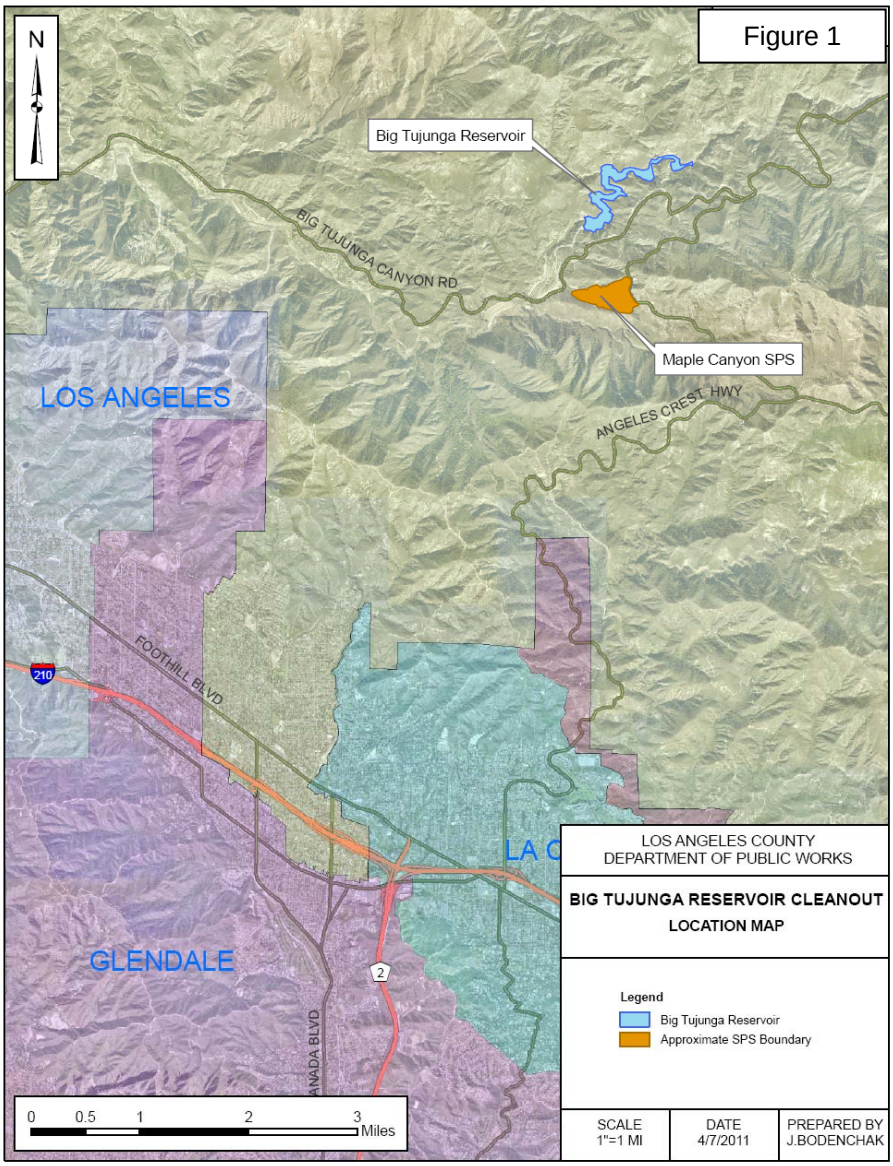
BIG TUJUNGA RESERVOIR SEDIMENT REMOVAL
PROJECT DESCRIPTION

PROJECT LOCATION

Big Tujunga Reservoir is located in the San Gabriel Mountains within the Angeles National Forest (Thomas Guide Page 4725, D5). The nearest communities are the foothill communities of Sunland and Tujunga south along Big Tujunga Road near the 210 Freeway (Foothill Freeway).

Traveling from the intersection of the 210 Freeway (Foothill Freeway) and Sunland Boulevard, head east on Sunland Boulevard, Sunland Boulevard becomes Foothill Boulevard, make a left at Oro Vista Avenue, Oro Vista Avenue becomes Big Tujunga Canyon Road, and continue for 9.4 miles on Big Tujunga Canyon Road and turn left onto Big Tujunga Dam gate.



BACKGROUND

The Station Fire started on August 26, 2009, in the Angeles National Forest near the United States Forest Service (USFS) ranger station on the Angeles Crest Highway (CA State Highway 2) and burned over 160,000 acres before containment on October 16, 2009. Approximately 87 percent of the watershed tributary to Big Tujunga Reservoir was affected. Big Tujunga Reservoir is tributary to the Big Tujunga Creek. On average, a watershed will take five years or more to recover from a forest fire burn. During this time, increased amounts of debris production are anticipated from the denuded ground surface. Based on the current survey, the total amount of accumulated sediment in the Big Tujunga Reservoir is approximately 2 million cubic yards (mcy). Additional sediment is expected to flow into the reservoir over the next few years from the recovering watershed.

SCOPE OF WORK

As a result of the recent sediment influx, the County of Los Angeles Department of Public Works (LACDPW) on behalf of the Los Angeles County Flood Control District (LACFCD) proposes a sediment removal project to permanently remove up to 4.4 mcy of sediment from Big Tujunga Reservoir. The project will be completed over approximately five years starting in the summer of 2015. The majority of the work within the reservoir will take place during non-storm season (April 16 to October 15).

Big Tujunga Reservoir Sediment Removal

The project will consist of completely dewatering Big Tujunga Reservoir through valve releases and mechanical pumping. The proposed cleanout will keep the reservoir in compliance with LACDPW's operational standards required for both flood protection and water conservation needs of the downstream communities. Water diversion structures will be constructed to allow natural flows from Big Tujunga Creek to bypass the reservoir.

Two options are being considered to transport sediment to the SPS, low emission equipment and a conveyor belt system. For the low emission option, an estimated 20 trucks would cycle continuously between the reservoir and SPS. During sediment removal operations this would total approximately 400 trucks trips per day. Prior to beginning any sediment removal, the existing reservoir access roads will be re-graded to allow truck traffic to enter the reservoir. Trucks would travel on the access roads to the nearby Maple Canyon Sediment Placement Site (SPS). Trucks will cross Big Tujunga Canyon Road for which normal traffic will be controlled.

For a conveyor belt system, the conveyor belt would be installed along the reservoir's access road to the SPS spanning approximately 11,800 feet. The conveyor would cross over Big Tujunga Canyon Road and have a cage surrounding the belt at this location to prevent any debris from falling to the road. The existing access roads will be regarded to allow conveyor equipment to enter the reservoir.

Design plans are anticipated to include both a conveyor belt and trucking options so that bidding contractors can use either method of transport to move excavated material from the reservoir to the SPS.

Sediment will be removed from approximately 46 acres of the reservoir using heavy equipment such as excavators and bulldozers. In order to extend the useful life of the remaining capacity of the Maple SPS, a portion of the sediment with quality conducive to re-use for aggregate industry will be stockpiled to a staging area next to the Big Tujunga Dam entrance gate and transported to off site aggregate companies in Sun Valley during times after construction activities occur in order to reduce any air quality impacts, if the trucking option is selected. Since the conveyor has low air-quality impacts, trucking the stockpile off-site can occur year round within the threshold of air quality standards.

Maple Canyon SPS

Maple Canyon SPS was established in 1981 for previous cleanouts of the reservoir with the current remaining capacity up to 4.4 mcy. It currently holds approximately 3 mcy of sediment and the existing fill covers an area of approximately 28 acres. Excavated material will be transported approximately 1.8 miles to the existing SPS. Bulldozers and other heavy equipment would be operated continuously at the SPS in order to spread and compact the sediment. The addition of 4.4 mcy of sediment from this project will increase the SPS footprint by 29 acres. Areas within the increased fill footprint would be cleared and grubbed prior to the placing of sediment.

The SPS design incorporates underground drainage pipes and surface drainage facilities such as gutters, inlets, and surface drains conveying surface runoff through the SPS. Debris basins were installed at the upstream end of each underground drainage pipe to catch eroded sediment from the natural drainages. These drainage facilities will be relocated to the top of the new SPS.

Excavation will occur until the remaining ultimate capacity of the SPS has been exhausted or until the reservoir cut template is achieved. Sediment removal and placement operations would mostly occur during the dry season between approximately April 16th and October 15th, during which time the reservoir would be dewatered. After October 15th, work will continue until the first storm is forecasted which will require the contractor to remove equipment from the reservoir until the end of the storm season. The reservoir will be operated according to standard flood control operating guidelines during the rainy season from October 15th through April 15th.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)/ NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

A Mitigated Negative Declaration (MND) is being prepared to fulfill CEQA requirements. A Draft MND is expected to be circulated in Spring 2013 and adoption of the MND is anticipated in Summer 2013.

The LACFCD is the CEQA lead agency. The United States Forest Service will be the NEPA lead agency. An Environmental Assessment (EA) is being prepared along with a Biological Evaluation/Biological Assessment (BA/BE) and Management Indicator Species (MIS) to satisfy NEPA requirements. The EA will be completed including compliance with the Endangered Species Act and Section 106 of the National Historic Preservation Act.

PROJECT IMPACTS AND PROPOSED MITIGATION MEASURES

Surface Water Diversion System

The project will contain a surface water diversion system in the upstream reservoir including a cofferdam, sediment desilting basin, and associated outlet structures. Reservoir inflow will be captured in these basins to allow sediment to settle to the bottom and divert the water to one of the risers associated with the dam valves via a pipe bypass. The bypass inlet shall be equipped with a device to exclude aquatic species from entering the bypass. During construction periods, all inflows will bypass the excavation activities to downstream of the dam so that no water will be held in the reservoir. Each spring following the storm season, the pool in the reservoir will be released at an acceptable rate to minimize any effects downstream. The reservoir plunge pool will serve as a safeguard to reduce turbidity to acceptable levels in the Big Tujunga Creek.

Sediment Mitigation

Construction site best management practices (BMPs) will be employed to prevent sediment from entering Big Tujunga Creek downstream of the dam. A surface water diversion plan will be submitted prior to any construction activities. During dewatering, the plunge pool will serve as a desilting basin to reduce turbidity. BMPs such as sandbags at the plunge pool's outlet will serve as future safeguards to ensure acceptable turbidity levels downstream in Big Tujunga Creek.

Erosion from exposed topsoil slopes and channels shall be prevented at project locations such as the material stockpile outside of the reservoir. Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, Caterpillar machinery tracks, or other work trails to control erosion. All surface water inflow shall be redirected whenever possible away from areas undergoing construction.

Species Mitigation

Project impacts will be detailed in the MND. Numerous biological surveys have been conducted in order to determine potential project impacts and determine the best methods to minimize or avoid those impacts. The MND will also list mitigation measures to reduce the impacts to less than significant levels.

ESTIMATED PROJECT COST

The work will be completed through a contract at an estimated cost of $34,000,000 and will take approximately 5 years to complete. The environmental permitting process has been initiated. Construction is anticipated to begin in April 2015.

ALTERNATIVE PLACEMENT SITES CONSIDERED

The proposed project plan will use trucking or conveyor belts to transport material to Maple Canyon SPS. The LACDPW has considered other locations to transport material. Trucking to quarries in Sun Valley at an average speed of 30 miles per hour could significantly impact existing traffic within Angeles National Forest and downstream neighborhoods along the two-lane Big Tujunga Canyon Road. Trucks would travel residential and forest roadways approximtely 34 miles roundtrip including adjacent to Shadow Hills neighborhoods along Wentwoth Street or Sunland Boulevard. This will increase air quality and noise impacts to neighborhoods. Trucking operations would run 8 hours per day, 5 days per week, 6 months per year along Big Tujunga Canyon Road and routes to Sun Valley Quarries.