aster would be considered significant because this species is considered to meet the criteria of Section 15380 of the CEQA Guidelines.[16]

Implementation of MM BIO-1, requiring a pre-construction survey, and either avoidance of observed location(s) or preparation of a Greata's Aster Relocation Plan (GARP), would reduce this impact to less than significant.

In 2011, 48 San Gabriel oak were observed in the survey area. In 2016, 84 San Gabriel oak were observed. The large increase in the number of San Gabriel oak was likely due to survey timing—acorn production was at a peak during the final 2016 survey and individuals were easily visible in dense chaparral vegetation. The majority of the new individuals were observed outside the impact footprint, which is consistent with the results of the previous IS/MND analysis. However, one new population of San Gabriel oak, consisting of 10 individuals, was observed within the impact footprint in Maple SPS during the 2016 focused surveys; all individuals in this population would be impacted. Additionally, a few other individuals occur along the southwest edge of the SPS that were not observed in 2011 and may be impacted. Impacts on San Gabriel oak based on the 2016 survey results would be considered adverse, but less than significant because the loss of these individuals would not reduce regional populations below self-sustaining levels. Therefore, no mitigation would be required.

All individuals of Plummer's mariposa-lily and fragrant pitcher sage that were observed during the 2011 and 2016 focused surveys are located outside of the impact footprint. 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. Therefore, no mitigation would be required.

[16] 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.

Each of the special status plants observed are located immediately adjacent to haul routes, staging areas, and sediment placement locations and may be inadvertently impacted by the Project's construction activities (e.g. temporary staging or maneuvering of equipment along road edges). Inadvertent impacts on these CRPR 4.2 species would be considered adverse but less than significant because the loss of a few individuals would not reduce the regional population below self-sustaining numbers. It should be noted that the status of Plummer's mariposa lily has been downgraded since the 2011 IS/MND; it was found to be more common than previously known. Because of this change in status, the mitigation measure to ensure protection of these species, through use of protective fencing of locations within 100 feet of construction activities, is no longer required. However, it has been retained as a mitigation measure (MM BIO-2).

Crotch Bumble Bee

Crotch bumble bee is a generalist species that could use any habitat in the study area. The Project would temporarily impact 23.22 acres of potential habitat in Maple Canyon (14.14 acres of laurel sumac scrub, 2.49 acres of chamise chaparral, 3.83 acres of scrub oak chaparral, 2.68 acres of annual grassland, and 0.08 acre California sycamore woodland). Following the Project, Maple Canyon SPS would be revegetated following the *Draft Maple Canyon Sediment Placement Site Revegetation Plan*. The Project would also temporarily impact 3.37 acres of habitat within the sediment removal footprint (0.13 acre of birch leaf mountain mahogany chaparral, 0.06 white alder grove–willow thicket, 0.17 acre of black willow thicket, 0.23 acre of arroyo willow thicket, 0.46 acre mulefat thicket, 2.29 acres smartweed-cocklebur patch, 0.01 acre freshwater seep, and 0.02 acre of disturbed freshwater seep). These areas would be expected to naturally revegetate following completion of the Project. Project haul routes would use existing roadways; woodland habitats represent trees overhanging the road that may be trimmed, but would not be removed; therefore, they would remain available for foraging by the bumble bee during the Project. Additionally, there is extensive suitable habitat surrounding the Project in the ANF that would be available for use by the bumble bee during the Project.

The Crotch bumble bee nests in burrows in the ground. Removal of vegetation and/or sediment placement in Maple Canyon may impact bumble bee nests or overwintering bumble bees. This could cause mortality of individuals. Individuals could also be struck by vehicles when flying across the haul routes. Pre-construction surveys would avoid and minimize impacts on active nests/burrows of Crotch bumble bee if they occurred in the Maple Canyon SPS portion of the impact area during construction (MM BIO-3). Crotch bumble bees would not be expected to nest in the riparian habitat upstream of BTR because it would be inundated or part of the active stream until dewatering.

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. In preparation for sediment removal, water releases to bring the reservoir to an elevation of 2,188 feet by April 15 would primarily occur during the storm season; dewatering following installation of the bypass line is expected to occur in mid to late April (although it 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, potentially 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 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 analyzed, it can be assumed that the Santa Ana sucker was able to persist during the previous periods of extremely high flows (e.g., 2005, 2006). It should be noted that annual rainfall has been low since this analysis was completed in 2013; therefore, there are no new years of high rainfall to use to update the analysis.

Additionally, while the Santa Ana sucker breeding season begins in March or April, it continues 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. In preparation for sediment removal, releases to bring the reservoir to a target elevation of 2,188 feet are expected to occur during the storm season (October 15 to April 15) to the maximum extent practicable. As described in MM BIO-4, after April 16, water releases would not exceed 180 cfs[17] 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 as flows recede.

As dewatering of the reservoir progresses, the amount of sediment carried in the water could increase as the reservoir becomes closer to the sediment in the bottom of the reservoir. 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, and could therefore result in a potentially significant impact. Therefore, as required by MM BIO-4, 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 downstream of the dam near the plunge pool. Thus, the sucker population downstream would be subject to natural creek flows, which vary depending on annual rainfall (i.e., there would be no supplemental flow releases from the reservoir during the summer months). During typical non-storm season operating procedures, the LACFCD generally releases water from the reservoir at a similar rate as the inflow into the reservoir. An analysis was performed on inflow/outflow data to verify whether water releases during the dry season (i.e., May to September) have typically equaled inflow to the reservoir prior to supplemental releases, which began in 2012. While this time period included a wide range of natural variation with both extremely dry and wet years, the analysis verified that prior to supplemental releases, inflow typically equaled outflow. As noted in the Dewatering Flow Data Memorandum (BonTerra Consulting 2013; see Appendix B-9), September was the only month to show a difference between inflow and outflow(i.e., inflow was greater than outflow), which suggests that September may provide more water during bypass operations (i.e., inflow would be equal to outflow) than

[17] The Big Tujunga Habitat Conservation Plan (HCP) covering long-term operation and maintenance of the dam is currently under development. In HCP meeting discussions and preliminary review of mitigation measures, the USFWS is considering non-storm operational releases of up to 250 cfs. However, to be consistent with the previous project description and mitigation measures for this project, LACFCD has agreed that the maximum release would be 180 cfs during dewatering for the sediment removal project.

has typically been released in this month during normal operations prior to supplemental releases (BonTerra Consulting 2013).

Since the completion of the Seismic Retrofit in 2012, supplemental releases have been made throughout the non-storm season (i.e., outflow equals inflow plus supplemental releases). To date, the supplemental releases have been determined by dividing the amount of supplemental water available on April 15, which is the amount stored over the previous storm season, by the number of days in the non-storm season to provide a continuous rate of release over the non-storm season. During the past several dry years, supplemental releases have ranged from 1 to 3 cfs; however, in wetter years, supplemental releases are expected to be 4 to 5 cfs.

During the Project, supplemental releases would not be available for a period of five years and the downstream system will be entirely dependent on natural conditions (i.e., inflow). A hydraulic model was used to model Big Tujunga Creek from downstream of the Big Tujunga Dam plunge pool to just upstream of the Oro Vista Avenue stream crossing to compare the stream hydraulics with and without supplemental releases between April 15 and October 15 (Appendix B-9). To determine the base flow released during the non-storm season, a discharge series was developed based on the monthly natural inflow to Big Tujunga Reservoir. The discharge series was determined by averaging the inflow to Big Tujunga Reservoir daily for the periods 1998–2009 and 2012–2017 (the Seismic Retrofit Project was occurring between 2009–2012). Daily averaging was completed from April 15 to October 15 of all years on record and then the mean discharge was calculated for each 30-day period (Table 4-10). The supplemental releases were determined by adding 5 cfs to the mean monthly discharge value and running the model over the same six-month series (Table 4-10).

Results indicate that the supplemental releases add from 2.67 to 6.27 acres of additional wetted areas; however, these additional areas are generally limited to flow depths of 1 inch and velocities much less than 1 fps (Tables 4-10 and 4-11). The supplemental releases result in small increases in maximum depth (less than 0.2-ft increase for most of the active stream) and small increases in average depth (average depth increase of 0.8 inch) (Table 4-12). The supplemental releases result in a moderate increase in both maximum velocity (0.2 to 0.4 fps for most of the active stream, larger increases in segments) and a moderate increase in average velocity (average 0.2 fps faster) (Table 4-13, Appendix B-9).

TABLE 4-10
AREA OF INUNDATION WITH AND WITHOUT SUPPLEMENTAL RELEASES

Month	Median Q (cfs) without Supplemental Releases	Median Q (cfs) with Supplemental Releases	Area of Inundation without Supplemental Releases (acres)	Area of Inundation with Supplemental Releases (acres)	Difference (acres)	Percent change (%)
April 15 – May 14	16.4	21.4	41.37	44.04	2.67	6.1
May 15 – June 14	9.7	14.7	36.93	40.58	3.65	9.0
June 15 – July 14	6.4	11.4	34.13	38.47	4.34	11.3
July 15 – August 14	5.0	10.0	32.62	37.44	4.82	12.9
August 15 – September 14	2.8	7.8	29.59	35.66	6.07	17.0
September 15 – October 14	2.6	7.6	29.21	35.48	6.27	17.7

TABLE 4-11
AREAS WETTED BY SUPPLEMENTAL RELEASES

Month	Median Q (cfs) without Supplemental Releases	Median Q (cfs) with Supplemental Releases	Additional Wetted Area (acres)	Average Velocity for Additional Wetted Area (feet per second)	Average Depth for Additional Wetted Area (feet)
April 15–May 14	16.4	21.4	2.67	0.69	0.05
May 15–June 14	9.7	14.7	3.65	0.63	0.06
June 15–July 14	6.4	11.4	4.34	0.60	0.07
July 15– August 14	5.0	10.0	4.82	0.60	0.08
August 15– September 14	2.8	7.8	6.07	0.58	0.09
September 15– October 14	2.6	7.6	6.27	0.57	0.10
Average (whole time series)	N/A	N/A	4.64	0.61	0.08

TABLE 4-12
AVERAGE DEPTH WITH AND WITHOUT SUPPLEMENTAL RELEASES

Month	Median Q (cfs) without Supplemental Releases	Median Q (cfs) with Supplemental Releases	Average Depth without Supplemental Releases (feet)	Average Depth with Supplemental Releases (feet)	Difference (feet)	Percent change (%)
April 15–May 14	16.4	21.4	0.64	0.69	0.05	7.2
May 15–June 14	9.7	14.7	0.57	0.63	0.06	9.5
June 15–July 14	6.4	11.4	0.53	0.59	0.06	10.2
July 15–August 14	5.0	10.0	0.51	0.58	0.07	12.1
August 15– September 14	2.8	7.8	0.47	0.55	0.08	14.5
September 15– October 14	2.6	7.6	0.46	0.55	0.09	16.4
Average (whole time series)	N/A	N/A	0.53	0.60	0.07	11.7

TABLE 4-13
AVERAGE VELOCITY WITH AND WITHOUT SUPPLEMENTAL RELEASES

Month	Median Q (cfs) without Supplemental Releases	Median Q (cfs) with Supplemental Releases	Average Velocity without Supplemental Releases (feet per second)	Average Velocity with Supplemental Releases (feet per second)	Difference (feet per second)	Percent change (%)
April 15–May 14	16.4	21.4	0.81	0.90	0.09	10.0
May 15–June 14	9.7	14.7	0.66	0.77	0.11	14.3
June 15–July 14	6.4	11.4	0.55	0.70	0.15	21.4
July 15– August 14	5.0	10.0	0.50	0.66	0.16	24.2
August 15– September 14	2.8	7.8	0.39	0.60	0.21	35.0
September 15– October 14	2.6	7.6	0.38	0.59	0.21	35.6
Average (whole time series)	N/A	N/A	0.54	0.70	0.20	28.6

As rainfall over the last several years have been below average, supplemental releases have been less than those assumed in the analysis; thus, the increase in area, depth, and stream velocity are assumed to have been a portion of the totals shown above. As stated above, during the Project, the system would be subject to natural conditions (i.e., inflow only) during the non-storm season for a period of five years. During dry years, Big Tujunga Creek may become intermittent with portions of the creek drying. Special status fish would be expected to take refuge in deeper pools that remain wetted throughout the summer. The Santa Ana sucker has persisted in this system through varying wet and dry cycles, including multiple years of drought conditions, prior to the supplemental releases. Thus, the Santa Ana sucker would be expected to continue to persist through the duration of the Project. All available inflow would be conveyed downstream.

Implementation of MM BIO-4 requires preparation of a Special Status Fish Relocation Plan, pre-construction surveys, monitoring and reporting, exclusion measures, water quality BMPs, and conditions during dewatering, as well as consultation between the USACE and the USFWS in accordance with Section 7 of the FESA to ensure compliance with the FESA. Implementation of MM BIO-4 would reduce potential impacts to the Santa Ana sucker related to creek flows and sedimentation during dewatering to levels less than significant. Based on the analysis in the Dewatering Flow Data Memorandum, the Supplemental Release Memorandum, and with the implementation of listed measures, impacts on Santa Ana sucker would be reduced to less than significant.

Arroyo Chub and Santa Ana Speckled Dace

Arroyo chub was found in the plunge pool and downstream during focused surveys; Santa Ana speckled dace was found in the creek just downstream of the plunge pool. The proposed dewatering activities of the plunge pool would reduce the amount of habitat available to the arroyo chub and could directly affect arroyo chub individuals within the plunge pool and any Santa Ana speckled dace at the outflow of the pool. Additionally, these species would be subject to all of the indirect impacts described above for Santa Ana sucker: (1) dewatering could affect breeding; (2) fluctuations in flows during dewatering could strand fish; (3) dewatering could affect water quality downstream; and (4) bypass line would limit summer releases to natural stream conditions. Impacts on arroyo chub and/or Santa Ana speckled dace would be considered potentially

significant because these species are considered to meet the criteria of Section 15380 of the CEQA Guidelines.[18]

Implementation of MM BIO-4 requires preparation of a Special Status Fish Relocation Plan, pre-construction surveys and relocation, monitoring and reporting, exclusion measures, water quality BMPs, and conditions during dewatering. Implementation of MM BIO-4 would reduce potential impacts to the arroyo chub and Santa Ana speckled dace 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, impacts on arroyo chub and Santa Ana speckled dace would be reduced to less than significant.

Arroyo Toad

The sediment removal boundary has been reduced in order to avoid direct impacts on arroyo toad Critical Habitat; however, sediment removal activities would still occur in occupied habitat. The upper end of the reservoir is very stream-like and provides suitable habitat for arroyo toad. Sediment removal activities at the upstream area of Big Tujunga Creek would remove 6.29 acres of habitat for the arroyo toad including 3.08 acres of dry wash, 0.23 acre of arroyo willow thicket, 0.06 acre of white alder grove—willow thicket, 0.17 acre of black willow thicket, 0.46 acre of mulefat scrub, and 2.29 acres of smartweed—cocklebur patch. Construction activities in the creek could directly impact arroyo toad if it occurs within the impact area during vegetation clearing or excavation. Any arroyo toads that inadvertently move into the sediment removal area could be impacted by construction activities, which could either kill aestivating individuals in the sediment or vehicles could strike and kill adults, metamorphs, or tadpoles in the sediment removal area. Any impact on the arroyo toad would be considered significant.

Implementation of MM BIO-5 includes preparation of an Arroyo Toad Relocation Plan, pre-construction surveys, exclusion fencing, and monitoring and reporting. It also requires consultation between the USACE and the USFWS in accordance with Section 7 of the FESA to ensure compliance with the FESA. Compliance with MM BIO-5 would reduce potential impacts on the arroyo toad in upstream areas of Big Tujunga Creek to less than significant.

Least Bell's Vireo/Southwestern Willow Flycatcher

In 2017, least Bell's vireo was found to occur along Big Tujunga Creek upstream of BTR within 500 feet of the sediment removal boundary. No breeding southwestern willow flycatchers have been observed in the study area to date; however, migrant willow flycatcher individuals (undetermined subspecies) have been observed during multiple surveys and southwestern willow flycatcher has potential to occur in the riparian forest and riparian scrub habitats within the sediment removal boundary and within 500 feet of the sediment removal boundary in future years. Sediment removal activities would directly remove 0.9 acre of riparian habitat (0.23-acre of arroyo willow thicket, 0.06-acre white alder grove—willow thicket, 0.17-acre black willow thicket, and 0.46-acre mulefat scrub). Due to the nature of the Project, sediment removal would occur beginning at the end of the rainy season (i.e., April 16 of each year), which is during the breeding season of the least Bell's vireo and southwestern willow flycatcher. Removal of habitat at this time of year could impact the nest of one of these species or could directly remove a portion of the

[18] 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.

habitat within an individual's territory. Additionally, Project activities may cause a least Bell's vireo/southwestern willow flycatcher to abandon their territory or may discourage the individuals from selecting habitat adjacent to the Project due to construction noise and human activity. Sediment removal activities would increase noise in the Project area and the immediate vicinity and could interfere with communication between a pair that could affect their nest success. Direct and indirect impacts on least Bell's vireo and southwestern willow flycatcher (if present during construction) would be considered potentially significant. Implementation of MM BIO-6 includes pre-construction surveys, use of protective buffers/fencing, preparation of a Riparian Bird Construction Plan describing noise-reduction measures, and monitoring and reporting. It also requires consultation between the USACE and the USFWS in accordance with Section 7 of the FESA to ensure compliance with the FESA. Compliance with MM BIO-6 would reduce potential impacts on the least Bell's vireo/southwestern willow flycatcher to less than significant.

Western Pond Turtle

The western pond turtle was found along Big Tujunga Creek upstream of BTR, in BTR, downstream of BTR, and in the plunge pool. The proposed dewatering and sediment removal activities would directly temporarily reduce the amount of open water habitat available for this species, impacting 41.23 acres of open water habitat. Project activities could also inadvertently directly impact western pond turtles aestivating within the sediment removal area. Western pond turtles crossing the haul routes or in the staging areas could also be struck by vehicles. Although vehicles currently move along the existing roadway, the number of vehicles and frequency would increase substantially during construction. Impacts on the western pond turtle would be considered potentially significant because this species is considered to meet the criteria of Section 15380 of the CEQA Guidelines.

Implementation of MM BIO-7 requires pre-construction trapping and relocation of western pond turtles out of the sediment removal area. Compliance with MM BIO-7 would reduce potential impacts on the western pond turtle to less than significant levels after mitigation.

Mountain Lion

The mountain lion is a generalist species that could use any habitat in the study area. The Project would temporarily impact 23.22 acres of potential habitat in Maple Canyon (14.14 acres of laurel sumac scrub, 2.49 acres of chamise chaparral, 3.83 acres of scrub oak chaparral, 2.68 acres of annual grassland, and 0.08 acre California sycamore woodland). Following the Project, Maple Canyon SPS would be revegetated following the *Draft Maple Canyon Sediment Placement Site Revegetation Plan*. The Project would also temporarily impact 3.37 acres of habitat within the sediment removal footprint (0.13 acre of birch leaf mountain mahogany chaparral, 0.06 white alder grove–willow thicket, 0.17 acre of black willow thicket, 0.23 acre of arroyo willow thicket, 0.46 acre mulefat thicket, 2.29 acres smartweed-cocklebur patch, 0.01 acre freshwater seep, and 0.02 acre of disturbed freshwater seep). These areas would be expected to naturally revegetate following completion of the Project. Project haul routes would use existing roadways; woodland habitats represent trees overhanging the road that may be trimmed, but would not be removed; therefore, they would remain available during the Project. Additionally, there is extensive habitat in the ANF surrounding the Project site that would be available for use by mountain lions.

The mountain lion is proposed for State listing due to fragmentation of habitat that isolates populations. As described below under (d), the Project would not cause fragmentation of habitat. Therefore, impacts on mountain lion would be less than significant, and no mitigation is required.

Other Special Status Wildlife

The proposed Project would remove habitat for several other special status wildlife species observed or with potential to occur in the Project area (see Table 4-7). 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, two-striped garter snake has been included in MM BIO-8 because it similarly is an aquatic species that may occur in the direct footprint of the sediment removal area. Mitigation for this species was compatible with the western pond turtle-required measure and would avoid or minimize impacts on the two-striped garter snake.

American peregrine falcon occurs well outside of the Project area therefore no impacts are expected on this 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 4-14. 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 4-14
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	
Sage Scrub						
California Buckwheat Scrub	3.73	0.00	0.00	0.00	0.00	0.00
Disturbed California Buckwheat Scrub	2.32	0.00	0.00	0.00	0.00	0.00
Laurel Sumac Scrub	31.96	0.00	0.00	14.14	0.00	14.14
Alluvial Scrub						
Scale-broom Scrub	1.80	0.00	0.00	0.00	0.00	0.00
Chaparral						
Thick Leaf Yerba Santa Scrub	4.53	0.00	0.00	0.00	0.00	0.00
Chamise Chaparral	22.64	0.00	0.00	2.49	0.00	2.49
Chamise Chaparral–Thick Leaf Yerba Santa Scrub	2.62	0.00	0.00	0.00	0.00	0.00
Scrub Oak Chaparral	24.80	0.00	0.00	3.83	0.00	3.83
Hoary Leaf Ceanothus Chaparral	1.35	0.00	0.00	0.00	0.00	0.00
Birch Leaf Mountain Mahogany Chaparral	61.39	0.13	0.00	0.00	0.00	0.13
Grassland						
Annual Brome Grassland	14.09	0.00	0.00	2.68	0.00	3.26
Ruderal						
Russian Thistle Field	0.37	0.00	0.00	0.00	0.00	0.00
Riparian Forest						
White Alter Grove–California Sycamore Woodland	2.08	0.00	0.00	0.00	0.00	0.00
White Alder Grove–Willow Thicket	6.21	0.06	0.00	0.00	0.00	0.06
California Sycamore Woodland–Red Willow Thicket	0.63	0.00	0.00	0.00	0.00	0.00
Black Willow Thicket	0.17	0.17	0.00	0.00	0.00	0.17
Riparian Scrub						
Arroyo Willow Thicket	7.10	0.23	0.00	0.00	0.00	0.23
Sandbar Willow Thicket	0.16	0.00	0.00	0.00	0.00	0.00
Mulefat Thicket	0.95	0.46	0.00	0.00	0.00	0.46

TABLE 4-14
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	
Riparian Herb						
Smartweed-Cocklebur Patch	2.71	2.29	0.00	0.00	0.00	2.29
Seep						
Freshwater Seep	0.23	0.01	0.00	0.00	0.00	0.01
Disturbed Fresh Water Seep	1.66	0.02	0.02	0.00	0.00	0.04
Forest/Woodland						
Coast Live Oak Woodland	6.06	0.11*	0.10*	0.00	0.00	0.21*
Bigcone Douglas Fir–Canyon Live Oak Forest	2.69	0.00	0.00	0.00	0.00	0.00
California Sycamore Woodland	0.08	0.00	0.00	0.08	0.00	0.08
Ornamental						
Native Planting	8.45	0.00	0.00	0.00	0.00	0.00
Non-Native Planting	1.43	0.00	0.00	0.00	0.11	0.11
Cliff/Rock						
Cliff	27.96	0.52	0.01	1.22	0.00	1.75
Open Water						
Open Water	52.86	41.23	0.13	0.00	0.00	41.36
Alluvium						
Dry Wash	5.51	3.08	0.00	0.00	0.00	3.08
Other Landcover						
Disturbed	6.85	0.00	1.90	0.00	3.06	5.14
Developed/Ornamental	34.83	0.12	15.32	5.23	0.23	20.92
Total	**340.22**	**48.43**	**17.48**	**29.67**	**3.40**	**101.78**

* Coast live oaks located within the impact boundary shown on Exhibit 4-4A and 4-4B represent the tree canopy of coast live oak trees over existing roadways and the plunge pool. The canopy of these oak trees is located over the access roads and plunge pool; the trees would not be removed.

Riparian Resources

The proposed Project's sediment removal activities and staging areas would impact a total of 0.92 acres of riparian forest and riparian scrub vegetation (0.06 acre white alder grove–willow thicket, 0.17 acre black willow thicket, 0.23 acre arroyo willow thicket, and 0.46 acre mulefat thicket). It would also impact 2.29 acres of riparian herb vegetation (2.29 acres smartweed–cocklebur patch) and 0.05 acre of seep vegetation (0.01 freshwater seep, 0.04 disturbed freshwater seep). It is important to note that these aforementioned vegetation types were surveyed in summer and late fall of 2016, when the reservoir water level was very low. The area containing the vegetation is typically fully submerged during storm season; 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. Implementation of MM BIO-9, which requires obtaining regulatory permits from agencies, including a Section 404 Permit from the USACE, a Section 401 Water Quality Certification 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 would impact 0.08 acre of 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.

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

The coast live oak located within the impact boundary shown on Exhibit 4-4B represent the tree canopy of coast live oak trees over existing roadways and the plunge pool. These oak trees are not located on the access roads or in the plunge pool and would not be removed. In the unanticipated event that an oak tree needs to be trimmed or maintained to accommodate trucks along the access road or work in the plunge pool, work would be done or 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.

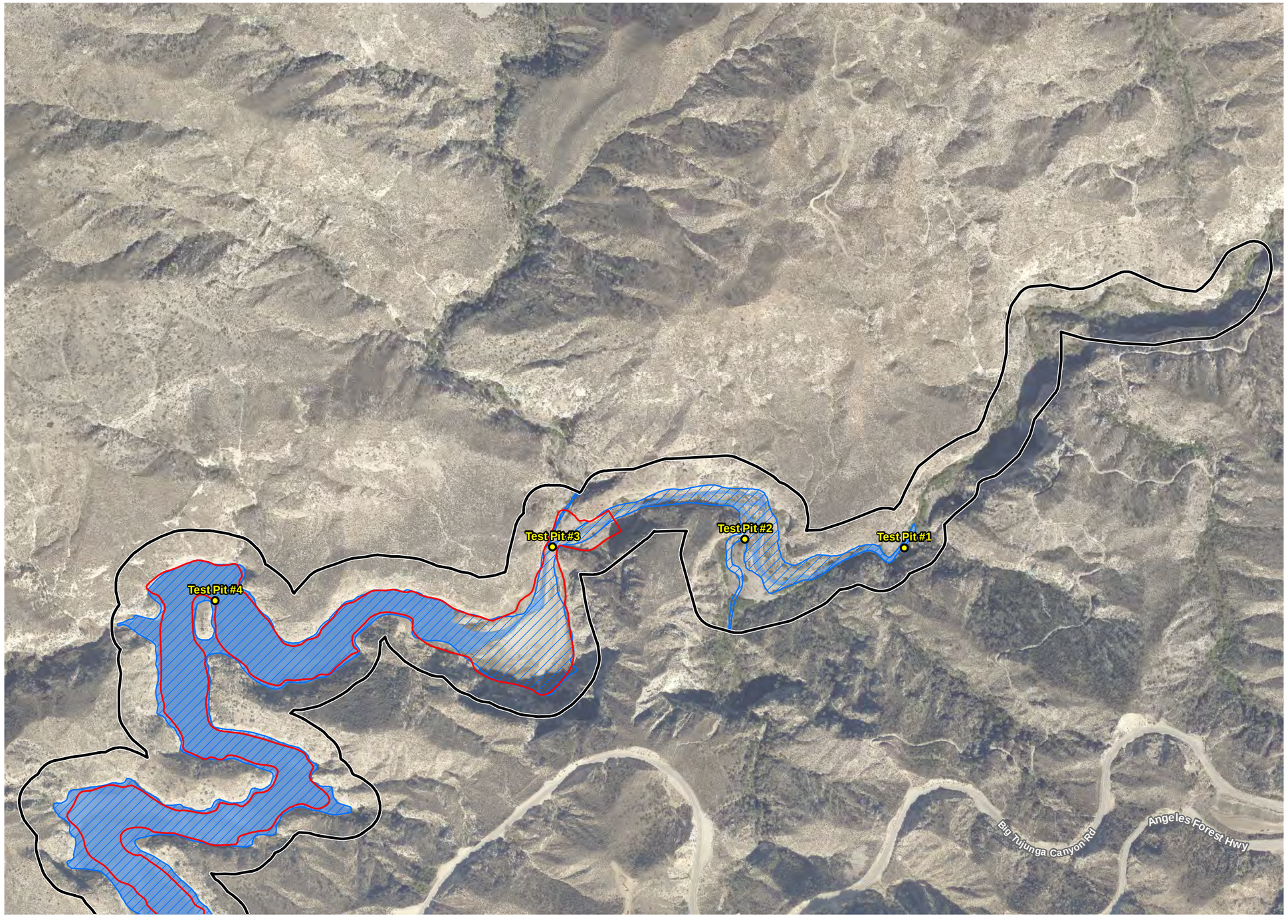
c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

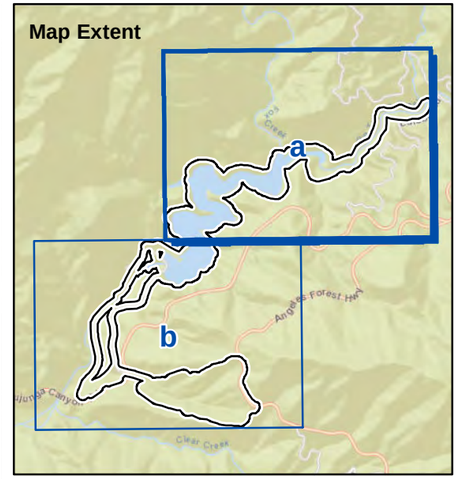
Less than Significant with Mitigation. The proposed Project would not impact any state or federally protected wetlands; there were no wetlands delineated in the Project area during the Jurisdictional Delineation.

Approximately 45.18 acres of non-wetland waters under the jurisdiction of both USACE and RWQCB would be temporarily impacted by the removal of sediment in BTR, and 1.45 acres of non-wetland waters under the jurisdiction of both USACE and RWQCB 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 1.05 acres of non-wetland waters under the jurisdiction of the RWQCB by filling the drainage features in the upper portion of the SPS (Exhibits 4-7A and 4-7B , USACE and RWQCB Jurisdictional Resources; see Table 4-11). A total of 46.63 acres of non-wetland "waters of the U.S." under the jurisdiction of USACE would be temporarily impacted by the Project. A total of 1.05 acres of non-wetland waters under the jurisdiction of RWQCB would be permanently impacted, and a total of 46.63 acres of non-wetland waters under the jurisdiction of RWQCB would be temporarily impacted by the Project.

Approximately 46.02 acres of non-wetland CDFW jurisdictional waters would be temporarily impacted by the removal of sediment in BTR, and 1.45 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 2.11 acres of CDFW jurisdictional waters by filling the drainage features in the upper portion of the SPS (Exhibits 4-8A and 4-8B, CDFW Jurisdictional Resources; see Table 4-15). A total of 2.11 acres of CDFW jurisdictional waters would be permanently impacted, and a total of 47.47 acres of jurisdictional waters would be temporarily impacted by the Project.

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 RWQCB and CDFW jurisdictional areas would be filled with sediment, which would be a potentially significant impact. Implementation of MM BIO-9, which requires obtaining applicable regulatory permits from agencies, would reduce impact to jurisdictional waters to a less than significant level. Applicable permits would include some or all of the following: a Section 404 Permit from the USACE and a Section 401 Water Quality Certification from the RWQCB (which would authorize impacts to the "waters of the U.S." as described in the *CWA*); Waste Discharge Requirements from the RWQCB (which would authorize impacts to the "Waters of the State", as described in the California *Porter-Cologne Act,* that are not subject to federal jurisdiction, unless the RWQCB chooses to include authorization of such impacts in a Water Quality Certification); and a Section 1600 Streambed Alteration Agreement from the CDFW (which would authorize impacts to stream resources that are described in the *California Fish and Game Code*), .





Study Area

Test Pit Location

Open Water*

Areas of Impact

Sediment Removal Disturbance

SPS Limit of Work

USACE/RWQCB Jurisdiction

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

"Waters of the U.S."

RWQCB Jurisdiction

"Isolated Waters of the State" (width in feet)

"Isolated Waters of the State" (concrete channel)

"Isolated Waters of the State"

NOTE: The USACE issued new regulatory text defining waters of the U.S. in 2020. One of the major changes to the definition is that ephemeral waters are no longer subject to USACE regulation under the Clean Water Act. As such, waters of the U.S. in Maple Canyon SPS would no longer be under the jurisdiction of USACE.

*Open water boundaries observed in August 2017, though variable throughout year.
Aerial Source: LAR-IAC 2014

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USACE/RWQCB Jurisdictional Resources

Exhibit 4-7a

Big Tujunga Reservoir Sediment Removal Project

N W E S

600 300 0 600 Feet

PSOMAS

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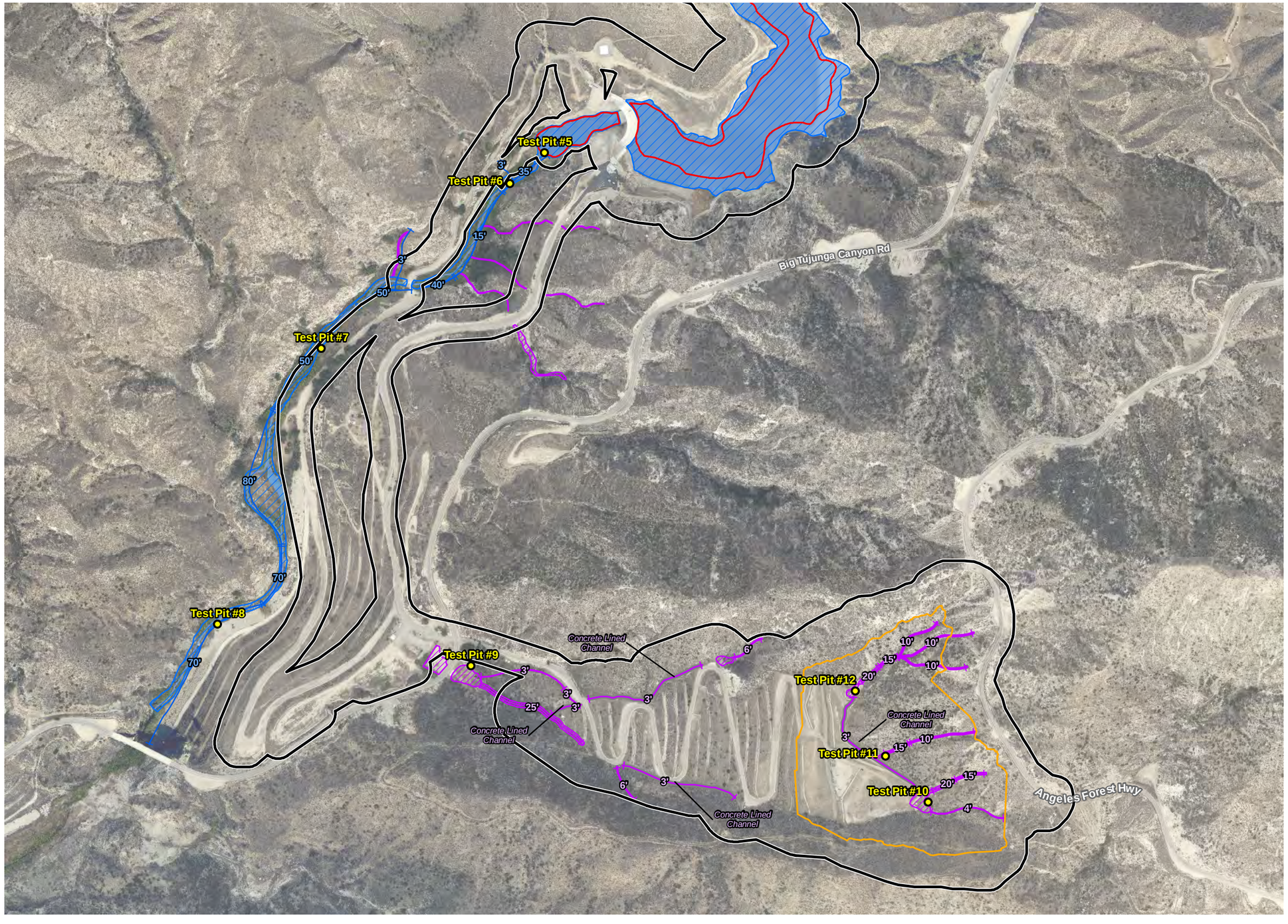

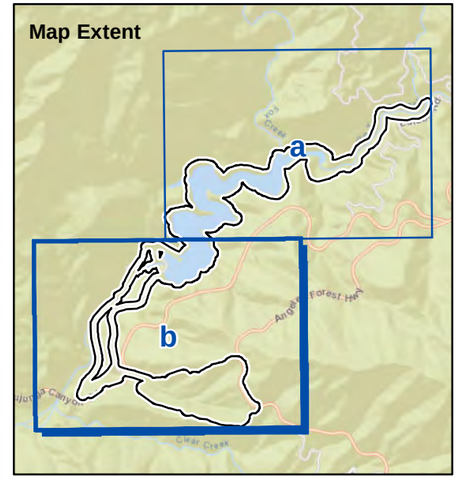

Study Area

Test Pit Location

Open Water*

Areas of Impact

Sediment Removal Disturbance

SPS Limit of Work

USACE/RWQCB Jurisdiction

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

"Waters of the U.S."

RWQCB Jurisdiction

"Isolated Waters of the State" (width in feet)

"Isolated Waters of the State" (concrete channel)

"Isolated Waters of the State"

NOTE: The USACE issued new regulatory text defining waters of the U.S. in 2020. One of the major changes to the definition is that ephemeral waters are no longer subject to USACE regulation under the Clean Water Act. As such, waters of the U.S. in Maple Canyon SPS would no longer be under the jurisdiction of USACE.

*Open water boundaries observed in August 2017, though variable throughout year.
Aerial Source: LAR-IAC 2014

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USACE/RWQCB Jurisdictional Resources

Exhibit 4-7b

Big Tujunga Reservoir Sediment Removal Project

N W E S

600 300 0 600 Feet

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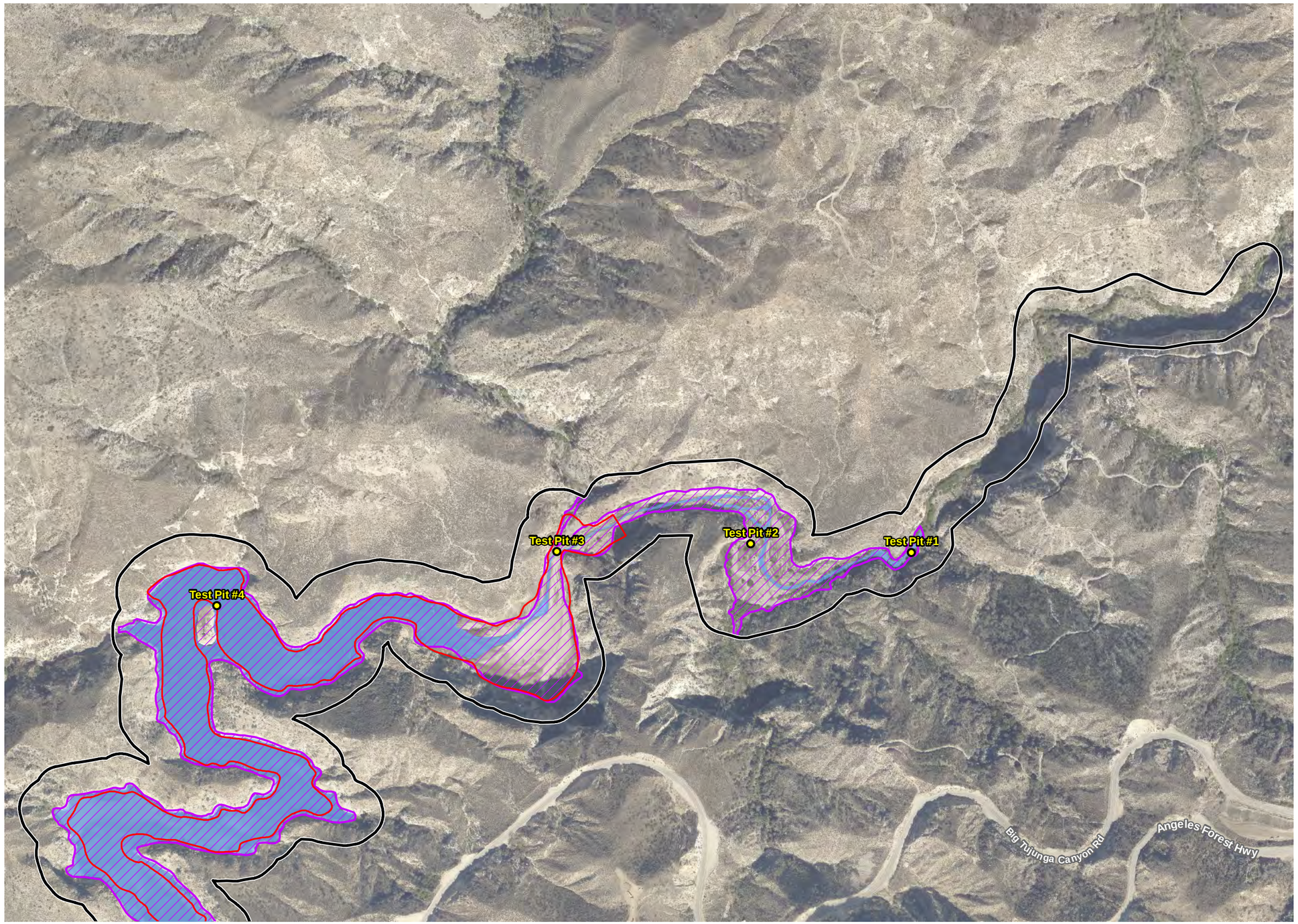

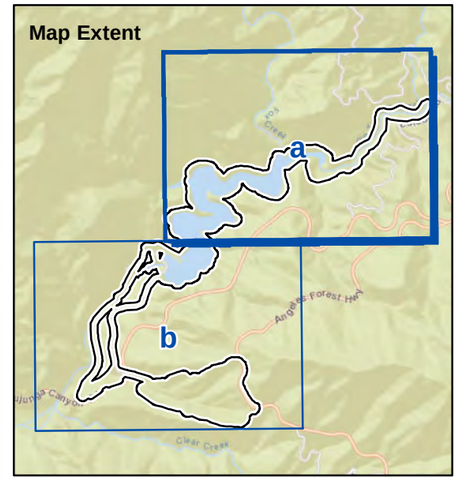

Study Area
Test Pit Location
Open Water*

Areas of Impact

Sediment Removal Disturbance
SPS Limit of Work

CDFG Jurisdiction

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

*Open water boundaries observed in August 2017, though variable throughout year.
Aerial Source: LAR-IAC 2014

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CDFW Jurisdictional Resources

Exhibit 4-8a

Big Tujunga Reservoir Sediment Removal Project

N W E S

600 300 0 600

Feet

PSOMAS

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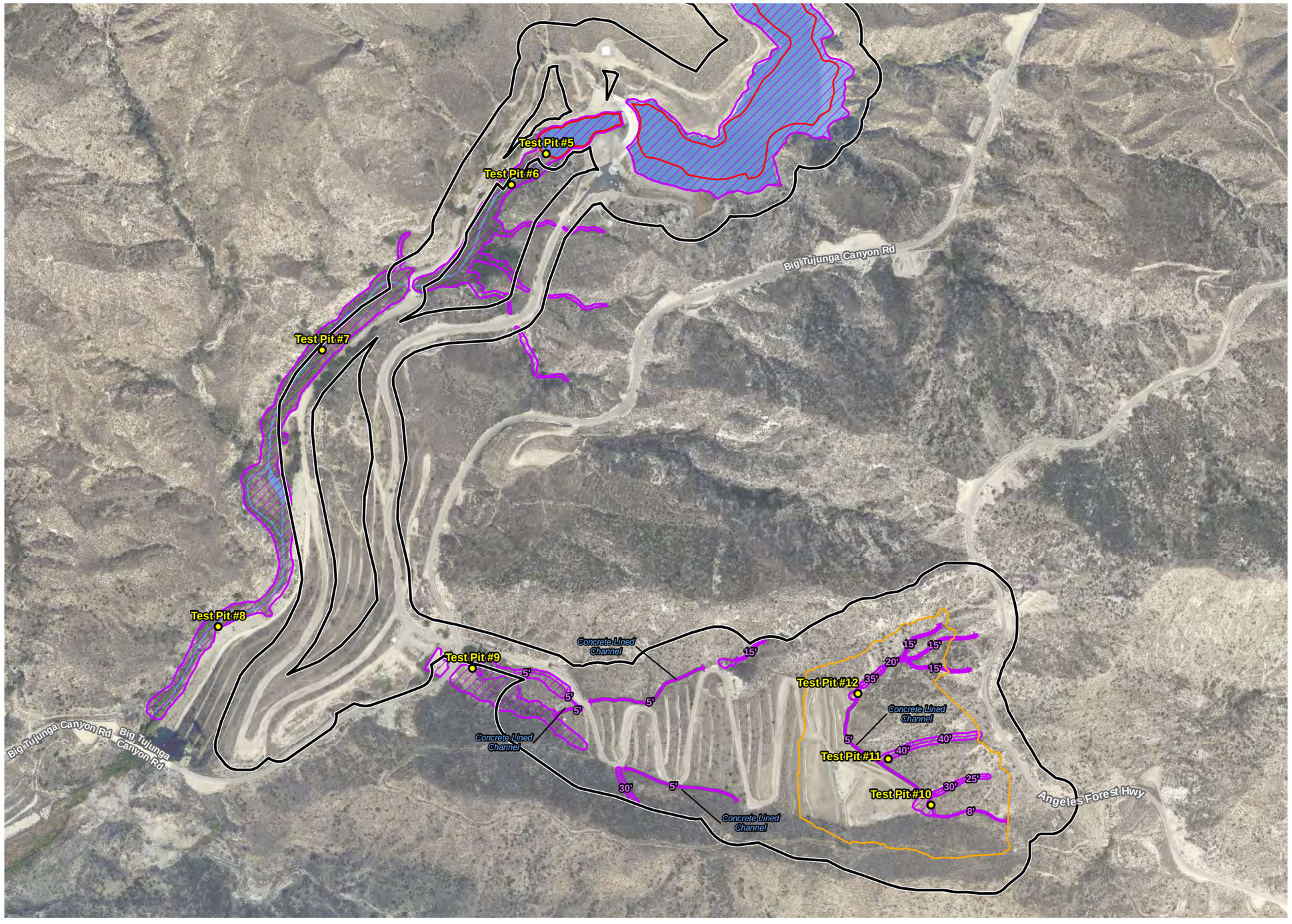

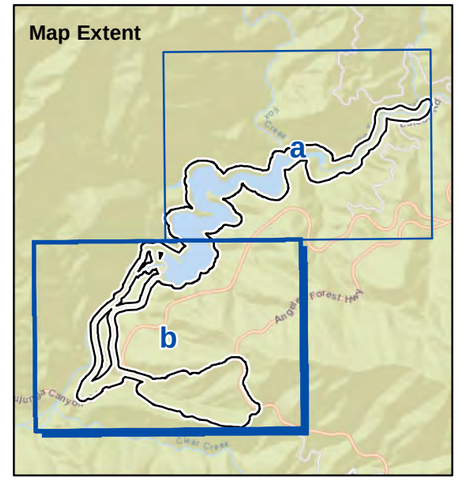

Study Area
Test Pit Location
Open Water*

Areas of Impact

Sediment Removal Disturbance
SPS Limit of Work

CDFG Jurisdiction

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

*Open water boundaries observed in August 2017, though variable throughout year.
Aerial Source: LAR-IAC 2014

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CDFW Jurisdictional Resources

Exhibit 4-8b

Big Tujunga Reservoir Sediment Removal Project

N W E S

600 300 0 600 Feet

PSOMAS

(Rev: 6-04-2021 CJS) Projects\CoLADPWJ167\Graphics\MND\Ex_JD_CDFG.pdf

TABLE 4-15
JURISDICTIONAL "WATERS OF THE U.S." AND CDFW JURISDICTIONAL WATERS

Project Areas	USACE non-wetland "waters of the U.S."			RWQCB non-wetland "waters of the U.S."			CDFW Jurisdictional Waters		
	Total Existing (acres)	Proposed Permanent Impact (acres)	Proposed Temporary Impact (acres)	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 (above the dam)	62.76	0.00	45.18	62.76	0.00	45.18	71.03	0.00	46.02
Plunge Pool	1.60	0.00	1.45	1.60	0.00	1.45	1.75	0.00	1.45
Big Tujunga Wash[*](below the dam)	6.23	0.00	0.00	6.70	0.00	0.00	14.34	0.00	0.00
Maple Canyon Sediment Placement Site	0.00	0.00	0.00	2.48	1.05	0.00	6.29	2.11	0.00
Total	**70.59**	**0.00**	**46.63**	**73.54**	**1.05**	**46.63**	**93.41**	**2.11**	**47.47**

[*] Approximately 0.28 acre of USACE/RWQCB and 0.70 acre of CDFW jurisdictional waters in Big Tujunga Wash occur along the haul routes downstream of Big Tujunga Dam. No impacts are expected to occur to these resources from project activities.

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. Wildlife species (e.g., mountain lion) 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, Anna's hummingbird (*Calypte anna*), and house finch. 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. Impacts to nests of all native birds would be potentially significant during the breeding season. Therefore, implementation of MM BIO-10 would be required to reduce impacts to less than significant. As described by MM BIO-10, because 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-10 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. Maple Canyon SPS is located within the jurisdiction of the USFS; there is no tree preservation policy for the ANF. Therefore, there is no requirement to protect the scrub oak or San Gabriel oak trees that would be impacted by sediment placement in Maple Canyon SPS. The remainder of the Project area falls within LACFCD flood control facilities; these facilities are exempt from oak tree ordinance measures required by the County of Los Angeles. However, the LACFCD typically follows the County ordinance in good faith. As discussed above, no coast live oak trees would be removed by the Project, and if trimming is needed, an Arborist would do the work. Therefore, there would be no conflict with local tree policies or ordinances.

As previously discussed, the Project site is not within any Significant Ecological Areas (SEAs). The proposed 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 proposed 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 proposed Project is located approximately 7 miles upstream of SEA Tujunga Valley/Hansen Dam (No. 25) and could indirectly impact this SEA through impacts to water quality. However, MM BIO-4 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 2005a). 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. Therefore, there would be no conflict with the Forest Land and Resource Management Plan for the Angeles National Forest.

The LACFCD is currently pursuing a Low-Effect HCP for the Operation and Maintenance of Big Tujunga Dam. The proposed Project would be a Covered Maintenance Activity in the HCP. The HCP is currently in preparation; it is anticipated to be complete prior to implementation of the Project. The MMs from this MND that relate to the HCP's Covered Species have been reviewed by the USFWS and updated to reflect their comments. These MMs are consistent with MMs in the HCP for maintenance activities. Thus, the proposed Project is entirely consistent with the HCP currently in preparation.

The proposed 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 A pre-construction survey for Greata's aster shall be conducted by the LACFCD in the spring/summer prior to construction during its peak blooming period. Locations within 100 feet of Project areas shall be recorded using GPS and clearly marked using lathe and flagging. Any Greata's aster within the sediment removal boundary shall also be marked with pin flags next to each individual stem to facilitate locating individuals for potential seed collection (see below).

If Greata's aster is observed within the sediment removal boundary, the impact boundary shall be adjusted to avoid the location of Greata's aster. Prior to the initiation of project activities each year (including road paving), any Greata's aster locations within 100 feet of Project activities shall be clearly marked with orange snow fencing, stakes and rope, or other suitable fencing. Signs shall be posted to indicate each location as an "Environmentally Sensitive Area" and shall state that no work activities shall occur within the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. Once Project activities are initiated, the Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired.

If any location(s) of Greata's aster cannot be avoided, a Greata's Aster Relocation Plan (GARP) shall be prepared for review and approval by LACFCD. The GARP shall be prepared following the pre-construction survey to determine the number of individuals that will need to be addressed by the plan. The GARP shall describe the methods for seed collection and salvage/relocation of individual plants. The GARP shall identify the relocation site, which shall be located in an area of dedicated open space and shall have similar soils, aspect, slope, and hydrology as the site where the individuals are collected. The success criteria for the GARP

shall require the replacement of impacted individuals at a minimum 1:1 ratio through a combination of: (1) the survival of salvaged/transplanted individuals; (2) the survival of plants from seed application; and/or the survival of plants from container planting. The GARP shall include a five-year maintenance and monitoring program and a description of remedial measures that shall be implemented if success criteria are not achieved at the end of the five-year monitoring period. The GARP shall be approved by LACFCD prior to the initiation of seed collection and salvage activities. Seed collection and salvage activities shall be completed prior to allowing Project activities to impact any Greata's aster location(s). The LACFCD shall be responsible for implementing the GARP and ensuring that the mitigation program achieves the required success criteria.

As described above, individual plants shall be marked with pin flags during the pre-construction survey to facilitate locating them after flowering. Following the pre-construction survey, the Greata's aster plants shall be regularly monitored by a qualified Biologist (one familiar with the biology of Greata's aster) to assess the plants' progress from flowering to seed formation. Following approval of the GARP, the seed shall be collected by a qualified Biologist (one experienced in the collection of seed of special status plants and holding the necessary approvals). Seeds shall be collected from ripened seed heads for later propagation (into container plants) or hand seeding by personnel experienced in the collection of native seed and native plant propagation. A total of 25 percent of the collected seed shall be archived in the seed bank at Rancho Santa Ana Botanic Garden (RSABG). Following seed collection, the individuals shall be salvaged by a qualified Biologist as described in the approved GARP.

MM BIO-2 A pre-construction survey for Plummer's mariposa-lily and fragrant pitcher sage shall be conducted by the LACFCD in the spring prior to construction during the peak blooming period of each species. Locations within 100 feet of Project areas shall be recorded using GPS and clearly marked using lathe and flagging.

Prior to the initiation of project activities each year (including road paving), all special status plant locations within 100 feet of Project activities shall be clearly marked with orange snow fencing, stakes and rope, or other suitable fencing. Signs shall be posted to indicate each location as an "Environmentally Sensitive Area" and shall state that no work activities shall occur within the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. Once Project activities are initiated, the Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired.

MM BIO-3 If CDFW determines that listing of the Crotch bumble bee is not warranted prior to implementation of the Project, or during implementation of the Project, this measure shall not be required.

Until CDFW makes a determination, or if CDFW determines that listing of the Crotch bumble bee is warranted, the following measure shall be required.

A pre-construction focused survey for Crotch's bumble bee shall be conducted during the Crotch's bumble bee active period (March to July) prior to the initiation of vegetation removal activities and prior to sediment placement activities each season. Three visual surveys will be conducted by a qualified Biologist (i.e., one

with experience in the identification of bee species). Surveys shall be conducted at least two hours after sunrise and three hours before sunset during suitable weather conditions. Sunny days with temperatures greater than 60 degrees Fahrenheit and wind speeds less than eight mph are optimal, but partially cloudy days or overcast conditions are permissible if a person's shadow is visible. Surveys should not be conducted during wet, foggy, or rainy conditions. Meandering transects shall be walked slowly within the Maple Canyon SPS impact area (disturbance area plus 50 feet) to obtain a 100% survey cover. Transect spacing will depend on the habitat.

The Biologist will search for Crotch's bumble bee activity and the presence of ground nests. Cavities such as mammal burrows shall be inspected with binoculars for evidence of bumble bee use. If multiple exiting/entering bumble bees are observed at a cavity, further observation shall occur until nesting is confirmed (e.g. multiple individuals entering the cavity).If a ground nest is observed, it will be protected in place until it is no longer active as determined by a Biologist.

A Letter Report shall be prepared to document the results of the pre-construction surveys and monitoring and shall be provided to the LACFCD and CDFW within 30 days of completion of the survey.

MM BIO-4 The USACE, in collaboration with LACFCD, shall conduct a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act in connection with the issuance of the Clean Water Act Section 404 Permit for the Project. The LACFCD/USACE shall obtain written concurrence from the USFWS that the avoidance and minimization measures for Santa Ana sucker listed below are considered suitable by the USFWS.

A. A Special Status Fish Relocation Plan (SSFRP) shall be prepared by the LACFCD to describe the methodology to move Santa Ana sucker, arroyo chub, and Santa Ana speckled dace adults/juveniles out of the plunge pool and work area at the mouth of the stream where BMPs will be installed for water quality and/or to allow for the continued fish passage while water is diverted around an in-stream work area. The SSFRP shall describe the potential relocation site. The relocation site shall mimic site conditions as closely as possible; adequate food resources for the fish and shelter from predators shall be present at the relocation site. The SSFRP shall describe any follow-up monitoring that would be necessary and additional contingency measures for management of the relocation site. The LACFCD, USFWS, and CDFW shall approve the SSFRP prior to relocating any special status fish species. The SSFRP shall be prepared, approved, and implemented prior to dewatering (beyond normal dam operations) and the initiation of sediment removal. As the hydrology of the creek (i.e., suitable relocation habitat) varies over time depending on annual rainfall, the SSFRP shall be prepared within six months prior to initiation of project activities in the plunge pool and updated annually during the Project.

B. A one-visit pre-construction survey for Santa Ana sucker, arroyo chub, and Santa Ana speckled dace shall be conducted by a qualified Biologist (one holding a 10[a] permit for the Santa Ana sucker) immediately prior to installation of water quality BMPs at the downstream end of the plunge pool. If any Santa Ana suckers or other special status fish species are observed, the Biologist shall relocate all individuals to areas of suitable habitat per the SSFRP. All non-native animal species encountered during the pre-construction survey shall be permanently removed from the plunge pool and creek.

C. 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 as described in the SSFRP. A Letter Report shall be prepared to document the results of the pre-construction surveys, and monitoring and shall be provided to the LACFCD, USFWS, and CDFW within 30 days of completion of the survey.

D. Regardless of whether special status fish species are observed during pre-construction surveys, the combination of water quality BMPs and/or blocking nets shall be used to exclude special status fish species from entering the work area from downstream. The design of the exclusion and method of installation shall be included in the SSFRP and approved by the LACFCD, USFWS, and CDFW. Blocking nets and water quality BMPs shall be installed under the supervision of a Biological Monitor in order to ensure that no special status fish species are impacted during installation of the exclusion measures.

E. No Project activities shall take place within the Santa Ana sucker Critical Habitat area downstream of water quality measures installed at the downstream end of the plunge pool. Regardless of the results of pre-construction surveys, the downstream limits of Project activities 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 downstream is an “Environmentally Sensitive Area” and that no work activities shall occur downstream of the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD/Contractor immediately if the fencing/signage needs to be repaired.

F. Prior to dewatering of the reservoir (beyond normal dam operations) and/or any work in the plunge pool, LACFCD’s Contractor shall install water quality filtration BMPs to satisfy permitting requirements from the LACFCD, USACE, RWQCB, and/or CDFW. Filtration BMPs—including but not limited to 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. 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 preventing or limiting the flow of disturbed sediment and particulate matter downstream during Project activities. The LACFCD shall hire an ECM to inspect the BMPs daily throughout sediment removal. If BMPs are not functioning properly, the ECM shall notify LACFCD immediately and corrective action shall be taken immediately. If effective corrective action is not taken within 48 hours, the ECM shall recommend that LACFCD’s Construction Inspector suspend construction activities; the ECM shall report the conditions and necessary corrective actions to the LACFCD, USFWS, CDFW, and/or RWQCB; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD and the appropriate resource agencies.

G. In order to minimize impacts on the Santa Ana sucker and its Critical Habitat, dam releases for Project activities during the Santa Ana sucker breeding

season (March 1 to July 31) shall not exceed 180 cubic feet per second (cfs)[19], and dam operations shall 'ramp' flows (i.e., step-wise increases and decreases) to mimic natural stream hydrology.

H. A screen with 0.125-inch (3.2-millimeter) mesh shall be used at the inflow of the pump for dewatering the reservoir to prevent non-native animals from spreading from the reservoir to areas below the dam occupied by Santa Ana sucker. All non-native animal species encountered during dewatering of the reservoir shall be permanently removed from the reservoir. Post-project, placement of non-native species shall not be allowed in the reservoir, plunge pool, or Big Tujunga Creek/Wash.

I. When the bypass line is in place, water temperature shall be maintained from the inflow to the outflow. The bypass line shall be insulated and/or methods shall be used to decrease the water temperature prior to it re-entering the stream (e.g., submerge, cover, or shade the bypass line; avoiding black or corrugated pipe if not shaded).

J. A qualified Biological Monitor (one with experience with special status fish species) shall conduct daily monitoring along the creek during dewatering outside the storm season (April 16 to October 14) and stream bypass installation. The Biological Monitor shall also conduct weekly monitoring throughout sediment removal activities to ensure that BMPs are in place and no release of sediment is observed downstream of the plunge pool; and to ensure that Santa Ana sucker, arroyo chub, or Santa Ana speckled dace are not stranded as dewatering flows recede. The Biological Monitor shall visually monitor habitat from the dam to approximately 1.5 mile downstream of the dam. If the Biological Monitor notes a change in the condition of downstream habitat that was likely caused by dewatering flows and/or BMPs not functioning effectively to protect water quality[20], the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective actions to the LACFCD, USFWS, and CDFW; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD, USFWS, and CDFW. If the Biological Monitor observes Santa Ana sucker or other special status species adults, juvenile, or larva stranded in drying pools outside the active channel during dewatering or at any time during construction, he/she shall be authorized to relocate the fish to suitable habitat in the adjacent active channel. The Biological Monitor shall prepare Weekly Monitoring Reports describing construction activities as they

[19] The Big Tujunga Habitat Conservation Plan (HCP) covering long-term operation and maintenance of the dam is currently under development. In HCP meeting discussions and preliminary review of mitigation measures, the USFWS is considering non-storm operational releases of up to 250 cfs. However, to be consistent with the previous project description and mitigation measures for this project, LACFCD has agreed that the maximum release would be 180 cfs during dewatering for the sediment removal project.

[20] Flood control releases may occur in association with a storm that occurs during the non-storm season. Changes in the condition of stream habitat related to flood control releases would not be included in the notification/corrective action requirements unless they were associated with repairing BMP functioning for the maintenance project following the storm.

pertain to the Santa Ana sucker and Santa Ana sucker Critical Habitat areas; the reports shall be submitted to the LACFCD, USFWS, and CDFW.

K. The SSFRP shall also include discussion of potential relocation necessary based on natural flow conditions from the dam to 1.5 mile downstream of the dam. If the Biological Monitor notices that water levels in active channel of the creek in this area decrease to shallow conditions or that isolated pools develop as a result of natural rainfall conditions, the Biological Monitor shall notify the LACFCD, USFWS, and CDFW of the conditions so the resource agencies (i.e., USFWS or CDFW) may consider relocating special status fish to suitable habitat or temporarily into captivity 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. No relocation shall occur until the USFWS and CDFW have confirmed that relocation shall occur.

MM BIO-5 The USACE, in collaboration with LACFCD, shall conduct a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act in connection with the issuance of the Clean Water Act Section 404 Permit for the Project. The LACFCD/USACE shall obtain written concurrence from the USFWS that the avoidance and minimization measures for arroyo toad listed below are considered suitable.

A. An Arroyo Toad Relocation Plan (ATRP) shall be prepared by the LACFCD to describe the methodology to move arroyo toad adults, eggs, and tadpoles out of the sediment removal impact area and to describe the potential relocation site. The ATRP shall be prepared following the pre-construction surveys (described below), once the number and age class of individuals to be relocated is known. 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 that would be necessary and additional contingency measures for management of the relocation site until tadpoles have metamorphosed into adults. The ATRP shall also include specifications for arroyo toad exclusion fencing that will be needed at the upper end of the sediment removal area. The LACFCD and USFWS shall approve the ATRP prior to relocating any arroyo toad adults/eggs/tadpoles and prior to dewatering the reservoir for the Project (beyond normal dam operations). The ATRP shall be prepared, approved, and implemented prior to dewatering and the initiation of sediment removal.

B. Three pre-construction surveys for arroyo toad adults, eggs, and tadpoles shall be conducted by a qualified Biologist (one with experience identifying arroyo toads in all life stages) within 30 days prior to dewatering of the reservoir each year of the Project activities are scheduled to be conducted. The surveys shall include both a diurnal and nocturnal component and shall be conducted up to one kilometer upstream of the project limits of disturbance by a qualified Biologist. If arroyo toad adults, eggs, or tadpoles are observed within the sediment removal impact area, dewatering (beyond normal dam operations) shall begin after arroyo toads are relocated out of the work area according to the ATRP (described above). If no arroyo toads are observed during the pre-construction surveys, dewatering and sediment removal can proceed as planned. A Letter Report will be prepared to document the results of the pre-

construction survey and submitted to the LACFCD and USFWS within 30 days of completion of the survey.

C. No sediment removal activities shall take place within the arroyo toad Critical Habitat area. Regardless of the results of pre-construction surveys, 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. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired.

D. If arroyo toads are observed during pre-construction surveys, exclusionary fencing shall be installed at the upper sediment removal boundary to prevent arroyo toads upstream of the Project from entering the construction area. The design of the fencing plan shall be included in the ATRP and approved by the LACFCD and USFWS. The exclusionary fencing shall consist of silt fencing, buried at least 1-foot-deep and installed with no gaps; alternate fencing shall be approved by the LACFCD and 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 LACFCD and USFWS. Fencing shall be installed under the supervision of a Biological Monitor in order to ensure that no arroyo toad adults/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 arroyo toads observed in the sediment removal area shall be relocated by a qualified Biologist (one approved by the USFWS to handle arroyo toad/special status species) according to the approved ATRP. If any non-native aquatic species (e.g., non-native fish, bullfrogs, or crayfish) are captured during the survey, they shall be permanently removed from the habitat.

E. A qualified Biological Monitor (one with experience in identifying arroyo toads in all life stages) shall conduct daily monitoring during the breeding season (March 1 to June 30) and stream bypass installation upstream of the reservoir. The Biological Monitor shall also conduct weekly monitoring throughout sediment removal activities to ensure that species protective measures are in place and that no arroyo toad/eggs/tadpoles are within the sediment removal footprint. The Biological Monitor shall monitor habitat from the upper reservoir to approximately 1,000 feet upstream of the bypass line. If the Biological Monitor notes a change in the condition of habitat immediately upstream of sediment removal activities that may have been caused by the Project activities and/or that BMPs are not functioning effectively, the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective actions to the LACFCD and USFWS; work shall remain suspended until the condition is corrected to the satisfaction

of the LACFCD and USFWS. If the Biological Monitor observes arroyo toad adults/eggs/tadpoles within the sediment removal area at any time during construction, he/she shall be authorized to relocate the arroyo toad to suitable habitat upstream of the sediment removal area per the ATRP. The Biological Monitor shall prepare Weekly Monitoring Reports describing construction activities as they pertain to the arroyo toad and arroyo toad Critical Habitat areas; the reports shall be submitted to the LACFCD and USFWS.

The Biological Monitor shall also monitor any relocated eggs/tadpoles and shall notify the LACFCD and USFWS if any contingency measures are necessary at the relocation site. Relocated eggs/tadpoles shall be monitored until the young leave the stream/pools as juvenile toads. Weekly Monitoring Reports shall include a description of any relocated eggs/tadpoles.

MM BIO-6 The USACE, in consultation with LACFCD, shall conduct a formal consultation with the USFWS in accordance with Section 7 of the federal Endangered Species Act (in connection with the issuance of the Clean Water Act Section 404 Permit for the Project) and Consistency Determination by the CDFW. The LACFCD/USACE shall obtain written concurrence from the USFWS/CDFW that the avoidance and minimization measures for least Bell's vireo and southwestern willow flycatcher listed below are considered suitable by the resource agencies.

A. To the extent possible, vegetation clearing of riparian habitat shall be conducted during the non-breeding season (September 16 to March 14) in order to minimize direct impacts on nests of this species. Vegetation clearing of riparian communities shall be monitored by a qualified Biologist (one with experience monitoring in riparian habitat).

B. Prior to the start of sediment removal activities each year, a qualified Biologist[21] (one with experience and necessary permits to survey for least Bell's vireo and southwestern willow flycatcher) shall survey all riparian habitat within 500 feet of the construction limits for the presence of least Bell's vireo and southwestern willow flycatcher nests/territories. Three surveys shall be conducted within two weeks prior to the initiation of Project activities each year. Any active nests/territories shall be mapped on an aerial photograph and marked on applicable construction plans. A Letter Report will be prepared and submitted to the LACFCD, USFWS, and CDFW to document the results of the pre-construction survey within 30 days of completion of the survey.

C. A 500-foot protective buffer shall be established around a least Bell's vireo or southwestern willow flycatcher territory identified in the field. The protective buffer shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an adequate buffer from construction work. Signs shall be posted to indicate that the area is an "Environmentally Sensitive Area" and that no work activities shall occur within the fencing. WEAP training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout sediment removal activities and shall notify the

[21] The qualified Biologist will need to be permitted for the species that have potential to nest at the time of the pre-construction surveys and monitoring. Prior to May 15, the qualified Biologist will only need to have experience with least Bell's vireo. After May 15, the qualified biologist will need to have experience with least Bell's vireo and southwestern willow flycatcher.

LACFCD's Construction Inspector immediately if the fencing/signage needs to be repaired.

D. If construction activities need to occur closer than 500 feet of an active least Bell's vireo or southwestern willow flycatcher territory, a Riparian Bird Construction Plan (RBCP) shall be prepared for review and approval by the LACFCD, USFWS, and CDFW. As the location of active nests can vary over time, the RBCP shall be prepared once an active territory has been observed and it has been determined that work within 500 feet of the nest cannot be delayed until after the completion of the nest. Any activity within 500 feet of an active least Bell's vireo or southwestern willow flycatcher territory shall be monitored by a qualified Biologist (one with the permits and necessary experience to survey for these species[22]).

   If construction would result in noise readings greater than 60 dBA at the edge of least Bell's vireo or southwestern willow flycatcher territory, construction shall not be allowed during the breeding season (March 15 to September 15) unless appropriate noise reduction measures (e.g., temporary noise barriers) are implemented as approved by the LACFCD, USFWS, and CDFW. Noise reduction measures shall be implemented, as-needed, to maintain a noise level of less than 60 dBA at the edge of occupied riparian habitat to ensure that the vireo and/or flycatcher is not indirectly affected by construction noise. Implementation of the noise reduction measures shall be monitored by a qualified Biologist to ensure that the vireo and/or flycatcher is not inadvertently affected by their installation.

   The RBCP shall also outline a noise monitoring methodology to be used during the breeding season for construction within 500 feet of occupied habitat. The RBCP shall include noise monitoring stations that shall be monitored weekly between March 15 and September 15 to ensure that noise levels remain less than 60 dBA. If noise monitoring determines that the noise level exceeds 60 dBA, the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required, and noise reduction measures shall be modified as recommended by a qualified Acoustical Technician to reduce noise levels below 60 dBA. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective action to the LACFCD, USFWS, and CDFW; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD, USFWS, and CDFW.

E. Regardless of whether least Bell's vireo or southwestern willow flycatchers are detected during the pre-construction surveys, surveys shall be updated once per week in riparian areas within 500 feet of construction throughout the breeding season (or as long as construction is within 500 feet of riparian habitat). Surveys may be discontinued after June 30th if no least Bell's vireo or southwestern willow flycatcher have been detected. If a least Bell's vireo or southwestern willow flycatcher territory is observed, monitoring surveys shall be continued until vireo/flycatcher leave for the wintering grounds

[22] The 10a permits needed to conduct monitoring shall correspond to the species present. If a southwestern willow flycatcher nest is present, a permit for this species will be needed. If a least Bell's vireo is present, no 10a permit will be needed, but the qualified Biologist will need the necessary experience to survey for this species.

(August/September). Weekly monitoring reports shall be prepared by the Biologist and submitted to the LACFCD, USFWS, and CDFW.

MM BIO-7 Prior to the initiation of dewatering/installation of the bypass line each year (March or April), the following measure shall be followed prior to work within or adjacent to the Reservoir, plunge pool, or stream.

A. A Western Pond Turtle Relocation Plan (WPTRP) shall be prepared by the LACFCD to describe the methodology to move western pond turtle out of the work area and/or to allow for the continued turtle passage while water is diverted around an in-stream work area. The WPTRP shall describe the potential relocation site. The relocation site shall mimic site conditions as closely as possible; adequate food resources for the turtles and shelter from predators shall be present at the relocation site. The WPTRP shall describe any follow-up monitoring that would be necessary of the relocated turtles. The WPTRP shall also include specifications for western pond turtle exclusion fencing that shall be needed at the work area. The LACFCD and USFWS shall approve the WPTRP prior to relocating any western pond turtles and prior to dewatering the Reservoir or plunge pool (beyond normal dam operations). The WPTRP shall be prepared, approved, and implemented prior to dewatering and the initiation of maintenance work. As the hydrology of the creek (i.e., suitable relocation habitat) varies over time depending on annual rainfall, the WPTRP shall be prepared within six months prior to initiation of project activities in the plunge pool and updated annually during the Project.

B. A pre-construction trapping effort shall be conducted by the LACFCD prior to dewatering of the Reservoir/plunge pool (beyond normal operations) for a maintenance project. The trapping effort shall follow the newest approved protocol for the species (currently USGS 2006) shall be conducted by a qualified Biologist (one permitted to conduct western pond turtle trapping). If western pond turtles are observed within the work area, dewatering (beyond normal dam operations) shall begin after western pond turtles are relocated out of the work area according to the WPTRP (described above). If no western pond turtles are observed during the pre-construction surveys, dewatering and maintenance work can proceed as planned. If any non-native aquatic species (e.g., non-native fish, bullfrogs, or crayfish) are captured during the survey, they shall be permanently removed from the habitat. A Letter Report shall be prepared to document the results of the pre-construction survey and submitted to the LACFCD and USFWS within 30 days of completion of the survey.

C. Regardless of the results of pre-construction surveys, the limits of work shall be marked with lath and rope, orange snow fencing, or other suitable fencing to provide an adequate boundary for maintenance work. Signs shall be posted to indicate that the areas upstream and downstream are “Environmentally Sensitive Areas” and that no work activities shall occur upstream of the fencing. Worker Environmental Awareness Program (WEAP) training shall educate workers on the importance of Environmentally Sensitive Areas. The Biological Monitor shall check the fencing/signage weekly to ensure that it stays in place throughout maintenance activities and shall notify the LACFCD’s Construction Inspector immediately if the fencing/signage needs to be repaired.

D. Regardless of the results of pre-construction surveys, exclusionary fencing shall be installed around the limits of the work area within the Reservoir or

plunge pool to prevent western pond turtles from entering the construction area. The design of the fencing plan shall be included in the WPTRP and approved by LACFCD and USFWS. The exclusionary fencing shall consist of silt fencing, buried at least 18 inches-deep and installed with no gaps; alternate fencing shall be approved by the LACFCD and USFWS. The fencing shall extend across Big Tujunga Creek around the perimeter of the work area or perpendicular to the creek up to 80 feet in elevation from the creek, or as otherwise approved by the LACFCD and USFWS. Fencing shall be installed under the supervision of a Biological Monitor in order to ensure that no western pond turtles are impacted during installation of the fence. One pre-construction survey shall be conducted by a qualified Biologist after the exclusionary fencing is installed and prior to the commencement of maintenance activities to ensure that no turtles are within the fencing. Any western pond turtles observed in the work area shall be relocated by a qualified Biologist (one approved by the USFWS to handle western pond turtle) according to the approved WPTRP.

E. A qualified Biological Monitor (one with experience in identifying western pond turtle) shall conduct daily monitoring during dewatering outside the storm season (April 16 to October 14) and work adjacent to the stream during the turtle's active period (March to September). The Biological Monitor shall also conduct weekly monitoring throughout maintenance activities to ensure that species protective measures are in place and that no western pond turtles are within the footprint of the work area. The Biological Monitor shall monitor habitat within 500 feet of the work area. If the Biological Monitor notes a change in the condition of habitat in the vicinity of work activities that may have been caused by the maintenance activities and/or by BMPs not functioning effectively, the Biological Monitor shall immediately notify the LACFCD's Construction Inspector that immediate corrective action is required. If corrective action has not been taken within 48 hours, the Biological Monitor shall recommend that the LACFCD's Construction Inspector suspend construction activities and the Biological Monitor shall report the conditions and necessary corrective actions to the LACFCD and USFWS; work shall remain suspended until the condition is corrected to the satisfaction of the LACFCD and USFWS. If the Biological Monitor observes western pond turtle within the work area at any time during construction, he/she shall be authorized to relocate the western pond turtle to suitable habitat upstream/downstream of the work area per the WPTRP. The Biological Monitor shall prepare Weekly Monitoring Reports describing construction activities as they pertain to the western pond turtle; the reports shall be submitted to the LACFCD and USFWS.

F. When the bypass line is in place, water temperature shall be maintained from the inflow to the outflow. The bypass line shall be insulated and/or methods shall be used to decrease the water temperature prior to it re-entering the stream (e.g., submerge, cover, or shade the bypass line; avoiding black or corrugated pipe if not shaded).

MM BIO-8 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 surveys for the two-striped garter snake shall be conducted by a qualified Biologist (one with experience and the necessary permits to handle this species). Concurrently with the western pond turtle trapping effort described in MM BIO-7, the Biologist shall also visually search for two-striped garter snakes in the Project impact area. If any

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 two-striped garter snakes, the LACFCD 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 two-striped garter snakes are stranded. If any 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 LACFCD and CDFW within 30 days of completion of the survey.

MM BIO-9 Prior to initiation of Project activities, the LACFCD shall obtain all necessary permits for impacts to USACE, CDFW, and/or RWQCB jurisdictional areas. Potential mitigation options shall include one or both of the following: (1) payment to a resource agency-approved mitigation bank or regional riparian enhancement program (e.g., invasive vegetation or wildlife species removal); and/or (2) establishment of riparian habitat (on site or off site) at a ratio of no less than 1:1, determined through consultation with the above-listed resource agencies.

If in-lieu mitigation fees are required, prior to the initiation of any construction-related activities, the LACFCD shall pay the in-lieu mitigation fee to a mitigation bank/enhancement program for the replacement of impacted jurisdictional resources. If a riparian habitat establishment program is required, the LACFCD shall (1) develop a habitat mitigation and monitoring plan (HMMP) in conformance with the USACE 2015 Guidelines; (2) submit the HMMP to the resource agencies for review; and (3) obtain resource agency approval of the HMMP, prior to the initiation of any construction related activities. The HMMP shall be prepared by a qualified Restoration Ecologist and shall be implemented by a qualified Restoration Contractor (as defined below) under the supervision of the Restoration Ecologist. The LACFCD shall be responsible for implementing the HMMP and ensuring that the mitigation program achieves the approved performance criteria. The LACFCD shall implement the HMMP per its specified requirements, materials, methods, and performance criteria. The HMMP shall include the following items:

- **Responsibilities and Qualifications.** The responsibilities and qualifications of the LACFCD, ecological specialists, and restoration (landscape) contracting personnel who will implement the plan shall be specified. At a minimum, the HMMP shall specify that the ecological specialists and contractors have performed successful installation and long-term monitoring and maintenance of southern California native habitat mitigation/restoration programs, implemented under USACE, CDFW, and RWQCB permit conditions. A successful program shall be defined as one that has been signed off on by the resource agencies.
- **Performance Criteria.** Mitigation performance criteria to be specified in the HMMP shall conform to the resource agency permit conditions. The HMMP shall state that the use of the mitigation site by special status wildlife species (e.g., least Bell's vireo), though not a requirement for site success, would be regarded by the resource agencies as a significant factor in considering eligibility for program sign-off.
- **Site Selection.** The mitigation site(s) shall be determined in coordination with the LACFCD and the resource agencies. The site(s) shall be in dedicated

open space areas and shall be contiguous with other natural open space areas. The soils, hydrology/hydraulics, and other physical characteristics of the potential mitigation sites shall be analyzed to ensure that proper conditions exist for the establishment of riparian habitat.

- **Seed Materials Procurement.** At least one year prior to mitigation implementation, the Project Applicant or its consultants/contractors shall initiate collection of the native seed materials specified in the HMMP. All seed mixes shall be of local origin; i.e., collected within 20 miles, and within the same watershed, as the selected restoration/enhancement site(s), to ensure genetic integrity. No seed materials of unknown or non-local geographic origin shall be used. Seed collection shall be prioritized per habitat area, in the following order: (a) project impact areas (highest priority); (b) other on-site habitat areas; and (c) off-site habitat areas (lowest priority), assuming availability of seed species in multiple locations.
- **Wildlife Surveys and Protection.** The HMMP shall specify any wildlife surveys (i.e., nesting bird surveys, focused/protocol surveys for special status species [e.g., least Bell's vireo]) and biological monitoring that are required to avoid adverse impacts to wildlife species during the performance of mitigation site preparation, installation, or maintenance tasks. The HMMP shall also describe potential restrictions on these tasks due to sensitive wildlife conditions on the mitigation site (e.g., suspension of these tasks during the nesting bird season, as defined in project permits).
- **Site Preparation and Plant Materials Installation.** Mitigation site preparation shall include all of the following: (a) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (b) installation of protective fencing and/or signage (as needed); (c) initial trash and weed removal (outside the nesting bird season) and methods; (d) soil treatments, as needed (i.e., imprinting, de-compacting); (e) installation of erosion-control measures (i.e., fully natural/bio-degradable [not 'photo-degradable' plastic mesh] fiber roll); (f) application of salvaged native plant materials (i.e., coarse woody debris), as available and supervised by a biological monitor; (g) temporary irrigation installation; (h) a minimum one-year preliminary weed abatement program (prior to the installation of native plant and seed materials)—including specification of approved herbicides; (i) planting of container plant and cutting species; and (j) seed mix application.
- **Schedule.** An implementation schedule shall be developed that includes planting and seeding to occur in the fall and winter (i.e., between November 1 and January 31) and the frequency of long-term maintenance and monitoring activities (including the dates of annual quantitative surveys, as described below) for five years or until the mitigation program achieves the approved performance criteria.
- **Maintenance Program.** The Maintenance Program shall include (a) protection of existing native species and habitats (including compliance with seasonal restrictions, if any); (b) maintenance of protective fencing and/or signage; (c) trash and weed removal—including specification of approved herbicides; (d) maintenance of erosion-control measures; (e) inspection/repairs of irrigation components; (f) replacement of dead container plant and cuttings (as needed); (g) application of remedial seed mixes (as needed); (h) herbivory control; and (i) removal of all non-vegetative materials (i.e., fencing, signage, irrigation components) upon project

completion. The mitigation site shall be maintained for a period of five years to ensure successful riparian habitat establishment within the restored/enhanced sites; however, the Project Applicant may request to be released from maintenance requirements by the resource agencies prior to five years if the mitigation program has achieved all performance criteria.

- **Monitoring Program.** The Monitoring Program shall include (a) qualitative monitoring (i.e., general habitat conditions, photo-documentation from established photo stations); (b) quantitative monitoring (in conformance with the USACE 2015 Guidelines); (c) annual monitoring reports, which shall be submitted to the LACFCD and the resource agencies for five years or until project completion; and (d) wildlife surveys and monitoring as described above. The annual monitoring reports shall include a detailed discussion of mitigation site performance (e.g., measured vegetation coverage and diversity) and compliance with required performance criteria, a discussion of wildlife species' use of the restored and/or enhanced habitat area(s), and a list of proposed remedial measures to address noncompliance with any performance criteria. The site shall be monitored for five years or until the LACFCD has been released from maintenance requirements by the resource agencies.
- **Long-term preservation.** Long-term preservation of the mitigation site(s) shall be outlined in the HMMP to ensure that the mitigation sites are not impacted by future development.

MM BIO-10 The following measures shall be followed prior to work within the Reservoir, plunge pool, or stream and in the developed areas of the dam.

A. To the extent possible, vegetation clearing shall be conducted during the non-breeding season (September 1 to January 31) in order to minimize direct impacts on nesting birds. If vegetation clearing would be initiated during the breeding season for nesting birds/raptors (February 1–August 31), the maintenance activity shall be conducted in compliance with the conditions set forth in the Migratory Bird Treaty Act.

B. In order to avoid direct impacts on active nests, a pre-construction survey shall be conducted by a qualified Biologist (one with experience conducting nesting bird surveys) for nesting birds and/or raptors within four days prior to clearing of any vegetation or any work near existing structures. The nesting bird survey area shall include a buffer of 300 feet around the work area for nesting birds and a buffer of 500 feet around the work area for nesting raptors. If the Biologist does not find any active nests in or immediately adjacent to the impact area, the vegetation clearing/construction work shall be allowed to proceed.

C. 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 determine an appropriate protective buffer around the nest depending on the sensitivity of the species and the nature of the construction activity. The protective buffer shall be between 25 to 300 feet for nesting birds; 300 to 500 feet for nesting raptors; and 1 mile for bald or golden eagles. If the protective buffer needs to be reduced for nesting birds/raptors, LACFCD shall coordinate with a qualified Biologist and CDFW to determine the appropriate reduced buffer. If the protective buffer needs to be reduced for bald or golden eagles, LACFCD shall coordinate with the USFWS and CDFW to determine the appropriate reduced

buffer. The active nest shall be protected within the designated buffer until nesting activity has ended. This area shall be designated as an "Environmentally Sensitive Area" and shall be mapped on construction plans. Worker Environmental Awareness Program (WEAP) training shall educate workers on the importance of Environmentally Sensitive Areas. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest, or the nest has failed. If any encroachment into a protective buffer is observed, the Biological Monitor shall notify the LACFCD's Construction Inspector of any necessary corrective action needed.

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 pursuant to Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

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

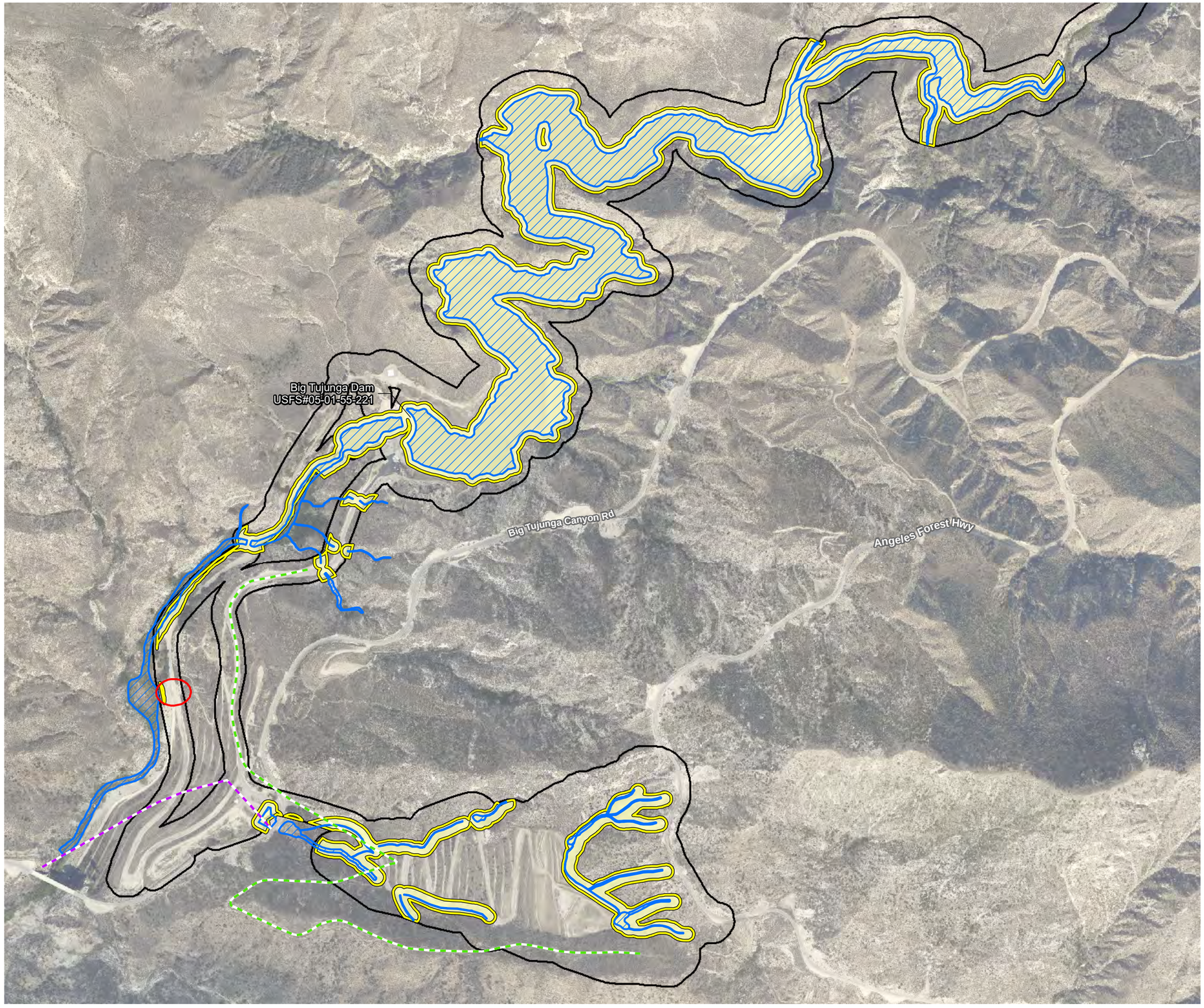
4.5.1 EXISTING CONDITIONS

Cultural Resources Records Search

An archaeological and historical resources records search for the Area of Potential Effect (APE) and the surrounding one-mile radius was conducted in 2011 and updated in 2017. The results of the 2011 and 2017 records search at the South Coastal Information Center (SCCIC) indicated that there have been at least 35 archaeological investigations conducted within a 1-mile radius of the APE. The APE is shown on Exhibit 4-9, Jurisdictional Delineation Area of Potential Effects. Five of the surveys included at least a portion of the Project site. Twelve previously recorded resources are located within one mile of the Project site. Three recorded resources are located on the Project site (P-19-186860, P-19-186877, and USFS#05-01-55-221), and a fourth (Hansen's Lodge #05-01-55-00017) is believed to be located there, but has been destroyed, leaving few surface remnants. Table 4-16 identifies the previous cultural resources studies that include at least a portion of the Project site.

TABLE 4-16
CULTURAL RESOURCES STUDIES WITHIN 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 (2009)	Cultural Resources Report for the Tehachapi Transmission Project. 22 different USGS quadrangles.
Source: VCS 2017 (Appendix C).		



Area of Potential Effects (APE)

Project Area

USACE “waters of the U.S.”

Hansen’s Lodge (estimated)
USFS#05-01-55-00017

Verdugo Circuit Transmission Line
(P-19-186860)

Transmission Line Road (P-19-186877)

N
W E
S

800 400 0 800
Feet

Aerial Source: LAR-IAC 2014

Jurisdictional Delineation
Area of Potential Effects

Exhibit 4-9

Big Tujunga Reservoir
Sediment Removal Project

PSOMAS

(Rev: 05/30/2019 MMD) R:\Projects\DPW\3DPW029307\Graphics\MND\Ex_APE.pdf

D:\Projects\COLADPW\J293\MXD\MND\ex_APE_20180523.mxd

Table 4-17 describes the known cultural resources within the APE. As indicated below, four cultural resources noted in Table 4-17 are located on the APE of the proposed sediment removal Project.

TABLE 4-17
CULTURAL RESOURCES ON OR WITHIN
ONE MILE OF THE PROJECT SITE

Site Number	Recorder (Year)	Comment	Resource Within APE/PA?
USFS#05-01-55-221	**FEMA (1999)**	**Big Tujunga Dam**	**Yes**
USFS#05-01-55-00017	**Knight and Maxon (2011)**	**Extrapolated location of Hansen's Lodge (USFS)**	**Yes**
P-19-003104	Cotterman, Peterson and Sander (2003)	4 structural foundations	No
P-19-003471	Panlagua (2003)	6 structural features (possibly early Clear Creek School Camp facilities)	No
P-19-003386	Brasket and Wallace (2004)	Concrete structural foundation	No
P-19-003986	Lichtenstein (2009)	Various cement slab features; former scenic overlook	No
P-19-100796	Norton (2009)	Plumb Bolo knife	No
P-19-186535	Arbuckle (1979)	The Angeles National Forest	No
P-19-186860 USFS#05-01-51-138	**Schmidt (2003)**	**Wooden power poles/insulators. Verdugo Circuit**	**Yes**
P-19-186877 USFS#05-01-55-187	**Schmidt and Schmidt (2003)**	**26 miles of USFS road alignment; shown on USGS 1926 and 1931 maps.**	**Yes**
P-19-186923	Vance (2001)	Mt. Lukens Road (2N76)	No
P-19-187713	Sander (2003)	Angeles Forest Highway; 25-mile alignment; Mill Creek Bridge built between 1939 and 1941; tunnel 1941	No

USFS: U.S. Forest Service; FEMA: Federal Emergency Management Agency
Source: VCS 2017 (Appendix C).

Resources within the Area of Potential Effect/Permit Area

Big Tujunga Dam (USFS#05-01-55-221)

The Big Tujunga Dam is a variable-radius arch concrete dam, constructed in 1930-1931 as part of a flood control and water conservation program in Los Angeles County. The program passed in 1924 to build a network of dams and reservoirs to protect the growing community and provide water as demand increased. In 1999, as part of the LACDPW and Federal Management Agency (FEMA) Spillway Modification/Seismic Strengthening Project, the Big Tujunga Dam was determined eligible for listing in the National Register of Historic Places as a contributing element to the thematic district of 1924 Los Angeles County Dams by Daniel Abeyta, acting State Historic Preservation Officer. There would be no adverse effects to the dam by sediment removal, placement activities, and miscellaneous improvements associated with the Project. It should be noted that the dam is not recorded on DPR 523 Site Recording forms and the SCCIC does not maintain the USFS site record in its files (VCS Environmental 2017).

USFS Transmission Line Road Alignment (19-186877; USFS#05-01-55-187)

This USFS Transmission Line Road Alignment consists of a 26-mile-long alignment that includes parts of five Forest- and/or SCE-maintained roads. 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 ANF (USDAFS 1926, 1931), and on the 1936 USGS Mt Lowe 6-minute quadrangle, as shown on Exhibit 4-9. Schmidt and Schmidt quote Robinson who describes the road as the first road "all the way across the backbone of the San Gabriels". The SCE Verdugo Circuit (P19-186860) is directly associated with the SCE transmission line/maintenance road in the current project area-of-potential effects (APE). The service roads were used to construct the power network through the Angeles National Forest and have continued to be used to maintain the system. The site does not appear eligible for listing on the National or California Registers under any of the four significance criteria (VCS Environmental 2017).

Verdugo Circuit (P-19-186860; USFS#05-01-51-138)

This portion of the Project site is Southern California Edison's (SCE's) Verdugo Circuit, as depicted on Exhibit 4-9. It is directly associated with the SCE transmission line/maintenance road, which is also within the APE. The circuit is a linear arrangement of poles, the extreme western end of which extends over the access road west of the BTR where it had split. The northern fork terminates a short distance to the east, still south of the BTR; the south fork at one time extended through Maple Canyon, where it terminated at Angeles Forest Highway. The circuit now terminates near Big Tujunga Canyon Road. The poles are still in place (without power lines) on the maintenance road between where the transmission road runs along the south wall of Maple Canyon. The site does not appear eligible for listing on the National or California Registers under any of the four significance criteria (VCS Environmental 2017).

Hansen's Lodge (USFS#05-01-55-00017)

While the Hansen's Lodge structures are no longer visible in their recorded location, previously, a private residence and Hansen's Lodge were built within the APE boundaries by Dr. Homer Hansen in the 1910s. 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, and the structure was not rebuilt. Remnants of the lodge are said to have been knocked down to deter trespassers (Leadabrand 1970, VCS Environmental 2017). The estimated location of Hansen's Lodge is depicted on Exhibit 4-9.

Dr. Hansen sold his land and buildings to LACFCD in 1930. The two-story lodge that was in the parcel was destroyed in 1938, and massive grading and hillside contouring significantly altered the land surrounding where the lodge once stood. There is a pile of stones that is supposed to have come from the chimney that remained after the Lodge building had been demolished when the dam was crested in March of 1938 by excessive rains. The area measures approximately 298 feet long by 107 feet wide, approximately 0.732 acre, and there are large, mature oak trees in this location. There are no standing structures or foundations at this site. Topographic maps and aerial photographs also show that the discharge from Big Tujunga Dam has changed the path of Big Tujunga Creek through the canyon, and the site where the Hansen Lodge was situated. The site does not appear eligible for listing on the National or California Registers under any of the four significance criteria (VCS Environmental 2017).

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, would likely 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 may 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 4-18 below summarizes the results of consultation, and all Native American correspondence can be viewed in Appendix C.

TABLE 4-18
NATIVE AMERICAN CONSULTATION SUMMARY

Date Sent	Native American Contact	Ethnographic Affiliations	Date of Follow up Phone Call	Comments
9/26/11	Charles Cook	Chumash; Fernandeno; Tataviam; Kitanemuk	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	Chumash; Tataviam; Fernandeno	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	Chumash; Fernandeno; Tataviam; Shoshone Paiute; Yaqui	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	Fernandeno; Tataviam	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	Luiseno; Diegueno	6/21/12	Left voicemail. No response was received.
9/26/11	John Valenzuela	Fernandeno; Tataviam; Serrano; Vanyume; Kitanemuk	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	Yowlumne; Kitanemuk	6/21/12	Left voicemail. No response was received.
Source: VCS Environmental 2017.				

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 due to site constraints, 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 (VCS Environmental 2017).

Downstream Side of the Dam

The downstream side of the Big Tujunga Dam could not be directly accessed due to site constraints, but all but the northernmost end could be clearly seen from various vantage points just north of Big Tujunga Canyon Road, especially from the concrete arch bridge just downstream from the dam. The down-stream area is a continuation of the narrow and steep canyon above the dam, although the canyon does widen out a small amount. The main drainage and the west side of the drainage are covered with natural riparian vegetation. The east side of the drainage is an embankment that is completely covered in cemented riprap to about 20 feet wide parallel to the drainage. A paved access road is immediately east of the riprap; both the road and riprap follow the drainage down-canyon from the north side of the dam to just above (north of) the arch bridge that carries Big Tujunga Canyon Road across the canyon (near contour level 2146). The hillside above (generally east) this paved road has been contoured for stability and drainage control, and much of the trace of the access road above the drainage between where the (paved) road leaves the canyon bottom and where it becomes part of the main dam facilities (i.e., about where Maple Canyon joins Big Tujunga Canyon) has been destroyed or obscured by grading and vegetation. The section of road from the entrance of the facilities northeast to the south (or southeast) side of the dam could not be accessed. The part of this section of road that can be seen from the entrance is paved, and it may be paved all the way to 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 (VCS Environmental 2017).

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 (VCS Environmental 2017).

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 pursuant to Section 15064.5?

Less than Significant Impact. Big Tujunga Dam is determined as eligible for listing in the National Register of Historic Places and is within the APE of the Project. However, since the Project consists of sediment removal and grading of a ramp that would extend into the BTR to facilitate grading equipment access from behind the dam, and no alteration of the dam structure would occur from sediment removal activities, there would be no adverse effects to the dam or any changes to the historic significance as a result of the Project. The hydroblasting of cement slurry and sluice gate hydraulic system repair would not cause adverse effects to the dam because these activities would only replace and repair existing components of the dam, such as replacing sections of pipes and adding needle and ball valves. The slope protection area to the north of the spillway is outside of the dam structure and would not cause adverse impacts.

The extreme eastern end of SCE's Verdugo Circuit (19-186860) extends over the access road west of BTR. This linear arrangement of utility poles and power lines should not be considered more than ordinary and ubiquitous structures. The circuit does not appear eligible for listing on the National or California Registers. The poles are not expected to be impacted by the proposed Project and no mitigation is required.

The USFS Transmission Line Road Alignment does not appear to have the potential to be considered a historic resource and is not eligible for listing on the National or California Registers

and does not meet any of the four significance criteria for eligibility. Therefore, 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 (VCS Environmental 2017).

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 Project involves the excavation of sediment accumulated behind the dam, access road paving, slope repair, and the grading of a ramp that will extend into the reservoir to facilitate access by grading equipment. The proposed Project also involves sediment placement and subsequent revegetation at Maple Canyon SPS. Therefore, there is a possibility that archaeological materials could be uncovered during necessary soil disturbance activities. Although the likelihood of encountering 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.

c) 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 indicate 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 (VCS Environmental 2017).

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.

4.5.3 MITIGATION MEASURES

MM CUL-1 Prior to the start of ground-disturbing activities, a qualified Archaeologist shall be retained by Public Works to attend the pre-grading meeting with the construction contractor to establish, based on the site plans, appropriate procedures for monitoring earth-moving activities during construction. The Archaeologist shall determine, based on consultation with Public Works, when monitoring of grading activities is needed. If any archaeological resources are discovered, construction activities must cease within 50 feet of the discovery, as appropriate, and they shall be protected from further disturbance until the qualified Archaeologist evaluates them using standard archaeological protocols. The Archaeologist must first determine whether an archaeological resource uncovered during construction is a

"Tribal Cultural Resources" pursuant to Section 21074 of the *California Public Resources Code*, or a "unique archaeological resource" pursuant to Section 21083.2(g) of the *California Public Resources Code* or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines. If the archaeological resource is determined to be a "Tribal Cultural Resource", "unique archaeological resource" or a "historical resource", the Archaeologist shall formulate a Cultural Resources Treatment and Monitoring Plan (CRTMP) in consultation with Public Works that satisfies the requirements of the above-listed Code Sections. Upon approval of the CRTMP by Public Works, the Project shall be implemented in compliance with the CRTMP.

If the Archaeologist determines that the resource is not a "Tribal Cultural Resource", "unique archaeological resource" or "historical resource," s/he shall record the site and submit the recordation form to the California Historical Resources Information System (CHRIS) at the South Central Coastal Information Center (SCCIC). The Archaeologist shall prepare a report of the results of any study prepared as part of a testing or mitigation plan, following accepted professional practice. The report shall follow guidelines of the California Office of Historic Preservation. Copies of the report shall be submitted to the County and to the CHRIS at the SCCIC at the California State University, Fullerton.

4.6 ENERGY	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

4.6.1 EXISTING CONDITIONS

Existing energy use is related to existing maintenance activities. The existing energy use at the dam includes electricity use from power lines, which provide electricity to the dam control house. Existing fuel use from BTR and Maple Canyon SPS operations includes diesel and gasoline fuel for vehicles traveling to and from the site for maintenance and inspection activities and diesel fuel for construction equipment used for occasional minor sediment removal activities.

4.6.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact. The Project would result in energy consumption from the following: (1) paving of all haul roads, except for a 0.4-mile portion that traverses through the reservoir, (2) off-road construction equipment at BTR and Maple Canyon SPS; (3) aggregate processing (crushing and screening) equipment; (4) on-road trucks hauling sediment from BTR to Maple Canyon SPS and aggregate from the aggregate processing area to the screened material stockpile and aggregate staging area; (5) personal vehicles driven to and from BTR and Maple Canyon SPS by construction workers; (6) hydroblasting to flush a stilling well on the dam crest; (7) repairing the hydraulic sluicegate; (8) access road paving and repair of the culvert crossing; (9) slope protection measures; (10) rehabilitating the northern ramp to safely access the reservoir bottom; and disposal of it; (11) closure of Maple Canyon SPS; (12) installing a boat dock at the dam face; and (13) performing minor coring on existing dam riser and installing a slide gate to facilitate dewatering.

The principal source of energy consumption 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. Off-road construction equipment use was calculated from the equipment data (mix, hours per day, horsepower, load factor, and days per phase) as provided in the CalEEMod construction output files included in Appendix A. For On-road vehicles, CARB's EMFAC 2014 and 2017 emission factors were used. The total horsepower

hours for the Project based on the construction equipment data was then multiplied by fuel usage estimates per hours of construction activities included in CARB's OFFROAD2007 model. OFFROAD2007 inputs and outputs for the energy analysis are provided in Appendix D of this Revised and Recirculated IS/MND.

Fuel consumption from construction worker, vendor, and delivery/haul trucks was calculated using the trip rates and distances provided in the CalEEMod model assumptions. Total vehicle miles traveled (VMT) was then calculated for each type of construction-related trip and divided by the corresponding miles per gallon factor using CARB's EMissions FACtor 2014 and 2017 model (EMFAC2014). EMFAC provides the total annual VMT and fuel consumed for each vehicle type. Construction equipment delivery and haul trucks were assumed to be heavy-duty diesel trucks. As shown in Table 4-19, Fuel Energy Use During Project Activities, a total of 31,237 gallons of gasoline and 89,086 gallons of diesel fuel are estimated to be consumed during Project construction.

TABLE 4-19
FUEL ENERGY USE DURING PROJECT ACTIVITIES

Source	Gasoline (gallons)	Diesel (gallons)
Off-road construction equipment	0	47,868
Worker commute trips	26,732	33
Vendor trips	4,045	44
On-road haul trips	461	41,142
Total	31,237	89,086

Sources: CalEEMod 2016.3.2, OFFROAD2007, EMFAC2014. CalEEMod, OFFROAD2007, EMFAC2014 data can be found in Appendix A, and energy data can be found in Appendix D.

Note: Fuel energy consumption was calculated for the "On-road Truck Scenario", as described in MM AQ-1, in Section 4.3, Air Quality.

Fuel energy consumed during Project activities at BTR and Maple Canyon SPS would be temporary, and this amount of fuel consumption would not represent a significant demand on energy resources. Furthermore, there are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy efficient compared to construction sites in other parts of the State. The proposed Project would not create a high enough demand for energy to require development of new energy sources, and after the restoration activities are completed, the fuel energy use would diminish to accommodate periodic maintenance of BTR and Maple Canyon SPS. Project-related construction activities are essential for flood control and to remove buildup of sediment. Therefore, the proposed Project construction activities would not result in inefficient, wasteful, or unnecessary fuel consumption. There would be a less than significant impact, and no mitigation is required.

Operation

Once the proposed Project is complete, no long-term changes would occur to the regular operation and maintenance activities at the Tujunga Dam or Maple Canyon SPS. Therefore, there would be no wasteful, inefficient, or unnecessary fuel consumption associated with operation of the Project.

Overall, the purpose of the restoration of BTR would be to maintain the capacity and safety of the dam and prevent future conditions where viability of the dam would be jeopardized by accumulation of sediment. Therefore, energy use in removing sediment as part of the proposed Project is a preventative measure that would reduce the likelihood of more intensive energy use

associated with cleanup and restoration of areas that could potentially be flooded. There would be a less than significant impact, and no mitigation is required.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The Project would be required to comply with the applicable standards in the California Energy Code, Part 6 of the California Building Standards Code (Title 24). Measures to meet the energy standards that are applicable to the Project are limited to water-efficient irrigation systems for planted/seeded native habitat at the Maple Canyon SPS. The proposed temporary irrigation systems to be installed as part of revegetation activities would comply with the applicable provisions of Title 24.

The Los Angeles Countywide Sustainability Plan, named OurCounty, was adopted on August 9, 2019. The plan aims to uphold the Paris Climate Agreement by creating a fossil-fuel free Los Angeles County within the next three decades, with 160 health-focused strategies centered on communities that have been disproportionately affected by environmental pollution. OurCounty is organized around 12 goals. OurCounty includes, but is not limited to, the following goals and milestones: powering unincorporated areas and County facilities with 100 percent renewable energy by 2025; increasing urban tree canopy coverage by 15 percent by 2035; diversity over 95 percent of waste from landfills; developing land-use tools to limit new development in high climate-hazard areas; and ensuring that all residents have safe and clean drinking water, and that rivers, lakes and the ocean meet federal water quality standards. Goal-5, which focuses on “thriving ecosystems, habitats, and biodiversity” is relevant to this Project. Specifically, Action 68 of Goal 5 aims to “establish comprehensive and coordinated management guidelines for local waterways, which balance priorities such as water management, flood risk mitigation, habitat, biodiversity, and community preference” (Chief Sustainability Office 2019). Big Tujunga Dam is a flood-control structure, and mitigation measures, as detailed in Section 4.4, Biological Resources, would ensure that impacts to habitat and biodiversity at the Project site would be reduced to less than significant. Additionally, the Project would be consistent with Action 42, which aims to develop a plan to ensure effective, well-maintained flood risk mitigation infrastructure to communities and include a mechanism to facilitate reporting of incidents by residents/municipalities to help identify and address any chronic local flooding issues” by reducing flood-risk associated with Big Tujunga Dam. Restoration of the BTR would prevent future risk of flood and damage to downstream residences, businesses, and infrastructure, therefore preventing future, highly intensive energy use to repair damages from emergency events. Therefore, the Project would be consistent with and would not conflict with the OurCounty plan.

As discussed above, the Project would involve energy use during construction activities. For the BTR, the energy associated with long-term operations would be the same as existing uses. For Maple Canyon SPS, revegetation efforts at Maple Canyon SPS would require occasional water truck trips from off-site to fill the existing 50,000-gallon water tank at Maple Canyon SPS for use in temporary irrigation. However, after the establishment of vegetation, temporary irrigation and water tanks would be removed. As such, the Project would neither obstruct nor contribute to the County’s policies related to energy use. There would be no impact, and no mitigation is required.

4.6.3 MITIGATION MEASURES

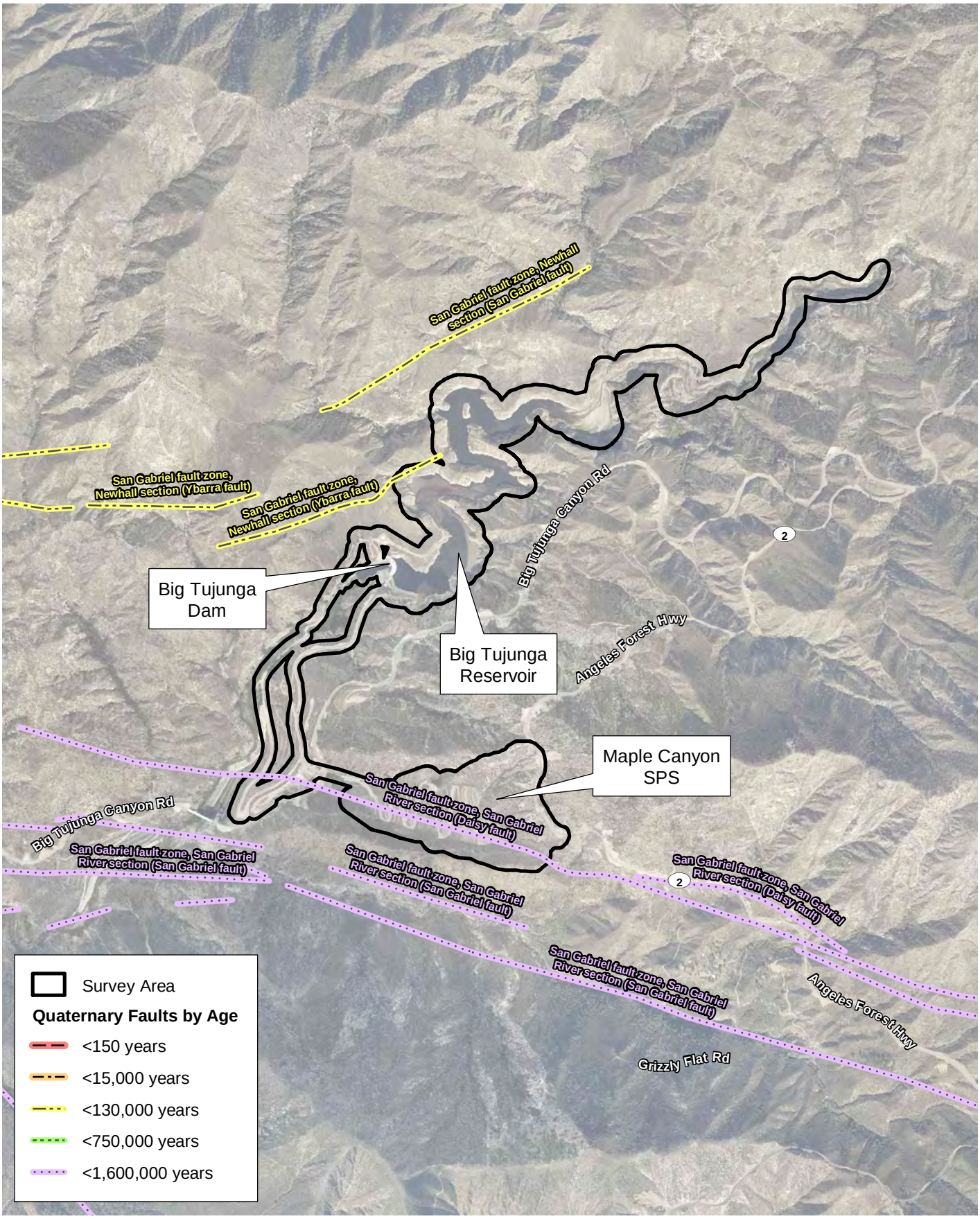
There would be no significant impacts related to energy; therefore, no mitigation measures are required.

4.7 GEOLOGY AND SOILS	**Potentially Significant Impact**	**Less than Significant with Mitigation**	**Less than Significant Impact**	**No Impact**
Would the project:				
a) Directly or indirectly cause 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 direct or indirect 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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resources or site or unique geologic feature?	☐	☐	☒	☐

4.7.1 EXISTING CONDITIONS

The proposed 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's) 2010 Geologic Map of California, the Project site is underlain by Mesozoic-age plutonic rock[23] (CGS 2017a). The site is not within an Alquist-Priolo Earthquake Fault Zone (CGS 2017c). 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 2017b; USGS and CGS 2006). As shown on Exhibit 4-10, 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

[23] 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).



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Fault Map

Exhibit 4-10

Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

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immediately to the north and west of BTR, and the San Gabriel Fault Zone is immediately south of Maple Canyon SPS (CGS 2017b; USGS and CGS 2006).

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[24] 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 4-11, 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.

4.7.2 IMPACT ANALYSIS

Regulatory Requirements

RR GEO-1 Grading, excavation, and earthwork, including fills and embankments and the control runoff from graded sites, shall comply with the California Building Code (Appendix J "Grading" of Title 24, Part 2), 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 and ensure the protection of utilities and adjacent property.

Impact Discussion

a) Would the project directly or indirectly cause 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.

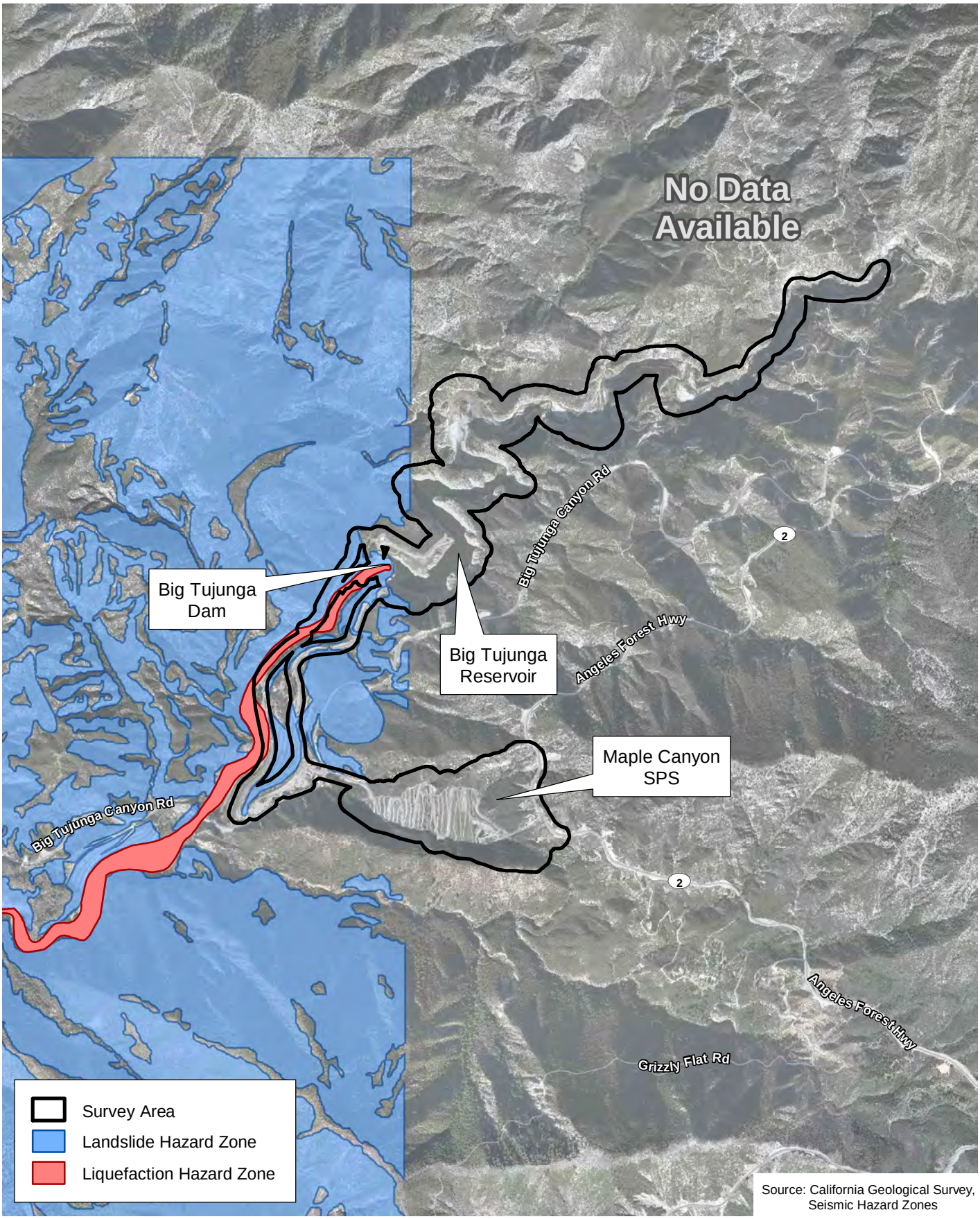
ii) Strong seismic ground shaking?

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,

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



Source: California Geological Survey, Seismic Hazard Zones

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Landslide and Liquefaction Hazard Zones

Exhibit 4-11

Big Tujunga Reservoir Sediment Removal Project

N W E S

2,000 1,000 0 2,000 Feet

PSOMAS

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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, which could result in a potentially significant impact. Also, as discussed above, the steep slopes in the Project area are considered a potential landslide hazard and the Big Tujunga Canyon bottom exhibits potential for liquefaction and could result in a potentially significant impact.

The proposed 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 the existing Maple Canyon SPS.

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, which could be a potentially significant impact.

MM HAZ-2 identifies the need for the LACFCD's Contractor to prepare a Site-Specific Health and Safety Plan that includes a designated Site Health and Safety Officer; an Access and Evacuation Plan; and an identification of site hazards, including response in the event of an earthquake. Therefore, through implementation of MM HAZ-2, there would be a less than significant direct or indirect risk associated with surface rupture, seismic ground-shaking, liquefaction, or landslides.

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

Less than Significant Impact with Mitigation. 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 (MM LUP-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 aggregate materials during the non-storm 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 and the implementation of BMPs such as straw bales, silt fencing, and/or other appropriate measures as set forth in the SWPPP. Compliance with the requirements of the SWPPP would ensure that impacts are less than significant.

Additionally, MM AQ-3 will be implemented to require paving of all existing unpaved portions of the access road loop, with the exception of 0.4-mile that traverses through the reservoir. In addition to reducing fugitive dust, as necessary for air quality related impacts, MM AQ-3 will also serve to reduce erosion potential and loss of topsoil. RR AQ-1 (SCAQMD Rule 403) is also included to require revegetation or other effective means of soil stabilization at Maple Canyon SPS if sediment placement activities are phased, which would also serve to reduce soil erosion and loss of topsoil.Therefore, with implementation of MM AQ-3, MM LUP-1, and RR AQ-1 there would be less than significant impacts.

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?

Less than Significant Impact with Mitigation. 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 2017).

However, the placement of sediment within Maple Canyon SPS and the aggregate stockpiles does require specific placement processes to ensure that any concentrated sediments with high organic content are managed appropriately. Mismanagement of sediment placement within Maple Canyon SPS and aggregate stockpiles could result in a potentially significant impact. As such, MM GEO-1 requires that aggregate for stockpiles be obtained only from the middle and upper portions of the BTR; that sediment with high moisture content be dried prior to blending; and that sediment with high organic content be blended with other sediment so that the organic content does not exceed five percent prior to placement within the stockpiles or Maple Canyon SPS. Compliance with MM GEO-1 would ensure that impacts associated with compaction of soils would be less than significant.

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 4.7[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 in compliance with the grading standards in the California Building Code (RR GEO-1) and would be revegetated per USFS' *Draft Maple Canyon Sediment Placement Site Revegetation Plan*. No habitable structures would be built that would be exposed to hazards associated with location on an unstable geologic unit. Through compliance with RR GEO-1 and implementation of MM GEO-1, there would be less than significant impacts related to location of an unstable geologic unit.

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

Less than Significant Impact. As stated in Threshold 4.7[c], the primary soil associations mapped within the Project survey area include Rock outcrop-Chilao family-Haploxerolis, warm and Olete-Kilburn-Etsel families complex. 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. There would be a less than significant impact related to expansive soils, creating substantial direct or indirect risks to life or property, due to the Project, 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 proposed Project would not include the construction of septic tanks. 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.

f) Would the project directly or indirectly destroy a unique paleontological resources or site or unique geologic feature?

Less than Significant Impact. While excavations to significant depths into native soils may encounter significant sediments in the southwestern portion of the Project site, such excavations are not planned or required for the Project. 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. Activities such as hydroblasting of cement slurry, and sluice gate hydraulic system repair would only affect components internal to the dam structure and would not require excavation. Slope stabilization and the access road construction would not require deep excavations into native soils.

The proposed Project would involve occasional localized filling or shallow grading to maintain the access roads at this location, or for activities related to revegetation at the Maple Canyon SPS. These activities would result in the disturbance of non-native surficial sediments that have been previously disturbed. The proposed Project would not excavate to a depth that could likely encounter paleontological resources. There would be less than significant impacts, and no mitigation is required.

4.7.3 MITIGATION MEASURES

MM GEO-1 Throughout sediment removal activities and during the sorting of the sediment for beneficial reuse through the aggregate stockpiles, the LACFCD shall require the Contractor to use only suitable sized gravels and cobbles from the upper and middle portions of the Big Tujunga Reservoir as suitable for use as aggregate. Sediments from the lower portion of the Big Tujunga Reservoir shall be evaluated for suitability as aggregate prior to stockpiling. All sediment with high organic contents shall be blended with other sediment to ensure that the organic content

does not exceed 5 percent prior to placement at the Maple Canyon SPS and/or stockpiled.

Compliance with MM HAZ-2 would reduce direct or indirect risk associated with surface rupture, seismic ground-shaking, liquefaction, or landslides to less than significant levels.

Compliance with MM AQ-3 would reduce impacts pertaining to erosion and loss of topsoil at unpaved roads to less than significant.

4.8 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?	☐	☐	☐	☒

4.8.1 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 majority of global warming is attributed to GHGs generated by various human activities. GHG emissions that are caused or produced by humans include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). These GHGs have relatively long atmospheric lifetimes (ranging from one year to several thousand years), allowing them to disperse around the globe. In addition, GHGs vary widely in the power of their climatic effects. Table 4-20 shows the magnitude of GHG emissions on the global, national, State, and regional scales.[25]

TABLE 4-20
COMPARISON OF WORLDWIDE GHG EMISSIONS

Area and Data Year	Annual GHG Emissions ($MMTCO_2e$)
World (2013)	45,261
United States (2013)	6,280
California (2015)	440
Los Angeles County, Unincorporated (2010)	6
$MMTCO_2e$: million metric tons of CO_2e; GHG: greenhouse gas(es)	
Source: WRI 2017; CARB 2017b; LACDRP 2015b.	

[25] 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, codifying the goal of Executive Order (EO) S-3-05.

4.8.2 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.

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 2016.3.2 (CAPCOA 2016). GHG emissions for on-road trucks were calculated using EMFAC 2014 and 2017.

Estimated GHG emissions are shown in Table 4-21.

TABLE 4-21
PROJECT-RELATED SHORT-TERM ANNUAL GHG EMISSIONS

Source	GHG Emissions ($MTCO_2e$)
Off-road equipment and worker commute vehicles from sediment excavation/placement and revegetation of Maple Canyon SPS*	1,997
On-road trucks	541
Total – 1 year	2,538
Total – 5 year	12,689
Amortized Construction Emissions	**423**
SCAQMD Threshold	**10,000**
Exceeds Threshold?	**No**
Calculation data in Appendix A. * For purposes of a conservative GHG analysis, the use of the off-road truck is included within this number.	

As shown in Table 4-21, estimated GHG emissions for the Project are 2,538 $MTCO_2e$ for 1 year, and 12,689 $MTCO_2e$ for 5 years. Because impacts from construction activities occur over a relatively short period of time, they contribute a relatively small portion of the overall lifetime project GHG emissions. In addition, GHG emission reduction measures for construction equipment are relatively limited. The SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime so that GHG reduction measures address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD 2008). Therefore, the amortized emissions from the Project would be 423 $MTCO_2e$. The amortized emissions 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.

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 project level is not addressed. Therefore, the proposed Project does not conflict with these plans and regulations.

The Los Angeles County 2035 General Plan was adopted by the Los Angeles County Board of Supervisors on October 6, 2015. The Los Angeles County 2035 General Plan accommodates new housing and jobs within the unincorporated areas in anticipation of population growth in the County and the region (LACDRP 2015a). The Air Quality Element summarizes air quality issues and outlines the goals and policies in the General Plan that will improve air quality and reduce the GHG emissions. It states "The South Coast Air Basin, which includes the majority of Los Angeles County, continues to have among the worst air quality ratings in the country. Additionally, climate change, caused by an increase in greenhouse gas emissions, is one the most pressing environmental issues faced by all levels of government. Air pollution and climate change pose serious threats to the environment, economy, and public health" (LACDRP 2015a).

The Final Unincorporated Los Angeles County Community Climate Action Plan 2020 (CCAP) is part of the County General Plan and was adopted along with the General Plan on October 6, 2015. The CCAP provides policy guidance for reducing GHG emissions generated within the unincorporated areas. The CCAP ensures that the County will be able to reduce its emissions to 1990 levels by 2020 (LACDRP 2015b). The CCAP includes 26 local community actions to reduce GHG emissions from the County's community activities; the strategies are grouped into the following five strategy areas: Green building and energy; land use and transportation; water conservation and wastewater; waste reduction, reuse, and recycling; and land conservation and tree planting.

The CCAP focuses on new development and redevelopment and does not generally address impacts from industrial infrastructure projects. However, the County of Los Angeles is currently developing a proposed Municipal Climate Action Plan (MCAP) that would focus on GHG emissions that may result from the County's municipal operations that include but are not limited to cogeneration facilities, owned landfills, wastewater treatment plants, and water conveyance (LACDRP 2015b).

The County CCAP includes 26 specific actions to reduce GHG emissions. While none of these actions are specifically applicable to the BTR Restoration Project, action WAW-2, as part of the water conservation and wastewater strategy, includes a goal to manage stormwater. Because the Project would allow the BTR to adequately perform its main functions of flood control and water conservation, the Project would be consistent with and would not conflict with the CCAP.

As stated in Section 4.6, Energy, the Los Angeles Countywide Sustainability Plan, named OurCounty, was adopted on August 9, 2019. The plan aims to uphold the Paris Climate Agreement by creating a fossil-fuel free Los Angeles County within the next three decades, with 160 health-focused strategies centered on communities that have been disproportionately affected by environmental pollution. OurCounty is organized around 12 goals. OurCounty includes, but is not limited to, the following goals and milestones: powering unincorporated areas and County facilities with 100 percent renewable energy by 2025; increasing urban tree canopy coverage by 15 percent by 2035; diversity over 95 percent of waste from landfills; developing land-use tools to limit new development in high climate-hazard areas; and ensuring that all residents have safe and clean drinking water, and that rivers, lakes and the ocean meet federal water quality standards. Goal-5, which focuses on "thriving ecosystems, habitats, and biodiversity" is relevant to this Project. Specifically, Action 68 of Goal 5 aims to "establish comprehensive and coordinated management guidelines for local waterways which balance priorities such as water management, flood risk mitigation, habitat, biodiversity, and community preference" (Chief Sustainability Office 2019). Big Tujunga Dam is a flood-control structure, and

mitigation measures, as detailed in Section 4.4, Biological Resources, would ensure that impacts to habitat and biodiversity at the Project site would be reduced to less than significant. Additionally, the Project would be consistent with Action 42, which aims to develop a plan to ensure effective, well-maintained flood risk mitigation infrastructure to communities and include a mechanism to facilitate reporting of incidents by residents/municipalities to help identify and address any chronic local flooding issues" by reducing flood-risk associated with Big Tujunga Dam. Therefore, the Project would be consistent with and would not conflict with the OurCounty plan.

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.

4.8.3 MITIGATION MEASURES

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

4.9 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 or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☒	☐	☐

4.9.1 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) currently 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 5 miles southwest of Maple Canyon SPS (DTSC 2017). 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 2017). 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 (SCE 2017). 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 2017).

4.9.2 IMPACT ANALYSIS

Regulatory Requirements

RR HAZ-1 Any Project-related hazardous materials and/or hazardous wastes must be used, stored, disposed, and transported in compliance with all applicable State and federal requirements, which may include but may not limited to those set forth by the U.S. Department of Transportation (CFR Title 49, Hazardous Materials Transportation Act); U.S. Environmental Protection Agency regulations; California Department of Toxic Substances Control (DTSC); California Department of Transportation (Caltrans); California Department of Public Health (CDPH); and California Occupational Safety and Health Administration (CalOSHA). Any unauthorized release of hazardous materials will require release reporting, initial abatement, and corrective actions that will be completed with oversight from the Los Angeles Regional Water Quality Control Board (RWQCB), DTSC, South Coast Air Quality Management District (SCAQMD), the Los Angeles County Fire Department, which serves as the designated local Certified Unified Program Agency (CUPA), and/or other regulatory agencies, as necessary.

RR HAZ-2 Temporary electrical power lines may be extended to the Big Tujunga Reservoir from either the existing nearby power lines or the power lines at the dam, 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?

Less than Significant with Mitigation. Hazardous material use for proposed sediment removal and placement activities, hydroblasting of cement slurry, and sluice gate hydraulic system repair 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.

To prevent environmental hazards, the handling of hazardous materials used in equipment would 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 4.10, 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.

However, the Project would be operating in some areas with uneven terrain and on unpaved areas with large pieces of equipment and large trucks. 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 in accordance with RR HAZ-1. Due to the presence of surface water bodies, the potential for water contamination and the likelihood that contaminated soils would accidentently end up in Big Tujunga Creek, the Project has to potential to 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, resulting in a significant impact. However, the following MM HAZ-1 through MM HAZ-3 are proposed to reduce the potential impacts to less than significant.

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. MM HAZ-2 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; and identification of site hazards. MM HAZ-3 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.

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 electromagnetic fields (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.

Compliance with applicable regulations and implementation of MM HAZ-1 through MM HAZ-3 would ensure that Project-related impacts due to the routine transport of hazardous materials or the reasonably foreseeable upset and accident conditions would be less than significant.

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 Impact. The workers on the Project site would be involved in the excavation and transport of sediment that has been washed down from the mountainsides into BTR. The Station Fire in 2009 required the use of fire retardants throughout the burn area, and residual retardants may be within the excavated sediments. As such, there may be potential hazards associated with the presence of fire retardants in on-site soils, which could be released into the environment through Project-related sediment removal activities.

The USFS prepares a programmatic risk assessment of human health hazards every 5 to 10 years, as the products that are in use are modified or new products are added. The latest risk assessment, titled *Human Health Risk Assessment of Wildland Fire-Fighting Chemicals: Long-Term Fire Retardants*, found that, for typical exposures, all products resulted in hazard quotients less than one, indicating negligible risk to fire-fighting personnel from the retardant products under typical conditions of exposure. In the maximum scenarios, the hazard quotients for one product exceeded hazard quotients of one, indicating a risk for male and female airtanker base personnel mixing and loading Phos-Chek G75-W (Labat 2013). As workers on the Project would not have direct contact with fire retardants, and any remnant fire retardants that remain in the sediments within BTR would be expected to have a concentration considerably less than the direct exposure of airtanker base personnel that mix and load the fire retardants, the risk to Project workers would be negligible.

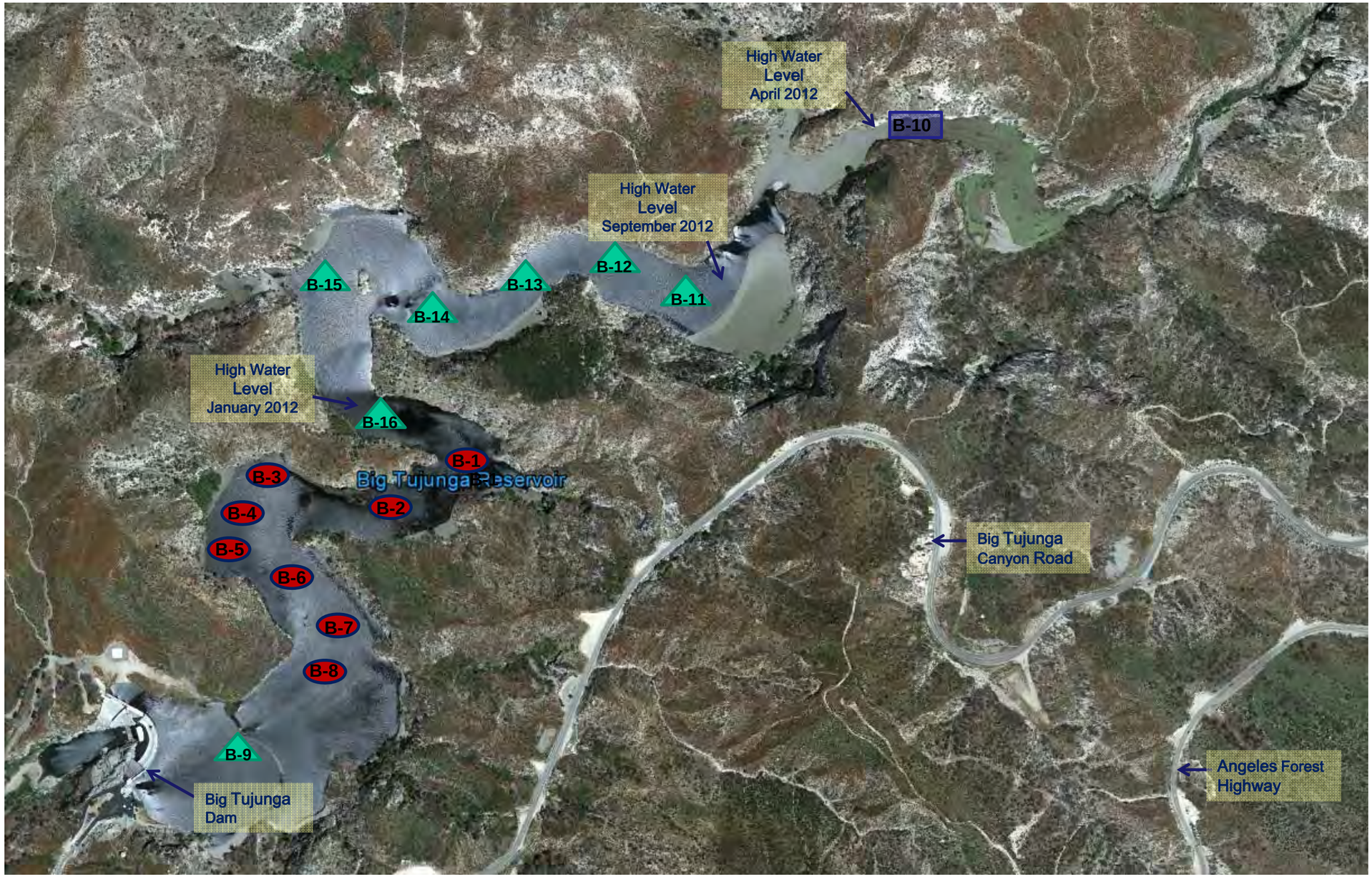
In 2018, the Geotechnical and Materials Engineering Division of LACFCD conducted a soils analysis in BTR in which nine locations, including underwater locations, were sampled and submitted for testing. This study, titled *Sediment Characterization Study, Big Tujunga Dam and Reservoir Sediment Removal Project* can be found in Appendix E of this Revised and Recirculated IS/MND. The locations of the soil tests are depicted in Exhibit 4-12. The following analytical tests were performed: California Code of Regulations (CCR) Title 22 Metals including mercury, volatile organic compounds including fuel oxygenates, semivolatile organic compounds, organochlorine pesticides, chlorinated herbicides, polynuclear aromatic hydrocarbons, polychlorinated biphenyls, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). Based on the analytical results of the tests (see Appendix E), semivolatile organic compounds, organochlorine pesticides, chlorinated herbicides, polynuclear aromatic hydrocarbons, polychlorinated biphenyls, carbofurans, 1,4 Dioxane and 2,3,7,8-TCDD were not detected in any of the samples analyzed. The concentrations of detected metals and volatile organic compounds do not indicate significant contamination or hazardous conditions and are below the applicable California Human Health Screening Levels. Special provisions for health and safety and for the handling or disposal of excavated soils in BTR are not required. Therefore, residual contaminants within the sediment would not create a significant hazard to the public involving the release of hazardous materials into the environment.

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?

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, and no mitigation is required.

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



Legend

Location	Sample Type
B-7	Geotechnical ponar samples
B-7	Geotechnical test pit
B-7	Environmental and Geotechnical ponar samples

Source: Los Angeles County Department of Public Works, September 2012

Underwater Sample and Test Pit Location Map

Exhibit 4-12

Big Tujunga Reservoir Sediment Removal Project

N W E S

PSOMAS

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create a significant hazard to the public or the environment. No impact would occur, and no mitigation is required.

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 or excessive noise 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 proposed 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. Additionally, the Project would not result in excessive noise for people residing or working in the project area, as no airports exists within ten miles of BTR and Maple Canyon SPS. There would be no impacts related to air traffic or noise, and no mitigation is required.

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

Less than Significant with Mitigation. 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 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, resulting in a significant impact, prior to mitigation.

However, MM TRA-1 would be implemented to ensure that impacts to emergency response and evacuation would be reduced to less than significant. 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 4.17, Transportation. The Plan will include, but not be limited to, the following requirements: (1) a flag person(s) will be stationed at the intersection of the Project access road and Big Tujunga Canyon Road during all trucking operations; (2) truck traffic will be managed such that no queuing would 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 will 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 will be set forth, as necessary. Thus, with compliance with MM TRA-1 impacts to emergency response and evacuation would be less than significant.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

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 Project 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 directly or indirectly 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 initiate wildfires and 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; the presence of construction equipment that utilize flammable liquids; and the presence of combustion engines, among others.

In order to reduce wildfire risks and to protect workers during Project activities, MM HAZ-4 requires compliance with Article 87 of the *California Fire Code* and National Fire Protection Association Standard No. 1. MM HAZ-4 requires preparation of 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 prepared to the satisfaction of the LACFCD and provided to the USFS for review and approval prior to commencement of any Project activities. Therefore, implementation of MM HAZ-4 would ensure that short-term wildfire hazards associated with Project activities would be less than significant. Additionally, compliance with the Uniform Fire Code (RR HAZ-2) for power line extensions would prevent fire hazards associated with electrical lines. Impacts related to exposing people or structures directly or indirectly to wildland fires would be less than significant with mitigation.

4.9.3 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 or Maple Canyon SPS 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 refueling requirements identified in the LACFCD 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 Prior to commencement of any Project 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 shall require that all on-site workers be trained annually on the requirements and protocols. 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.
- 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-3 Prior to commencement of any Project activities in the first year of Project implementation, the LACFCD shall require the Contractor to prepare an Emergency Procedures-Fall Protection Program developed specifically for the Project site where the construction work shall be performed. The Program shall require that all on-site workers be trained annually on the requirements and protocols. 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 Program shall identify the following:

- Type of fall protection 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-4 Prior to commencement of any Project 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 contractor 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 Plan shall

require that all on-site workers be trained annually on the requirements and protocols. The Fire Protection Plan shall be prepared to the satisfaction of LACFCD and provided to the USFS for review and approval prior to commencement of any Project activities.

4.10 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 or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
(i) result in substantial erosion or siltation onsite or offsite;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv) in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
d) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

4.10.1 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 concrete channel Tujunga Wash (maintained by LACFCD), the Los Angeles River (maintained by LACFCD and USACE), 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 the majority of the San Fernando Valley.

Water inflow to BTR varies considerably from day to day and from year to year, based on weather events. Big Tujunga Canyon Creek upstream of BTR 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 proposed 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 2015c). The Big Tujunga Creek and Wash are not listed as impaired water bodies under Section 303(d) of the Clean Water Act (LARWQCB 2009).

4.10.2 IMPACT ANALYSIS

Regulatory Requirements

RR HYD-1 All earthwork activities that would affect one or more acre of land are required to 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 as amended by 2010-0014-DWQ and 2012-0006-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.

RR HYD-3 Activities that result in a discharge of dredged or fill materials into "waters of the United States" require an authorization from the U.S. Army Corps of Engineers (USACE) as described in Section 404 of the federal Clean Water Act (CWA). Regulatory authorization in the form of a Nationwide Permit (NWP) is provided for certain categories of activities that are pre-authorized under the National Environmental Policy Act (NEPA). NWPs authorize only those activities with minimal adverse effects on the aquatic environment and are valid only if a project is compliant with the general and regional conditions associated with the applicable NWP. Projects that do not qualify under any of the NWPs must be authorized by an Individual Permit (IP) which requires NEPA analysis that is specific to a project. Issuance of a Section 404 NWP or IP is dependent on receipt of a Water Quality Certification by the Regional Water Quality Control Board (RWQCB) per Section 401 of the CWA.

RR HYD-4 Discharges to "waters of the State" over which the federal government does not assert jurisdiction are regulated under the California State Water Resources Control Board (SWRCB) Order No. 2004-0004-DWQ, "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the

U.S. Army Corps of Engineers (USACE) to be Outside of Federal Jurisdiction", which requires that any person discharging waste, which could affect the quality of the "waters of the State" must file a report of waste discharge, pursuant to Section 13260(a) of the California Water Code (Water Code). Section 13263(a) of the Water Code requires the Regional Water Quality Control Board (RWQCB) to issue Waste Discharge Requirements (WDR) to protect the beneficial uses and water quality objectives of the relevant Water Quality Control Plan. Implementation of the WDR will ensure compliance with the objectives of the Water Quality Control Plan for the Los Angeles Region.

Impact Discussion

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant with Mitigation. The proposed 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 possible, with the remaining water 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, resulting in a potentially significant impact.

In order to ensure that any residual sediment in the plunge pool waters do not negatively affect downstream waters, MM BIO-4 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-4 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. Therefore, implementation of MM BIO-4 would ensure that water quality impacts related to sedimentation would be less than significant.

The proposed 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 during Project activities would be introduced to the Project site that would generate additional sewage, but the increased amount would be negligible and collected in portable toilets for off-site disposal. 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. Particularly, this could occur during hydroblasting of cement slurry, and sluice gate hydraulic system repair, which would occur within the dam. Potable water would be used to hydroblast the stilling well; reservoir water would not be used for hydroblasting. The water from hydroblasting would then be captured and stored into water tanks that would be mobilized at the Project site. The accidental introduction of these pollutants into the creek would be a significant impact prior to mitigation. However, 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 and therefore would minimize the potential for degradation of surface or ground water quality. 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. Additionally, regarding discharge of dredged or fill material into "waters of the United States", the Project is required to obtain an authorization from the USACE as described in Section 404 of the federal CWA (RR HYD-3). Please also refer to RR HYD-4 regarding discharge into the "waters of the State" where RWQCB takes jurisdiction under Porter Cologne and for which a separate WDR may be issued.

Thus, with implementation of the above mitigation measures, impacts on surface and ground water quality would be reduced to less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than Significant Impact with Mitigation. 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 (HDPE) line directly into Penstock 1 or 2. 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. As described in Section 4.4, Biological Resources, above, during the Project, supplemental releases would not be available for a period of five years and the downstream system will be entirely dependent on natural conditions (i.e., inflow). A hydraulic model was used to model Big Tujunga Creek from downstream of the Big Tujunga Dam plunge pool to just upstream of the Oro Vista Avenue stream crossing to compare the stream hydraulics with and without supplemental releases between April 15 and October 15. The result of the model showed that the supplemental releases result in a moderate increase in both maximum velocity (0.2 to 0.4 fps for most of the active stream, larger increases in segments) and a moderate increase in average velocity (average 0.2 fps faster) (Tables 4-10 through 4-13). As rainfall over the last several years has been below average, supplemental releases have been less than those assumed in the analysis; thus, the increase in area, depth, and stream velocity are assumed to have been a portion of the totals. As stated, during the Project the system would be subject to natural conditions (i.e., inflow only) during the non-storm season for a period of five years. During dry years, Big Tujunga Creek may become intermittent with portions of the creek drying.

Using the LACFCD's database of flow releases from the dam, a statistical "t-test" analysis[26] was performed on inflow/outflow data[27] during the months of May, June, July, August, and September from 1999 to 2012 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 (BonTerra Consulting 2013).

The proposed sediment removal activities would not require the use of municipal water supplies and would therefore have no demand for groundwater supplies. However, water would be required during the sediment removal activities for dust control purposes. The majority of the truck route would be paved to reduce fugitive dust; however, water will be required for dust control within the unpaved portion of the access road that traverses through the reservoir. Because dust control is required after dewatering of the BTR, to mitigate impact pertaining to fugitive dust and avoid impact related to groundwater, MM HYD-1 is introduced to require that the LACFCD's Construction Contractor provide on-site water storage tanks to ensure an adequate water supply for dust suppression while avoiding the need to take any water from the bypass operations. The water for the storage tanks will be imported throughout the Project. Additionally, if sediment removal is phased and for revegetation efforts at Maple Canyon SPS, water truck trips from off-site hydrants or from existing water lines supplying the dam control house would be required in order to fill the existing 50,000-gallon water tank at Maple Canyon SPS for use in irrigation. Therefore, with implementation of MM HYD-1, the Project would have no demands for groundwater supplies and would not interfere substantially with groundwater recharge or a lowering of the local groundwater table level as a result of Project implementation and would therefore not impede sustainable groundwater management of the basin.

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 or through the addition of impervious surfaces, in a manner that would:

(i) 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, therefore adding impervious surfaces to the Project site. 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

[26] The t-test assesses whether the means of two groups are statistically different from each other.

[27] 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.

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 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 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 months of April and May 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. The reservoir would be dewatered during the storm season (October 15 to April 15) to the extent practicable. Releases shall not exceed 180 cfs during the non-storm season, 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 five days of ramping flows to reach an outflow of 180 cfs. In total, approximately five 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 the 2,188 feet elevation and there is less water pressure from water in the reservoir (Chimienti 2012).

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 below the maximum flow (i.e., 200 cfs). These 2011 high flow rates are well above the anticipated releases during dewatering activities.

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 or through the addition of impervious surfaces, in a manner that would:

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite

Less than Significant Impact. 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 or through the addition of

impervious surface) in a manner that would result in substantial erosion or siltation on site or off site. The impacts would be less than significant, and no mitigation is required.

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 resulting in 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 and increase the amount of emergency water to fight forest fires, which would be a beneficial impact.

The sediment placement at Maple Canyon SPS would change drainage patterns within Maple Canyon. Drainage pipes with drop inlets would be installed to maintain storm water flows associated with the former Maple Canyon Creek. These changes would be confined within the SPS and would not affect downstream drainage patterns and flows. Impacts would be less than significant, and no mitigation is required.

The proposed Project would not involve the construction of any permanent housing, structure, or infrastructure improvement. Sediment removal activities would not create or increase the rate or amount of surface runoff and 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. Less than significant impacts related to flooding on- or off-site would occur, 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 or through the addition of impervious surfaces, in a manner that would:

(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. As stated under Threshold 4.10[c-ii], the sediment placement at Maple Canyon SPS would change drainage patterns within Maple Canyon. Drainage pipes with drop inlets would be installed to maintain storm water flows associated with the former Maple Canyon Creek. 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 exceeding the capacity of existing stormwater drainage systems nor would it provide substantial additional sources of polluted runoff. Impacts would be less than significant, 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 or through the addition of impervious surfaces, in a manner that would:

(iv) in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant Impact. The Project site is not located within the Federal Emergency Management Agency (FEMA) Flood Zone designations of 1 percent Annual Chance Flood and 0.2 percent Annual Chance Flood. Overall, the BTR and Maple Canyon SPS are not located within areas with flood hazards (LACRDP 2015c). The Project activities related to grading, excavation, and earthwork, including fills and embankments and the control runoff from graded sites, would be required to comply with RR GEO-1, which would prevent general hazards and flood hazards. 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. The Big Tujunga Dam has not been subject to failure in the past, and seismic upgrade 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 2015c). Therefore, there would be a less than significant impact related to release of pollutants due to project inundation in a flood hazard zone.

The proposed Project would not expose people or structures to tsunami hazards since the Project area is located inland and away from the Pacific Ocean (LACDRP 2015d). 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 and not expected to change as a result of the Project. Additionally, no modifications to the dam are proposed that would cause or increase seiche hazards during earthquake events. Although replacing the existing sediment volume by water may potentially result in the likelihood of transmitting increased seismic energy, the potential impacts would be negligible and less than significant. Less than significant impacts related to risk of pollutant release due to Project inundation in flood hazard, tsunami, or seiche zones would result, and no mitigation is required.

d) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact. As discussed in Section 3.2.1, Required Approvals and Permits, sediment removal activities in BTR are under the jurisdiction of various resource agencies, including the USACE, the Los Angeles RWQCB, and the CDFW due to the presence of “waters of the U.S.” and “waters of the State” within the BTR 100 percent capacity contour (i.e., the topographical limit of storage capacity). Additionally, since Maple Canyon SPS is located within the Angeles National Forest on property owned by the USFS, the USFS would need to issue a Special Use Permit (SUP), as described in Section 3.1.6 and required by MM LUP-1, to allow for the deposition of sediment and subsequent revegetation at Maple Canyon SPS.

There are nine RWQCBs in California. The Project site for this Project are in Region 4, the Los Angeles Region. The SWRCB and the Los Angeles RWQCB have adopted a Water Quality Control Plan (or “Basin Plan”) for the Los Angeles Region. The Basin Plan contains goals and policies, descriptions of conditions, and proposed solutions to surface and groundwater issues. The Basin Plan also establishes water quality standards for surface and groundwater resources and includes beneficial uses and levels of water quality that must be met and maintained to protect these uses. As described in RR HYD-2, the Project must comply with all of the conditions of the RWQCB, which 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. Additionally, disturbance to jurisdictional surface waters (i.e., wetlands, channels, ponds, or marine waters) requires a Federal Clean Water Act Section 404 permit from the USACE, a Federal Clean Water Act Section 401 Water Quality Certification and National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB/ SWRCB, a Section 1600 Agreement pursuant to the California Fish and Game Code from the CDFW. As part of the Project, these permits would be obtained, as detailed in RR BIO-1. Additionally, the Project site is not located within areas of Los Angeles County that have medium or high priority basins in critical overdraft. Medium or high priority basins are managed by sustainable groundwater management plans in the County (LACWD 2019). Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Overall, there would be a less than significant impact, and no mitigation is required.

4.10.3 MITIGATION MEASURES

MM HYD-1 Prior to commencement of any Project activities in each year of Project implementation, the LACFCD shall require the Contractor to provide on-site water storage tanks to ensure adequate water availability for fugitive dust suppression. The water for the storage tanks shall be imported throughout the Project.

MM BIO-4 and MM HAZ-1 would also apply. Compliance with MM BIO-4 requires implementation of water quality filtration BMPs to ensure that water quality impacts related to sedimentation would be less than significant. MM HAZ-1 would reduce the uncontrolled spread of wildlife and exposure of people or structures to significant risks.

4.11 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) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

4.11.1 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 statutory easement from the United States. Operation of Maple Canyon SPS would require a new SUP from the USFS. BTR and Maple Canyon SPS have an open space resource designation of "Federal Land" in the County General Plan Open Space Resources Policy Map, and a zoning designation of "W" (Watershed) in the County's Zoning Map (LACDRP 2017).

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" and Maple Canyon SPS as "Developed Area Interface" (USFS 2005b).

4.11.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project physically divide an established community?

No Impact. The proposed sediment removal and revegetation activities would 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. No impact would occur, and no mitigation is required.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact 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 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 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.

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 proposed 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 adopted to avoid or mitigate an environmental impact. The LACFCD holds a statutory easement for BTR, however, the LACFCD does not currently have an active SUP for the operation and revegetation of the Maple Canyon SPS. MM LUP-1 would require that the LACFCD obtain a SUP from the USFS for the proposed sediment placement activities at Maple Canyon SPS. As such, prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall submit a complete application to the USFS for issuance of a SUP, which shall include USFS' completed *Draft Maple Canyon Sediment Placement Site Revegetation Plan*. This draft document establishes performance standards to restore the mitigation areas of the Maple Canyon SPS. With the issuance of a SUP from the USFS through implementation of MM LUP-1, there would be less than significant impacts related to applicable land use plans, policies, or regulations.

4.11.3 MITIGATION MEASURES

MM LUP-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, in compliance with the U.S. Forest Service (USFS) requirements, the LACFCD shall submit a complete application to the USFS for the issuance of a Special Use Permit (SUP) for the continued operation of Maple Canyon Sediment Placement Site (SPS) for the placement of sediment removed from Big Tujunga Reservoir into the SPS and for revegetation of the SPS. Prior to commencement of sediment removal activities, the application and all supporting technical information, including the USFS' *Draft Maple Canyon Sediment Placement Site Revegetation Plan*, shall be completed to the satisfaction of the USFS. The draft document establishes conceptual installation, maintenance, and monitoring guidelines for establishment of native plant species in the Maple Canyon SPS at the conclusion of sediment placement. Based on the Performance

Standards, the restoration of the mitigation areas shall be considered successful when all the following criteria are met:

- Canopy cover by native species shall attain cover during the 180-day establishment period. Restored areas shall also have acceptable cover at the beginning of the growing season of the year and increase in coverage over the implementation period of ten years. Restored areas shall have an annual nonnative species composition deemed acceptable by the USFS.
- Woody perennial non-native species and non-native grass and herbaceous species shall have a coverage deemed acceptable by the USFS.
- Prior to the agreement that performance standards are met, all restoration sites shall be given an assessment in accordance with the requirements listed in Appendix A, Section A-7 (Maintenance and Trend Monitoring) of the revegetation document.

4.12 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?	☐	☐	☐	☒

4.12.1 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 (LACDRP 2015). 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 2017). Additionally, there are no ongoing mining or extraction activities at or near Big Tujunga Canyon.

4.12.2 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?

No Impact. There are no identified mineral resources in the Project area. The proposed 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. There would be no impact.

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 proposed Project would involve temporary crushing and stockpiling of aggregate material for up to 28,000 cy. The aggregate material would be reused within the USFS boundaries for projects unrelated to BTR Restoration Project. Aggregate material would be stored at the stockpile area west of Maple Canyon SPS and would be available for use by both Public Works' SWMD and RMD for routine maintenance activities. The proposed 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.

4.12.3 MITIGATION MEASURES

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

4.13 NOISE	**Potentially Significant Impact**	**Less than Significant with Mitigation**	**Less than Significant Impact**	**No Impact**
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) For a project located within-the vicinity of a private airstrip or-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?	☐	☐	☐	☒

4.13.1 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 an 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 an LACFCD employee; (2) the Dam Operator is housed in a BTR facility in order to fulfill job description requirements; (3) the noise from the proposed Project is inherent to BTR operations; and (4) the residence of the Dam Operator will not be occupied when noise is generated during sediment removal 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 proposed Project vicinity is a quiet, rural area. Noise sources include vehicles passing through on Big Tujunga Canyon Road and those coming to and from the site for maintenance and inspection activities and equipment used for occasional sediment removal activities.

4.13.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

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 catch basins, 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. Table 4-22 shows the noise levels associated with each construction phase at the nearest noise sensitive use. At residences two miles from the Project site, without intervening topography and vegetation, maximum noise levels would be between 29-38 dBA L_{eq}.

TABLE 4-22
CONSTRUCTION NOISE LEVELS AT NOISE-SENSITIVE USES

Construction Phase	Noise Levels (L_{eq} dBA)	Los Angele County Noise Limits for Stationary Equipment (L_{eq} dBA)	Exceeds Noise Limits?
Ground Clearing/Demolition	38	60	No
Excavation	33	60	No
Paving and Site Cleanup	29	60	No

L_{eq} dBA: Average noise energy level; Max: maximum; avg: average; ft: feet
Note: Noise levels from construction activities do not take into account attenuation provided by intervening structures.
Source: USEPAUSEPA 1971.

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. Project-related construction noise impacts include Project-related traffic to and from the Project site. For traffic conditions, a doubling of traffic (i.e., an increase of 100 percent) would result in a 3 decibel increase in noise levels audible increase in traffic noise (FTA 2006). Traffic counts on two dates in 2017 show an average of 170 vehicles during the peak hour on Big Tujunga Canyon Road west of Angeles Forest Highway in the Project area (Public Works 2017). Double-bottom belly dump trucks or off-highway trucks and 18 pieces of construction equipment would be mobilized to the Project site at the beginning of the non-storm season and would stay on-site until the sediment removal activities are concluded for that season, unless repairs, emergency, or other unusual needs arise that necessitate removing the trucks or equipment from the site. The dump trucks and equipment would then leave the Project site at the end of the non-storm season. One day of equipment mobilization to the Project site involving dump trucks or equipment occurring two times per year would not result in a substantial temporary or periodic increase in ambient noise along roadways leading to the Project site, because it would not result in a doubling of traffic along roadways leading to the Project site.

Similarly, there would be a peak of approximately 97 personal/work vehicles traveling each day to and from the Project site for one month (from September 15-October 14) of each year of sediment removal activities. In order for an increase in noise levels to be audible, an increase of 3 dBA above existing noise levels is required. Because the addition of 97 daily vehicle trips would not double the traffic along Big Tujunga Road, the temporary traffic noise increases would not be audible and would not require mitigation. Temporary noise impacts would be less than significant, and no mitigation is required.

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.

Overall, the impact would be less than significant, and no mitigation is required. Additionally, because the proposed Project is a public health and safety activity, the Project activities would be exempt from the requirements of the Noise Ordinance.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

No Impact. Vibration affects structures located relatively close to the source of the vibration. Vibration is not perceptible beyond 72 velocity decibels (VdB). For heavy construction equipment operations, vibration would not be perceptible at distances of 200 feet and greater where VdB would be less than 72 VdB (FTA 2006). There would be no sensitive receptors within 200 feet of the proposed Project activities. There would be no impact, and no mitigation is required.

c) For a project located within the vicinity of a private airstrip or 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?

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

4.13.3 MITIGATION MEASURES

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

4.14 POPULATION AND HOUSING	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned 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 people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.1 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 onsite resident Dam Operator is important to ensure the presence of trained staff in the event of an emergency. The Dam Operator is a LACFCD employee who would participate in the proposed sediment removal activities as a primary function of employment, and therefore would not be in residence during the workdays. All other staff would travel to BTR and Maple Canyon SPS to perform maintenance activities and would leave when the work is completed.

4.14.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project induce substantial unplanned 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)?

No Impact. The proposed Project activities do not involve construction of new homes and businesses, nor extension of roads or other infrastructure such that would induce unplanned population growth in the area. The hydroblasting to clear cement slurry, and sluicegate repair are Project components to maintain the functionality of the dam. The paving of 2.15 miles of haul road would not be for public use. As discussed above, BTR and Maple Canyon SPS do not contain residential or commercial employment opportunities. Upon completion of sediment placement activities at the Maple Canyon SPS, the site would be revegetated, gated, and closed to public use. The proposed 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 unplanned population growth. Therefore, there would be no change in land uses that could induce unplanned population growth in the area. There would be no impact.

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

No Impact. The proposed Project would not displace existing population and housing or necessitate the construction of replacement housing elsewhere. The proposed Project would bring in LACFCD staff, contractors, and introduce workers and other authorized personnel at BTR and Maple Canyon SPS for the duration of the Project (i.e., during the daytime hours between April 16 and October 14, except for Sundays and holidays, for approximately five years). The proposed Project would require workers for site equipment, dump truck drivers, and additional workers. During peak construction activity, there could be approximately 97 workers onsite. However, these 97 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. Thus, no indirect change in the population or housing of the County or in the immediately surrounding area is expected with the presence of construction crews on site. There would be no impact related to displacement of people or housing.

Additionally, the proposed Project would not induce indirect population growth because the Project does not involve extension of roads or other infrastructure such that would induce unplanned population growth in the area. The Project would not eliminate the existing Dam Operator's house; it would not displace the residents/household of this house such that construction of replacement housing would be required. There would be no impacts related to displacement of existing housing or population, and no mitigation is required.

4.14.3 MITIGATION MEASURES

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

4.15 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?	☐	☐	☐	☒

4.15.1 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.

4.15.2 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 proposed 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 4.9, 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.

Additionally, as discussed in Section 4.9, Hazards and Hazardous Materials, MM HAZ-4 requires that the contractor to 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 proposed 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.

Schools, Parks, and Other Public Facilities

No Impact. The proposed 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.

4.15.3 MITIGATION MEASURES

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

4.16 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?	☐	☐	☐	☒

4.16.1 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 limited by the appropriate jurisdiction. 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 2005b).

4.16.2 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?

Less than Significant Impact. As discussed above in Section 4.14, Population and Housing, proposed Project 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. Project activities would be confined to BTR and Maple Canyon SPS and would not affect nearby Forest trails, recreational areas, or downstream parks. 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) bypass line would be constructed to allow natural flows from the upstream Big Tujunga Creek to bypass the construction activities.

As discussed under Threshold 4.10[b] and in the Flow Data Memorandum (Appendix B-9), historic average inflow into the BTR 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 would be less than significant and no mitigation is required.

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?

No Impact. 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. There would be no impact.

Mitigation Measures

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

4.17 TRANSPORTATION	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☒	☐	☐

4.17.1 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 on two dates in 2017 show an average of 170 vehicles during the peak hour and an average of 1,170 vehicles passed within 24 hours on Big Tujunga Canyon Road west of Angeles Forest Highway in the Project area (LACDPW 2017).

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). 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.

4.17.2 IMPACT ANALYSIS

Regulatory Requirements

RR TRA-1 The movement of large vehicles or loads, such as large equipment, on public roadways must be conducted in compliance with the Los Angeles County Code (Title 16, Highway), which requires a moving permit (Chapter 16.22, Moving Permits) and includes provisions regarding the size (i.e., height, width, weight) of vehicles/loads (in accordance with provisions of the California Vehicle Code); number of trips; seasonal/time limitations; and other conditions when necessary to assure against undue interference with traffic or road damage. The Los Angeles County Flood Control District (LACFCD) requires the implementation of temporary traffic control measures in accordance with the *Standard Specifications for Public Works Construction* (Greenbook), which contains standards for traffic and access (i.e., maintenance of access, traffic control, and notification of emergency personnel).

RR TRA-2 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 a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less than Significant Impact with Mitigation. 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 vehicles or loads, such as large equipment, on public roadways must be conducted in compliance with the Los Angeles County Code (Title 16, Highway), which requires a moving permit (Chapter 16.22, Moving Permits) and includes provisions regarding the size (i.e., height, width, weight) of vehicles/loads (in accordance with provisions of the California Vehicle Code); number of trips; seasonal/time limitations; and other conditions when necessary to assure against undue interference with traffic or road damage. The proposed Project will also require implementation of temporary traffic control measures in accordance with the *Standard Specifications for Public Works Construction* (Greenbook), which contains standards for traffic and access (i.e., maintenance of access, traffic control, and notification of emergency personnel). Per RR TRA-2, 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.

Further, there would be no impact to the use of mass transit systems, non-motorized travel, or pedestrian and bicycle paths with Project implementation, as 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 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. The increase in truck traffic on Big Tujunga Canyon Road would have less than significant impacts on alternative transportation systems and no mitigation is required.

Double-bottom belly dump trucks or off-highway trucks with 18 cubic yards of capacity would be mobilized to the Project site at the beginning of the non-storm season for sediment and aggregate removal activities. A peak of approximately 97 worker roundtrips would occur for one month yearly during sediment removal activities (from September 15 through October 14) during the morning and afternoon. The trips 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. This is considered a potentially significant impact.

In order to reduce the potential impacts to Big Tujunga Canyon Road due to increased truck traffic crossing the street to and from Maple Canyon SPS, MM TRA-1 requires the preparation of a Traffic 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 and would prohibit truck traffic queuing along Big Tujunga Canyon Road. Additionally, temporary construction signage would be installed along Big Tujunga Canyon Road on northerly and southerly approaches to the access road to alert traffic of construction traffic ahead. The Plan would require mandatory participation by the Contractor's construction crew in traffic safety meetings to ensure that the Plan is fully implemented and periodically monitored for compliance. With the implementation of MM TRA-1, Project-related traffic impacts to Big Tujunga Canyon Road would be less than significant after mitigation.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant Impact. Section 15064.3(b)(1) of the State CEQA Guidelines refers to evaluating transportation impacts using vehicle miles traveled (VMT) for land use projects. It should be noted that the proposed Project is not a land use project; it is rather a short-term, construction-based activity and would not generate any long-term change in traffic conditions.

The CEQA Guidelines Section 15064.3(b) states that, for many projects, a qualitative analysis of construction traffic may be appropriate. The VMT generated by the Project would occur on a short-term basis during sediment-removal activities between the dam and Maple Canyon SPS, and for worker trips throughout the duration of the Project. VMT refers to the amount and distance of automobile travel attributable to a project. The term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Agencies are not required to include heavy-duty freight vehicles in their CEQA analyses under SB 743. Furthermore, it needs to be recognized that the VMT analysis of on-road passenger vehicles and light trucks is not required if total trips do not exceed 110 daily trips. If trips exceed the threshold of 110 trips per day, only then a quantitative VMT analysis would be required. As identified in Section 3.1.4, *Sediment Removal from BTR*, during the peak construction period (September 15 to October 14 yearly, during sediment removal activities), there would be approximately 97 personal/work vehicles (on-road, passenger vehicles) traveling each day to and from the Project site, which is below the threshold of 110 daily trips. Therefore, preparation of a VMT analysis is not required.

As such, the Project would not conflict or be inconsistent with Section 15064.3(b) of the State CEQA Guidelines. There would be a less than significant impact, and no mitigation is required.

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

No Impact. Trucks and heavy equipment would operate within the confines of the BTR and the Maple Canyon SPS for the excavation and deposition of sediment and aggregate. These activities are regularly performed by the LACFCD in various dams and debris basins throughout the County and would not result in hazards due to a geometric design feature or incompatible uses that would result in impacts. There would be no impact, and no mitigation is required.

d) Would the project result in inadequate emergency access?

Less than Significant Impact with Mitigation. Trucks and heavy equipment would operate within the confines of the BTR and the Maple Canyon SPS for the excavation and deposition of sediment and aggregate. 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, except for a 0.4 mile portion within the BTR, would be paved and maintained as a part of Project implementation, per MM AQ-3.

However, truck traffic during sediment removal activities would cross Big Tujunga Canyon Road as many as 800 times per day, which could create a hazard for cross-traffic along Big Tujunga Canyon Road, resulting in a significant impact. MM TRA-1 would reduce the potentially significant impact pertaining to increased traffic hazards and 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 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. This mitigation measure 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 that could create a hazard for cross-traffic resulting in a significant impact. MM TRA-1 would reduce the potential obstruction to traffic; promote traffic safety; and maintain emergency access within the Angeles National Forest. With mitigation, impacts would be reduced to levels considered less than significant.

4.17.3 MITIGATION MEASURES

MM TRA-1 Prior to commencement of any sediment removal activities in the first year of Project implementation, the LACFCD shall prepare a Traffic Control Plan, in compliance with the *California Manual for Uniform Traffic Control Devices* (MUTCD), and its California supplements, 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; (2) truck traffic shall be managed such that no queuing shall occur on Big Tujunga Canyon Road; (3) the construction crew shall be required to attend traffic safety meetings to ensure that the Plan is fully implemented; (4) 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 (5) the coordination protocol shall be confirmed with law enforcement and other emergency agencies, as necessary.

4.18 TRIBAL CULTURAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Does the project:				
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

4.18.1 EXISTING CONDITIONS

As presented in Section 4.4, Cultural Resources, of this Revised and Recirculated IS/MND, 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 to the letters have been received to date from the tribes and individuals contacted. However, 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. Based on the follow-up telephone calls, no tribal cultural resources (e.g., sacred lands, cemeteries, villages) were identified by the tribes to be onsite; however, three of the seven tribal representatives that were contacted did identify the Project site as potentially sensitive for previously unknown tribal cultural resources important to Native Americans. Each of the three tribal representatives recommended a Native American monitor to be on-call or onsite to monitor for tribal cultural resources. Table 4-14 in Section 4.4, Cultural Resources, summarizes the results of consultation, and all Native American correspondence can be viewed in Appendix C.

4.18.2 IMPACT ANALYSIS

Regulatory Requirements

RR CUL-1 from Section 4.5, Cultural Resources, related to unanticipated encounter of human remains is applicable to tribal cultural resources.

Impact Discussion

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

Less Than Significant with Mitigation. As discussed under Section 4.5, Cultural Resources identified in Table 4-13, there are four known historic-era cultural resources within the Project site; however, the Project would not result in significant impacts to any known or eligible historical resources, and no mitigation is required. No prehistoric cultural resources, including resources that may be considered by Native Americans to be tribal cultural resources (e.g., sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe) were identified from the SCCIC records search. Therefore, there are no known tribal cultural resources listed or eligible for listing in the California Register of Historical Places or in a local register, as these would have been documented as part of the Cultural Resources Investigation for the Project. However, the absence of known cultural resources in the Project area does not preclude the possible presence of undiscovered cultural resources that may lie in the subsurface. Discovery of such resources may result in potentially significant impacts; however, the exposure of historic and archaeological resources during ground-disturbing activities is addressed by MM CUL-1. Compliance with MM CUL-1 would ensure that potential impacts to undiscovered tribal cultural resources that may lie in the subsurface would be less than significant.

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact. The proposed Project is not subject to the requirements of AB 52, which is applicable only to a project that has a Notice of Preparation, a Negative Declaration, or Mitigated Negative Declaration filed on or after July 1, 2015. As discussed in Section 2.1.2 of this Revised and Recirculated IS/MND, the LACFCD prepared an IS/MND (2013 Draft IS/MND) for the Project (i.e., Big Tujunga Reservoir Sediment Removal Project), which was circulated for public review from May 13, 2013, to June 26, 2013, pursuant to CEQA Guidelines Section 15073, for a 45-day public review period. As such, there is no requirement to apply the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, and no mitigation is required. However, as presented above in Section 4.4, Cultural Resources, the Native American Heritage Commission's (NAHC's) 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 seven 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. As a result of the tribal outreach and coordination, no tribal cultural resources (e.g. sacred lands, cemeteries, villages) were identified by the tribes to be onsite; however, three of the seven tribal representatives contacted did identify the Project site as potentially sensitive for previously unknown tribal cultural resources important to Native Americans, which would be a potentially significant impact. Each of the three tribal representatives recommended a Native American monitor to be on-call or onsite to monitor for tribal cultural resources. Compliance with MM CUL-1 would ensure that potential impacts to undiscovered tribal cultural resources that may lie in the subsurface would be less than significant.

4.18.3 MITIGATION MEASURES

MM CUL-1 would apply. Compliance with MM CUL-1, which describes procedures for monitoring and protocols to be followed in the event that cultural resources are discovered during grading would reduce potential impacts to historic and archaeological as well as tribal cultural resources, identified above, to less than significant levels.

4.19 UTILITIES AND SERVICE SYSTEMS	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years ?	☐	☐	☐	☒
c) 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?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals ?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

4.19.1 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.

4.19.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed Project would require water for the control of fugitive dust on access roads and at Maple Canyon SPS and for hydroblasting of the cement slurry. 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. Water trucks would be present at BTR and Maple Canyon SPS to spray areas generating dust. Water for these trucks would be pumped from temporary water storage tanks that would be filled with water imported throughout the Project. The proposed Project would not need to construct new water or wastewater treatment facilities or expand existing facilities.

The proposed Project would not result in impervious surfaces, except to pave approximately 2 miles of existing dirt access roads. 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 negligible increase in runoff volume because access roads are already graded and compacted and are not a source of infiltration, and water runoff would continue to 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. 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 required. Although, as part of the sediment-placement activities at Maple Canyon SPS, the existing storm drain would be extended to meet the new and higher sediment elevations, extension of the storm drain to accommodate the new elevations does not constitute expansion of the existing facilities such that construction of which would result in a significant impact.

Similarly, due to the nature of the Project, use of dry utilities (i.e., electric power, natural gas, or telecommunication) would not be such that would result in relocation or construction of new or expanded facilities. It is anticipated that natural gas would not be used in any on-site activities; however, the Project may require temporary extension of electrical power lines from the dam control house to the pumps to be used for dewatering activities. Nevertheless, no electric facilities would be constructed as part of the Project that would result in significant impacts. Thus, no mitigation is required. Additionally, no telecommunication facilities are anticipated to occur that would result in significant impact. No mitigation is required.

There would be no impacts related to relocation or construction of new or expanded water, wastewater, storm water drainage, electric power, natural gas, or telecommunication facilities, and no mitigation is required.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact. As stated in response to Threshold 4.19[a] above, the Project would require water for the control of fugitive dust on access roads and at Maple Canyon SPS. Water storage tanks would be placed onsite and filled by water trucks transporting water from an LADWP water source (MM HYD-1). Use of water for the proposed Project (i.e., suppression of fugitive dust) and reasonably foreseeable future development during normal, dry, and multiple dry year is such that it would not result in impacts pertaining to water supplies. No impacts would occur, and no mitigation is required.

c) 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?

No 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 offsite by an outside company. An insignificant amount of wastewater would be generated by these portable toilets and would not exceed the treatment requirements of the RWQCB. Thus, the Project would not need new or expanded treatment facilities. Capacity at existing wastewater treatment plants would not be exceeded and no mitigation would be required.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less than Significant Impact. While some portion of the debris from vegetation clearing activities at Maple Canyon SPS would be mulched onsite, the remaining would be exported off-site. Sediments removed from BTR would be deposited in Maple Canyon SPS, which would later be vegetated in accordance with the USFS' *Draft Maple Canyon Sediment Placement Site Revegetation Plan* (MM LUP-1). In the first year of the Project, large rocks from BTR would be crushed at the staging area in BTR and stockpiled at the staging area west of Maple Canyon for up to 28,000 cy of aggregate during sediment removal activities. The remaining aggregate material and all finer sediment would be placed in the Maple Canyon SPS. 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 or revegetation activities. Hazardous materials would be handled in accordance with RR HAZ-1 and MM HAZ-1 through MM HAZ-4, as discussed in Section 4.9, 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 and infrastructure capacity nor would be in excess of State or local standards or the capacity of local infrastructure. Additionally, the Project would not impair the attainment of any solid waste reduction goals. Impacts related to exceedance of State or local standards, local infrastructure capacity, or attainment of solid waste reduction goals would be less than significant.

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

Less than Significant Impact. As stated in response to Threshold 4.19[d] above, the Project would not generate solid wastes that are subject to federal, State, and local management and reduction statutes and regulations. Impacts related to solid waste regulations would be less than significant.

4.19.3 MITIGATION MEASURES

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

4.20 WILDFIRE	**Potentially Significant Impact**	**Less than Significant with Mitigation**	**Less than Significant Impact**	**No Impact**
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☒	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

4.20.1 EXISTING CONDITIONS

Portions of the access roads between the BTR and Maple Canyon SPS are located within a state responsibility area classified as a very high fire hazard severity zone (VHFHSZ). The rest of the Project site, including BTR and Maple Canyon SPS, are located within a federal responsibility area, and are also designated as VHFHSZ.

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 Los Angeles County Fire Department (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).

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 on two dates in 2017 show an average of 170 vehicles during the peak hour and an average of 1,170 vehicles passed within 24 hours on Big Tujunga Canyon Road west of Angeles Forest Highway in the Project area (Public Works 2017).

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). 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.

4.20.2 IMPACT ANALYSIS

Regulatory Requirements

None required.

Impact Discussion

a) If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact with Mitigation. As indicated above, portions of the access roads between the BTR and Maple Canyon SPS are located within a state responsibility area classified as a very high fire hazard severity zone (VHFHSZ). The rest of the Project site, including BTR and Maple Canyon SPS, are located within a federal responsibility area, and are also designated as VHFHSZ. BTR and Maple Canyon SPS (i.e., a sediment placement site) do not contain any emergency facilities, nor do they serve as emergency evacuation routes. Goals and objectives for fire prevention, fire suppression, and emergency evacuation are included in the USFS Land Management Plan (Forest Plan), and fire management strategies/programs have been developed by the USFS for fire prevention and suppression. 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. As detailed in Section 4.9, Hazards and Hazardous Materials, MM HAZ-4 requires compliance with Article 87 of the *California Fire Code* and National Fire Protection Association Standard No. 1. The contractor 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 prepared to the satisfaction of LACFCD and provided to the USFS for review and approval prior to commencement of any Project activities.

Additionally, as discussed in Section 4.9, dump trucks would cross Big Tujunga Canyon Road at the Project's access 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 in case of a fire, resulting in a significant impact. However, implementation of MM TRA-1 would reduce the potentially significant impact to less than significant. Cross traffic at Big Tujunga Canyon Road would be controlled in accordance with MM TRA-1, which requires a Traffic Control Plan be prepared, in compliance with the California Department of Transportation's (Caltrans') *Manual on Uniform Traffic Control Devices* (MUTCD), as discussed in Section 4.17, Transportation. The Plan will require a flag person(s) at the intersection of the Project access road and Big Tujunga Canyon Road during all trucking operations; truck traffic management such that no queuing would occur on Big Tujunga Canyon Road; mandatory participation by the construction crew in traffic safety meetings; design and use of traffic signs, driveway access, barricades, and other measures; and coordination protocol with law enforcement and other emergency agencies, as necessary. Compliance with MM TRA-1 would ensure that impacts to emergency response and evacuation would be less than significant.

b) If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant with Mitigation. The Project is an existing use and would not result in a substantive change in slope, prevailing wind, or other factors that may exacerbate wildfire risk. The proposed Project activities would not involve construction or operation of habitable structures or promote development in a VHFHSZ. Thus, the Project would not permanently expose people to the potential for wildfires within BTR and Maple Canyon SPS. There are no residential land uses in the vicinity of BTR, except for the Dam Operator's home 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 Project may require temporary extension of electrical power lines from the dam control house to the pumps to be used for dewatering, that could result in fire hazards. However, compliance with the Uniform Fire Code (RR HAZ-2) for power line extensions would prevent fire hazards associated with electrical lines. This impact would be less than significant, and no mitigation is required.

As discussed above, the proposed Project does not involve the development of any new permanent structures or operational activities that could exacerbate wildfire risks. Temporary Project-related activities would create a wildfire risk due to the use of equipment, electricity, fuels, and other fire sources that may ignite flammable and combustible materials. As discussed under Section 4.9, 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. Per MM HAZ-1, construction equipment and trucks entering BTR or Maple Canyon SPS will be inspected to be free from oil, gasoline, or other vehicle fluid leaks, which would prevent accidental construction equipment combustion. Additionally, in order to reduce wildfire risks and to protect workers during Project activities, MM HAZ-4 requires compliance with Article 87 of the *California Fire Code* and National Fire Protection Association Standard No. 1. The contractor will 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 prepared to the satisfaction of the LACFCD and provided to the USFS for review and approval prior to commencement of any Project activities. Implementation of MM HAZ-1 and MM HAZ-4 would ensure that impacts would be less than significant.

c) If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risks or that may result in temporary or ongoing impacts to the environment?

Less than Significant with Mitigation. As indicated above, portions of the access roads between the BTR and Maple Canyon SPS are located within a state responsibility area classified as a very high fire hazard severity zone (VHFHSZ). The rest of the Project site, including BTR and Maple Canyon SPS, are located within a federal responsibility area, and are also designated as VHFHSZ. As part of the Project, access roads behind the dam on either side of the reservoir would be rehabilitated to restore access to the dewatered reservoir bottom. The Project would

also involve access road paving and repairing of the culvert crossing. Additionally, as part of the sediment placement activities at Maple Canyon SPS, access roads would be extended into the SPS. These activities have the potential to exacerbate fire risks, resulting in significant impacts. However, a Fire Protection Plan would be prepared in compliance with MM HAZ-4, which will include plans for reducing fire risk and injury, including during maintenance of emergency access roads, as part of the Project. Thus, fire risks from installation and maintenance of roads would be reduced to less than significant with implementation of MM HAZ-4.

The Project would not install or maintain fuel breaks as part of the Project. However, the Forest Plan for the Angeles National Forest contains goals and objectives for fire prevention, fire suppression, and emergency evacuation. Additionally, the USFS has developed strategies/programs, as part of the Forest Plan, to prevent and suppress wildfires. 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. Fire Management includes all activities involved with pre-fire preparation, fire hazard reduction (such as brush removal) and public education concerning fire prevention and safety (USFS 2005). Therefore, this impact would be less than significant, and no mitigation is required.

No installation or maintenance of emergency water sources would be included as part of the Project. The increased capacity of BTR as a result of sediment removal activities would increase the amount of emergency water that would be available to fight forest fires. Therefore, there would be no exacerbation of fire risk from installation or maintenance of emergency water sources.

The Project may require temporary extension of electrical power lines from the dam control house to the pumps to be used for dewatering, that could result in fire hazards. However, compliance with the Uniform Fire Code (RR HAZ-2) for power line extensions would prevent fire hazards associated with electrical lines. This impact would be less than significant, and no mitigation is required.

d) If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less than Significant Impact. As described in Section 2.3.2, Project Background, 87 percent of the watershed tributary to the Big Tujunga Dam was affected by the 2009 Station Fire. The Project's purpose would be to remove accumulated sediment, which was increased due to the extended drought following the 2009 Station Fire. Due to the extended drought, significant volumes of debris remain at the bottom of tributary canyons upstream of the reservoir. The drought has also delayed the watershed's recovery, leaving the potential for increased sediment runoff. 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). Therefore, by removing built-up sediment in the BTR, the proposed Project would reduce risk from runoff, landslides, downslope and downstream flooding, or drainage changes. The Project increase the capacity of the BTR, which would maintain full functionality as a dam, and would also provide capacity for increased sediment accumulation in the event of a future wildfire within the watershed tributary to BTR. Therefore, there would be a less than significant impact, and no mitigation is required

4.20.3 MITIGATION MEASURES

MM HAZ-1, MM HAZ-4, and MM TRA-1 would also apply. Compliance with MM HAZ-1 would reduce the uncontrolled spread of wildlife and exposure of people or structures to significant risks. MM HAZ-4 would reduce impacts to adopted emergency evacuation plans; uncontrolled spread of wildfire; installation or maintenance of associated infrastructure; and exposure of people or structures to significant risk. MM TRA-1 would reduce impacts to adopted emergency evacuation plans.

4.21 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 substantially 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, substantially 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?	☐	☒	☐	☐

4.21.1 MANDATORY FINDINGS OF SIGNIFICANCE ANALYSIS

a) Does the project have the potential to substantially 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, substantially 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 4.20, 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.

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 with Mitigation. The proposed Project is located in Big Tujunga Canyon within the Angeles National Forest in a remote area surrounded by forest land on three sides, with the closest community (i.e., La Crescenta-Montrose) being approximately 4 miles to

the south. There are no existing or anticipated projects in the County or adjacent jurisdictions within an approximate 4-mile radius of the Project site (i.e., distance between the Project site and nearest residential community in La Crescenta-Montrose), with the exception of the proposed Spillway Improvement Project and the Rockfall Mitigation Plan Project. As no proposed development application other than, the Spillway Improvement Project and the Rockfall Mitigation Project has been submitted to the County and none has been identified in adjacent jurisdictions, it would be speculative to assume a number of foreseeable projects in the discussion of cumulative impacts. Therefore, the cumulative impact analysis only includes the Spillway Improvement Project and the Rockfall Mitigation Plan Project as related cumulative projects.

The Spillway Improvement Project is proposed to increase the storage capacity behind BTR while maintaining the spillway's current capacity to pass 52,400 cfs of storm water flow. The spillway project would raise the height of the crest of the Dam's northern spillway by 8 feet to an elevation of 2,298 feet, which would increase the reservoir pool area from 86.0 acres to about 93.5 acres, increasing the storage capacity by an additional 719 af. It is anticipated that the additional capacity would be utilized only about once every ten years (during ten-year storm events) and would inundate the additional area for approximately two to four weeks. Between ten-year storm events, the BTR footprint would not increase and the spillway modifications would not change daily operation of the dam. The temporary disturbance footprint to build the Spillway Improvement Project would be within the existing developed footprint of the dam. The physical extent of the impact footprint and the duration of construction for the Spillway Improvement Project would be less than the restoration project, and dewatering methods would be similar.

The Rockfall Mitigation Project is proposed in response to a rockfall event on January 7, 2016. Due to a substantial storm, a significant rockfall event occurred on the north-facing rock face above the BTR's southern access road. The rockfall was caused by a wedge failure within the bedrock shear and deposited bedrock blocks on the road and into the reservoir. Based on investigation by Public Works Geotechnical and Materials Engineering Division and a group of outside consultants, it was determined that due to the highly fractured rock slope above the access road, additional rockslides may occur. The Rockfall Mitigation Project proposes to install rockfall mitigation systems, comprised of a rockfall drapery system, rockfall attenuator system, and a rockfall catchment v-ditch, on the cliff face where the rockfall occurred to minimize the rockfall hazard to people and equipment along the southern access road. The Project is tentatively planned to be installed in September/October 2021 and would be completed in a single phase, requiring approximately three months. Therefore, construction periods of the two projects do not overlap. No separate analysis under topicsl issues (below) is warranted for the Rockfall Mitigation Project.

Because the Project would result in only construction-related impacts, a cumulatively considerable impact could result only if construction of a related project occurred at the same time as the Project. Therefore, this assessment of cumulative impacts is focused on construction activities, as long-term operations of the Project would remain the same as the existing condition. As such, there is no potential contribution to long-term cumulative impacts. The proposed Project requires mitigation to reduce identified impacts related to aesthetics (MM AES-1), local air quality (MM AQ-1 through MM AQ-4), biological resources (MM BIO-1 through BIO-10), cultural and tribal cultural resources (MM CUL-1), geology and soils (MM GEO-1), hazards (MM HAZ-1 through MM HAZ-4), hydrology and water quality (MM HYD-1), land use and planning (MM LUP-1), transportation (MM TRA-1), and wildfire (MM HAZ-1, MM HAZ-4, and MM TRA-1).

It should be noted that, as demonstrated in the analyses in Sections 4.1 through 4.20 of this Revised and Recirculated IS/MND, the Project would not result in impacts related to Agriculture and Forest Resources, Energy, GHG Emissions, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, and Utilities and Service Systems; therefore, implementation of the

Project would have no contribution to a cumulative impact related to these topics. Therefore, these topics are not further addressed, below.

The potential for cumulatively considerable impacts when considering the Project and the Spillway Improvement Project is presented below for all environmental topics with identified impacts that would be less than significant or less than significant with mitigation, with the exception of topics focused out from further assessment, as indicated above.

Aesthetics. The Spillway Improvement Project would be located within the developed footprint of the dam. Both projects are within the same viewshed (i.e., the Project site and related project can be viewed at the same time); however, construction activities of the two projects may or may not occur at the same time. As identified in Section 4.1, Aesthetics, the BTR Project would not have a substantial adverse effect on a scenic vista, and the potential impacts would not alter the viewshed or topography. Additionally, due to intervening trees and mountainsides, the Project would not be visible from SR-2, which is the nearest designated State scenic highway. In terms of degrading the existing visual character or quality of the site in non-urbanized areas, MM AES-1 (stockpiles within the site) is proposed to address the potential impact. In light of adjacency of the two projects and being within the same viewshed, the same conclusions would apply. Lastly, construction activities of either project would not occur during the nighttime, resulting in new sources of light. Thus, in light of the above and given the temporary nature of the construction activities, no cumulative aesthetics impacts would occur, and no mitigation is required.

Air Quality. The assessment of cumulatively considerable emissions for air quality pollutants for which the region is in non-attainment is addressed under Threshold 4.3[b]. As discussed, construction of the Project would result in a less than significant cumulative impact with mitigation for all criteria pollutants for which the SoCAB is in non-attainment. The Spillway Improvement Project would also be required to reduce emissions for all criteria pollutants to less than the SCAQMD's thresholds. Therefore, no cumulative air quality impacts would occur, and no new mitigation is required.

Biological Resources. As indicated above, it is anticipated that the additional capacity as a result of the Spillway Improvement Project would be utilized only about once every ten years (during ten-year storm events) and would inundate the additional area for approximately two to four weeks. Between ten-year storm events, the BTR footprint would not increase and the spillway modifications would not change daily operation of the dam. The temporary disturbance footprint to build the Spillway Improvement Project would be within the existing developed footprint of the dam. The physical extent of the impact footprint and the duration of construction for the Spillway Improvement Project would be less than the Project. As the temporary disturbance footprint of the Spillway Improvement Project would not extend beyond the developed footprint of the dam, and the extent of physical impact would be less than the Project, the analysis contained in Section 4.4, Biological Resources, would cover and be applicable to the potential cumulative impacts, and no new impacts would occur that have not been analyzed in Section 4.4. MM BIO-1 through BIO-10 would apply to the Project's potential contribution to cumulative impacts. Thus, less than significant cumulative biological resources impacts would occur, and no new mitigation is required.

Cultural Resources. The geographic area for consideration of cumulative impacts to cultural resources includes the Project area, as the Spillway Improvement Project is adjacent to and within the Project area. As discussed in Section 4.5, Cultural Resources, there are four known cultural resources within the Area of Potential Effect (APE) of the Project site. The encounter of human remains during excavation activities is addressed by adherence to *California Public Resources Code* Section 5097.98 (RR CUL-1). The proposed Project also involves sediment placement and subsequent revegetation at Maple Canyon SPS. Therefore, there is a possibility that

archaeological materials could be uncovered during necessary soil disturbance activities. Although the likelihood of encountering 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. Because there are regulatory and mitigation measures to appropriately handle any unanticipated cultural resources, similar measures would be required of the Spillway Improvement Project pursuant to the CEQA process. Thus, less than significant cumulative cultural resources impacts would occur, and no new mitigation is required.

Geology and Soils. Impacts to geology and soils are typically limited to the site on which that impact occurs. The geographic area for consideration of cumulative impacts to geology and soils is the Project site, as the Spillway Improvement Project is also located within the Project area and the extent of disturbance would not exceed beyond the Project footprint. While the construction activities of the two projects may or may not occur at the same time, each project would be required to address its own impacts and comply with regulations and mitigations that would avoid or mitigate potential impacts. MM GEO-1 would apply to Project's potential contribution to cumulative impacts. Therefore, less than significant cumulative geology and soils impacts would occur, and no new mitigation is required.

Hazards/Hazardous Materials. Impacts related to hazards and hazardous materials are typically limited to the site on which that impact occurs. While construction activities of these two projects may or may not occur at the same time, each project would be required to address its own impacts and comply with regulations and mitigation that would avoid or mitigate potential impacts. Additionally, based on searches conducted in Section 4.9, Hazards and Hazardous Materials, no facilities posing hazards related to hazardous materials exist at or near BTR and Maple Canyon SPS (Envirofacts Database and EnviroStor). Given the adjacency of the two projects, the same conclusion would apply to the Spillway Improvement Project. Furthermore, RR HAZ-1 and RR HAZ-2 as well as MM HAZ-1 through MM HAZ-4 would apply to Project's potential contribution to cumulative impacts. Therefore, less than significant cumulative hazards and hazardous impacts would occur, and no new mitigation is required.

Hydrology and Water Quality. The geographic area for consideration of cumulative impacts to hydrology and water quality includes the Project area, as the Spillway Improvement Project is adjacent and within the Project area. As discussed in Section 4.10, Hydrology and Water Quality, sediment removal activities/construction of the Project would result in less than significant impacts related to drainage patterns, rate and amount of surface runoff, contribution to polluted runoff, and conflict with implementation of a water quality control plan or sustainable groundwater management plan. The Project would potentially violate water quality standards and impact surface or ground water quality and decrease groundwater supplies and interfere with groundwater recharge. However, compliance with MM HAZ-1 and MM BIO-4 would reduce impact to less than significant. As the temporary disturbance footprint of the Spillway Improvement Project would not extend beyond the developed footprint of the dam, and the extent of physical impact would be less than the Project, the analysis contained in Section 4.10, Hydrology and Water Quality, would cover and be applicable to the cumulative impacts, and no new impacts would occur that has not been analyzed in Section 4.10. MM HAZ-1 and MM BIO-4, in addition to regulatory requirements, would apply to Project's potential contribution to cumulative impacts. Thus, less than significant cumulative hydrology and water quality impacts would occur, and no new mitigation is required.

Land Use and Planning. The geographic area for consideration of cumulative impacts to land use and planning includes the Project area, as the Spillway Improvement Project is adjacent and within the Project area. As discussed in Section 4.11, Land Use and Planning, the Project would not involve the displacement of existing land uses and would therefore not physically divide an

established community. As such, the Project would not contribute to cumulative impacts related to physically dividing an established community, and no new mitigation is required. Regarding conflict with a land use plan, policy, or regulation adopted for avoiding an environmental effect, the Project would be required to implement MM LUP-1 for issuance of a SUP for the continued operation of Maple Canyon SPS. The Spillway Improvement Project would also be required to comply with existing land use plans, policies, or regulations adopte for avoiding an environmental effect. Additionally, MM LUP-1 would apply to the Project's potential contribution to cumulative impacts. Thus, less than significant cumulative land use and planning impacts would occur, and no new mitigation is required.

Transportation. The geographic area for consideration of cumulative impacts to transportation includes the Project area, as the Spillway Improvement Project is adjacent and within the general Project area as well as the route for construction traffic. While it is noted that construction of the two projects may overlap, the construction details and increase in truck trips for the Spillway Improvement Project is not known as this time. However, it is assumed that, similar to the Project, there may be an increase in truck trips and worker trips potentially on Big Tujunga Canyon Road from the Project, which may result in impacts. Similar to the Project, the potential impacts related to increased truck trips would be reduced through compliance with regulatory requirements (RR TRA-1 and RR TRA-2) and implementation of mitigation measures (MM TRA-1). Therefore, the Project's contribution to cumulative impacts would be less than significant with regulatory requirements and mitigation measures.

Tribal Cultural Resources. The geographic area for consideration of cumulative impacts to tribal cultural resources includes the Project area, as the Spillway Improvement Project is adjacent to and within the general Project area. As discussed in Section 4.18, Tribal Cultural Resources, there are four known historic resources within 1 mile of the Project site, and the proposed Project would not result in significant impacts to any known or eligible historical resources, and no mitigation is required. Given the adjacency of the two projects, the same findings would also be applicable to the related project. The exposure of undiscovered historic and archaeological resources during ground-disturbing activities is addressed by MM CUL-1. The proposed Project is not subject to the requirements of AB 52, which is applicable only to a project that has a NOP or a notice of ND or MND filed on or after July 1, 2015. Because there are regulatory measures to appropriately handle any unanticipated cultural resources as well as consult with affected tribes regarding potential tribal resources, and it is reasonable to assume that measures would also be required for the Spillway Improvement Project; less than cumulative tribal cultural resources would occur.

Wildfire. The geographic area for consideration of cumulative impacts to wildfire includes the Project area, as the Spillway Improvement Project is adjacent to and within the general Project area. As discussed in Section 4.20, Wildfire, truck traffic crossing Big Tujunga Canyon Road has the potential to pose a hazard for emergency response vehicles and/or evacuation; however, preparation of a Traffic Control Plan (MM TRA-1) would address the impact. The Project may require temporary extension of electrical power lines from the dam control house to the pumps to be used for dewatering, that could result in fire hazards. However, compliance with the Uniform Fire Code for power line extensions would prevent fire hazards associated with electrical lines. 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. Implementation of MM HAZ-1 and MM HAZ-4 would ensure that impacts would be less than significant. Additionally, as part of the Project, access roads behind the dam on either side of the reservoir would be rehabilitated to restore access to the dewatered reservoir bottom. As required by MM HAZ-4, the Fire Protection Plan would include plans for reducing fire risk and injury, including during maintenance of emergency access roads, as part of the Project. The Project would not install or

maintain fuel breaks as part of the Project. However, the Forest Plan for the Angeles National Forest contains goals and objectives for fire prevention, fire suppression, and emergency evacuation. Additionally, the USFS has developed strategies/programs, as part of the Forest Plan, to prevent and suppress wildfires. The Project may require temporary extension of electrical power lines from the dam control house to the pumps to be used for dewatering, that could result in fire hazards. However, compliance with the Uniform Fire Code (RR HAZ-2) for power line extensions would prevent fire hazards associated with electrical lines. As the temporary disturbance footprint of the Spillway Improvement Project would not extend beyond the developed footprint of the dam, and the extent of physical impact would be less than the Project, the analysis contained in Section 4.20 , Wildfire, would be applicable to the Project's cumulative impacts, and no new impacts would occur that have not been analyzed in Section 4.20. Mitigation measures, identified above, would apply to the Project's potential contribution to cumulative impacts. Thus, less than significant cumulative wildfire impacts would occur.

In summary, construction of the Project would not result in impacts that are individually limited but cumulatively considerable. As discussed above, there is no potential contribution from Project operation to long-term cumulative impacts, and long-term operation of the BTR Restoration Project with Project implementation would remain the same as the existing condition.

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, Hydrology and Water Quality, and Wildfire 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

Senior Civil Engineer……George De La O, P.E.
Senior Civil Engineer.....Ken Zimmer, P.E.
Civil Engineer .....Kenneth Rickard, P.E.
Associate Civil Engineer .....Alex Ho, P.E.

Psomas (Environmental Document Preparation)

Principal-in-Charge ..... Jim Hunter, ENV SP
Senior Project Manager .....Alia Hokuki, AICP
Environmental Planner.....Daria Sarraf
Air Quality, Greenhouse Gas, and Noise Manager..... Tin Cheung
Cultural Resources Manager ..... Charles Cisneros
Biological Resources Manager .....Amber Heredia
Senior Aquatic Biologist ..... Carl Demetropoulos, Ph.D.
Senior Regulatory Specialist/Restoration Biologist ..... Dave Hughes
Senior Biologist ..... Allison Rudalevige
Michael Deseo .....GIS Analyst
Word Processing.....Sheryl Kristal

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