Appendix F

Army Corps of Engineers, 404(B)(1)
Evaluation Summary

APPENDIX F – ARMY CORPS OF ENGINEERS, 404(B)(1) EVALUATION SUMMARY

1.0 Introduction

This document identifies the information in the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Littlerock Reservoir Sediment Removal Project that is applicable to Section 404 of the Clean Water Act (CWA). This summary has been prepared to facilitate and support the permit application required by the U.S. Army Corps of Engineers (Corps) to evaluate the Project under Section 404(b)(1).

As described in the EIS/EIR Section B, the Palmdale Water District (PWD) is seeking authorization to: (1) construct a subterranean grade control structure within the Littlerock Reservoir at Rocky Point; (2) restore the Reservoir to 1992 water storage and flood control capacity through an initial removal of approximately 1,165,000 cubic yards of sediment; and (3) maintain Reservoir capacity through ongoing annual removal of newly accumulated sediment.

The Project would be primarily located within the Littlerock Reservoir, which is a man-made feature formed by the impoundment of water by the Littlerock Dam. The Reservoir is located within the boundaries of the Santa Clara Mojave Rivers Ranger District of the Angeles National Forest, approximately 10 miles southeast of the City of Palmdale and four miles south of the community of Littlerock in northern Los Angeles County. Sediment that is excavated from the Reservoir would be used to backfill exhausted mining pits located at existing quarries within the City of Palmdale or temporarily stored at a 21-acre site owned by PWD in unincorporated Los Angeles County for recycled uses.

1.1 Regulatory Setting

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g. certain farming and forestry activities) (USEPA, 2015).

Proposed activities are regulated through a permit review process, with an individual permit required for potentially significant impacts. The Corps, per the environmental criteria set forth in the CWA Section 404(b)(1) Guidelines, reviews individual permits. These guidelines are the substantive criteria developed by the U.S. Environmental Protection Agency (EPA) and used by the Corps to evaluate proposed discharges into waters of the United States (USEPA, 2015).

The Corps may not issue a permit under Section 404 if the proposal does not meet the 404(b)(1) Guidelines, and a permit may only be issued for the least environmentally damaging practicable alternative (LEDPA), as determined by the Corps. The Corps considers practicability, which includes cost, existing technology, and logistics [40 C.F.R. 230.10(a) and 230.3(q)]. The primary component of the Corps' permit review process is the alternatives analysis. Per 40 C.F.R. 230.10(a), no discharge from a project shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences (USEPA, 1990).

A 1990 Memorandum of Agreement (MOA) between the EPA and the U.S. Department of the Army provides guidance on the type and level of "appropriate and practicable" mitigation, which demonstrates compliance with the Section 404(b)(1) Guidelines (USEPA, 1990). In determining measures to offset unavoidable impacts, mitigation should be "appropriate" to the scope and degree of those impacts and "practicable" in terms of cost, existing technology, and logistics in light of overall project purposes (USEPA, 1990). When evaluating a project, the Corps will consider whether the project provides appropriate and practicable compensatory mitigation, as well as the extent to which the project avoids or minimizes impacts.

1.2 Project Purpose *(Section 1.4 of the EA 404(b)(1) Guidelines Evaluation)*

1.2.1 Basic Project Purpose

The basic purpose for the Project is to restore PWD's water storage and flood control capacity at Littlerock Reservoir. This Reservoir is a critical part of the potable water system operated by PWD to provide service to customers in the City of Palmdale and the surrounding unincorporated communities. The Reservoir also provides debris control and flood protection for downstream areas (USFS, 1997).

1.2.2 Overall Project Purpose

The overall purpose for the Project is two-fold: (1) to restore Littlerock Reservoir to its 1992 water storage and flood control capacity, and maintain that capacity through annual sediment removal; and (2) to preserve habitat for the arroyo toad (*Anaxyrus californicus*) through construction of a grade control structure that would prevent sediment loss and headcutting of the stream channel upstream of Rocky Point.

1.2.3 Water Dependency Determination

The Project is water dependent. This Project would address ongoing siltation and sedimentation at Littlerock Reservoir through an initial removal of 1,165,000 cubic yards of accumulative sediment, which has decreased annual water storage of the Reservoir by approximately 500 acre-feet. Upon initial sediment removal, the Project includes ongoing annual removal of new sediment inflow to maintain the Reservoir's design capacity.

1.2.4 Project Purpose and Need under NEPA

Littlerock Dam and Reservoir are operated and maintained by PWD, pursuant to a USDA Forest Service (USFS) special use permit. The purpose and need for the USFS, as the NEPA Lead Agency, is to respond to an application from PWD for a special use authorization to construct the proposed grade control structure and to remove sediment from the Reservoir.

1.3 Proposed Project Description *(Section 1.5 of the EA 404(b)(1) Guidelines Evaluation)*

The proposed Project would consist of the following three components to restore and preserve the capacity of Littlerock Reservoir: (1) construction of a subterranean grade control structure, (2) initial removal of approximately 1,165,000 cubic yards of sediment (requiring approximately 7 to 12 years of removal during the fall-early winter), and (3) ongoing annual sediment removal (up to approximately 38,000 cubic yards per year during the fall-early winter). Annual site restorations would begin

immediately following the cessation of annual construction activities concurrent with appropriate planting conditions and permit requirements.

Grade Control Structure. Before sediment removal can occur, a grade control structure would be constructed within the Reservoir at an area known as Rocky Point. Construction of the grade control structure is necessary to ensure that sediment removal will not result in degradation to designated critical habitat for the arroyo toad located immediately upstream of Rocky Point by inducing head-cutting (lowering) of the channel bed upstream of the structure. The proposed grade control structure and construction would include the following:

- A permanent structure of soil cement at Rocky Point and extending from bank to bank. The structure would prevent head cutting (erosion) upstream of Rocky Point, preserving arroyo toad habitat.
- Constructed mostly below grade, with only the top or upper lip of the structure and some adjacent bank protection visible in the stream surface and adjacent banks after completion.
- Temporary ground disturbance of approximately 3.5 acres. Permanent disturbance after construction would consist of the crest of the grade control structure that remains visible above grade (approximately 8 feet by 200 feet), plus bank protection adjacent to the structure. Total area of visible (above ground) soil cement bank protection after construction, including the grade control structure crest, is approximately 0.34 acres.
- Construction duration of 20 weeks to begin in July and extend through the fall.
- Construction equipment would be operated up to 12 hours per day, 6 days a week, with night construction possibly required for a maximum of 14 nights.
- Workforce ranging in size from 9 to 14 persons.
- Maximum of 30 daily worker vehicle trips and 6 daily truck delivery trips.

Initial Annual Sediment Removal. Upon completion of the grade control structure, PWD would remove approximately 1,165,000 cubic yards of sediment from the Reservoir bottom, restoring the Reservoir to 1992 design capacity. Sediment would be removed annually during a temporary closure of the Reservoir starting in 2017 after Labor Day until seasonal water refill of the Reservoir suspends removal efforts (estimated between mid-November and January). The Reservoir would be closed to the public during this period. Annual sediment removal activities restoring the Reservoir capacity would include the following:

- Excavation of approximately 1,165,000 cubic yards of accumulated sediment to restore Littlerock Reservoir to 3,500 acre-feet (af) of water storage capacity.
- Temporary annual closure of the Reservoir starting after Labor Day until seasonal water refill of the Reservoir suspends removal efforts (estimated between mid-November and January).
- Sediment removal activities would occur during daylight hours up to 12 hours per day Monday through Saturday (no work on Sundays or federal holidays).
- Maximum annual disturbance of approximately 30 acres within the Reservoir bed.
- Equipment staging within paved parking areas along Reservoir.
- Maximum of 480 (240 round trip) dump truck trips per day. Requires the use of 16 dump trucks.
- Sediment storage and disposal at one of two locations: (1) exhausted mining pits within Littlerock, with more than 1,200,000 cubic yards of capacity for long-term disposal; and (2) PWD-owned

property on 47th Street East, with up to 10,000 cubic yards of capacity for short-term storage (allowing for recycled use of sediment material).

- Annual restoration of disturbed areas.
- Minimum duration of approximately 7 years, up to 12 years, to restore 1992 design capacity.

Ongoing Annual Sediment Removal. Current estimates indicate Reservoir capacity is reduced by siltation at an average annual rate of approximately 38,000 cubic yards of sediment per year, amounting to a loss of approximately 23 af of water capacity annually. Therefore, upon restoring the Reservoir to 1992 capacity, an average of 38,000 cubic yards of sediment would be removed from the Reservoir annually. The actual amount of sediment removed from the Reservoir would be based on the expected amount of sediment deposition that occurred during each year's winter storms. Operation and maintenance sediment removal would include the following activities:

- Approximately 38,000 cubic yards of sediment removed from the Reservoir annually (actual amount removed would be based on the expected amount of sediment deposition carried into the Reservoir during each year's winter storms).
- Would occur sometime after Labor Day and be finished prior to mid-November of each year.
- Sediment removal activities would occur during daylight hours up to 12 hours per day Monday through Saturday (no work on Sundays or federal holidays).
- Maximum annual disturbance of approximately 15 acres within the Reservoir bed.
- Maximum of 180 (90 round trip) dump truck trips per day. Requires the use of 6 dump trucks.

2.0 Alternatives *(Section 4.0 of the EA 404(b)(1) Guidelines Evaluation)*

Under the Section 404(b)(1) Guidelines, the Corps must consider a number of factors when making its permit decisions, including whether there are practicable alternatives to the proposed discharge. An alternative is "practicable" if "it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes." 40 C.F.R. 230.10(a)(2).

In addition to the 404(b)(1) alternatives analysis, the Corps is required to analyze alternatives pursuant to NEPA. Under NEPA, the range of alternatives is governed by the rule of reason, which provides that a decision document must consider a reasonable range of alternatives as defined by the specific facts and circumstances of the proposed action. Alternatives must be feasible and consistent with the statement of purpose and need. If alternatives have been eliminated from detailed study, the decision must briefly discuss the reasons for their elimination. For this Project, the alternatives considered but eliminated from full analysis are summarized in the EIS/EIR Section B.4.6. Under NEPA, feasible alternatives selected for detailed study in the EIS/EIR must be addressed at the same level of detail as the proposed Project, thus sharply defining the issues and providing a clear basis for choice by the decision maker and the public (40 C.F.R. 1502.14.) The "No Action" alternative (i.e., no activity requiring a Corps permit) must also be included among the alternatives analyzed.

Two alternatives were fully analyzed in the EIS/EIR: (1) Reduced Sediment Removal Intensity Alternative, and (2) No Action/No Project Alternative. The following is a summary of the alternative descriptions that are included in the EIS/EIR Section B.4.5.

Reduced Sediment Removal Intensity Alternative (Alternative 1)

Under Alternative 1, construction of the grade control structure would be identical to that of the proposed Project. Once restored to design storage capacity, ongoing sediment removal to maintain Reservoir capacity would be identical to that of the proposed Project. Therefore, this alternative only differs from the proposed Project during the initial (restorative) sediment removal. Alternative 1 seeks to reduce certain environmental impacts (primarily air quality and traffic) by:

- Starting the initial sediment removal period on July 1 (annually), instead of after Labor Day.
- Sediment removal activities would occur 5 days per week, instead of 6 (with the proposed Project).
- Restoring the Reservoir to 1992 design water storage and flood control capacity within a minimum of 13 years, instead of 6 (with the proposed Project).
- Reducing the number of daily haul trips and equipment used during initial sediment removal.

Site preparation, disturbance area, construction staging/access, and annual restoration activities would be the same under Alternative 1 as that described for the proposed Project during initial/restoration sediment removal. However, the amount of equipment used, weekly construction scheduling, and construction workforce would be reduced when compared to the proposed Project. While these reductions would reduce air quality emissions and the number of daily truck trips, it would double the number of years needed to restore the Reservoir to 1992 capacity. Therefore, this alternative seeks to reduce the intensity of construction activities of the proposed Project.

No Action/No Project Alternative

Under the No Action/No Project Alternative, sediment removal activities would not occur and sediment would continue to accumulate upstream of Littlerock Dam at the annual average rate of 38,000 cubic yards per year, reducing the capacity of the Reservoir by approximately 23.6 acre-feet annually. Should the Reservoir be filled with sediment to the Dam spillway, sediment accumulated behind the Dam would be approximately 7.4 million cubic yards. As Reservoir capacity is lost each year, PWD would be forced to acquire additional water from other sources to supply communities within PWD's service territory.

Continued sediment deposition could compromise the long-term integrity of the Dam. In this event, the California Department of Water Resources Division of Safety of Dams could require the Dam to be breached. In addition, as the Reservoir would no longer function as a viable water storage facility, it would not be in compliance with the USFS Special Use Permit under which it currently operates. Subsequently, the Dam would be demolished per the conditions identified in the USFS's Special Use Permit. Demolition of the Dam would result in the elimination of the potential for water impoundment at the Reservoir and permanent loss of this potable water source. While 7.4 million cubic yards of sediment would accumulate within the Reservoir, demolition of the Dam is estimated to only require the removal of approximately 2.8 million cubic yards of sediment and dam concrete. Such a scenario would result in a project similar to, but larger, than the proposed Project and restore Little Rock Creek stream flow through the existing Reservoir.

Either scenario potentially occurring under the No Action/No Project Alternative would eliminate any downstream flood-control benefit the dam currently provides. It would result in 23 acre-feet per year of sediment, which is currently held by the Dam, being transported naturally by flows into the downstream bed of Little Rock Creek, with potential associated reductions in flood conveyance capacity of the creek and in-stream structures such as road crossings and alteration of the in-stream habitat. The existing Reservoir area would also become similar to upstream conditions under this alternative. Riparian

vegetation would be expected to recruit along the margins of the active channel and may eventually develop into a mature riparian community. Other areas of the Reservoir likely would be similar to alluvial fan communities and consist of a mosaic of upland and various riparian vegetation depending on the scour regime associated with the creek. Should this occur, the Reservoir area may develop characteristics that would support habitat for the arroyo toad and other riparian and floodplain associated species.

2.1 Practicability of Alternatives

Per 40 C.F.R. 230.10(a)(2), an alternative is "practicable" if "it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose." Consistent with the 404(b)(1) Guidelines for alternatives analysis, the following criteria are used in the discussion below to assess the practicability of the Project alternatives: (1) Overall Project Purpose and NEPA Purpose and Need; (2) Cost; (3) Technology; (4) Logistics; and (5) Environmental.

2.1.1 Overall Project Purpose and NEPA Purpose and Need Criteria

To be practicable, an alternative must meet the overall project purpose to restore Littlerock Reservoir to its 1992 water storage and flood control capacity and maintain that capacity through annual sediment removal, and to preserve habitat for the arroyo toad through construction of a grade control structure.

- **Reduced Sediment Removal Intensity Alternative (Alternative 1).** This alternative would meet the overall Project purpose. Alternative 1 would restore the Reservoir to its 1992 water storage and flood control capacity in approximately 13 years (compared with 7 to 12 years under the proposed Project), and annual sediment removal activities, as well as construction of the grade control structure, would be identical to the proposed Project.
- **No Action/No Project Alternative.** This alternative would not improve the water storage or flood control capacity of Littlerock Reservoir, and consequently would not meet the overall Project purpose and need. The No Action/No Project Alternative is required for an EIS under NEPA (40 CFR Section 1502.14[d]) and for an EIR under CEQA (Title 14 CCR Section 15126.6[e]).

2.1.2 Cost Criteria

Cost practicability for the alternatives is based on the construction costs for Reservoir excavation and the grade control structure. A 2015 probable cost estimate that was prepared for this Project included a 25 percent contingency for both the reservoir excavation and grade control cost estimates due to the preliminary nature of the plans (NHC, 2015). Cost of the grade control structure construction, including contingency, was estimated at approximately $4.2 million (NHC, 2015). The initial sediment excavation (restoring the Reservoir to design capacity), including contingency, was estimated at approximately $18.8 million (NHC, 2015). Reservoir excavation costs would be sensitive to fluctuating transportation costs for excavated material. Grade control structure costs would be sensitive to fluctuating roller compacted concrete prices.

The Project's cost estimate for initial excavation was based on the amount of excess sediment in the Reservoir in October 2013. As sediment is continually delivered to the Reservoir by natural inflow, the cost of initial excavation will be increased by an amount roughly equivalent to $800,000 per year for each year that elapses between 2013 and the year the initial excavation is completed (NHC, 2015). This also represents the annual ongoing cost for maintaining design capacity (after the 1992 design capacity has been restored).

- **Reduced Sediment Removal Intensity Alternative (Alternative 1).** Alternative 1 would involve a reduction in the amount of equipment that is required, the weekly construction scheduling, and the construction workforce compared with the proposed Project. Although the annual cost of initial excavation may be less than the Project, costs would occur over a longer period (i.e., 13 years) under Alternative 1. As construction of the grade control structure and ongoing annual sediment removal activities following initial restoration of the Reservoir would be identical to the proposed Project, the cost of these components would also be identical. Overall costs of Alternative 1 would be similar to the proposed Project.
- **No Action/No Project Alternative.** No immediate construction costs would be incurred with implementation of this alternative. However, the No Action/No Project Alternative may contribute to the need for future demolition of the Dam and removal of approximately 2.8 million cubic yards of sediment and dam concrete. Given the larger scale of such a project, this alternative would likely incur greater construction and excavation cost in the future.

2.1.3 Technology Criteria

The technology criterion applicable to the alternatives considers the following methods used for sediment excavation and construction of the grade control structure.

Grade Control. The grade control structure is proposed to be constructed of roller compacted concrete. The structure includes bank protection upstream and downstream of the grade control sill. Excavation for the structure is up to 60 feet below the existing ground and has been assumed to be open cut at a 2:1 slope with minimal shoring on the upstream and downstream sides in the reservoir and creek bed. Control of water has been assumed to involve a series of dewatering wells upstream and downstream of the structure with disposal in the reservoir (i.e., assuming that reservoir excavation is not occurring simultaneously). In addition to the dewatering wells, a low temporary berm is assumed to be constructed upstream of the structure to contain incidental runoff from upstream. A total of approximately 6,250 cubic yards of concrete is estimated for construction of the grade control sill and stepped face of the structure, and approximately 3,000 cubic yards are required for the roller compacted concrete bank protection and side slopes. Temporary excavation and backfill is required for installation of the structure and finished grading will include tie-ins to the existing slopes upstream and downstream of the structure. These slopes are assumed to be treated with simple erosion control methods involving biodegradable wattles and seeding (NHC, 2015).

Excavation. The excavation is a trapezoidal section with 4:1 side slopes and flat bottom. The proposed bottom of the excavation plan generally follows a slope of approximately 1.48 percent up the length of the Reservoir, from an elevation just above that of the existing outlet at the upstream Dam face. The bottom of the excavation plan daylights at Rocky Point, where a grade control is proposed to minimize potential disturbance to biologically sensitive areas upstream (NHC, 2015). Approximate types and numbers of equipment to be utilized include: 2 D9 Bulldozers; 1 Grader; 1 Sweeper; 1 Front End Loader (6 yard capacity); 1 Excavator; 16 Dump Trucks (12 yard capacity); 1 Water Truck (4,600 gallon capacity); 1 Fuel Truck; 1 Maintenance Truck; Brush chipper/shredders and chain saws.

- **Reduced Sediment Removal Intensity Alternative (Alternative 1).** Although this alternative would schedule initial sediment removal activities over a longer period, the same types of excavation equipment would be identical to the proposed Project. The schedule and equipment for construction of the grade control structure would also be identical to the proposed Project.
- **No Action/No Project Alternative.** As this alternative would not involve any immediate construction activities, the technology criterion is not applicable.

2.1.4 Logistics Criteria

In order to be practicable, an alternative must satisfy industry and regulatory design standards that are required for safety or are driven by design efficiencies having to do with cost controls or best engineering practices. PWD has developed Standard Project Commitments (SPCs) as part of its Project activities, some of which are highlighted in Table 5-1. See Appendix A in the EIS/EIR for a full list of the Project's SPCs. Adherence to all identified SPCs is considered part of the proposed Project, and the SPCs include the commitments PWD will incorporate during all proposed Project activities, if selected by the lead agencies in their respective decision documents. The EIS/EIR also includes several mitigation measures proposed to reduce or avoid specific impacts not covered by SPCs.

PWD and its contractors will follow approved SPCs and mitigation measures at all times during Project activities. The Project SPCs were developed to proactively protect sensitive resources at the Reservoir, reduce environmental impacts associated with Project activities, and to ensure safety during Project construction. SPCs can also evolve to become better as improvements are discovered. A number of the SPCs have been developed to specifically protect natural resources (plants, fish and wildlife, and for cultural resources). SPCs include, among other things, pre-construction flagging of sensitive resource areas and the need for other restrictions. In making final decisions on the Project, the lead agencies are allowed to weigh the feasibility and need for these SPC's, and may not make all of them applicable to the Project. If any of the SPC's are not selected, the rationale for excluding them shall be provided in the decision document, along with a determination that the impacts of the Project are still within the scope of those described in the EIS/EIR. For specific impacts that would not be sufficiently reduced or avoided by SPCs, mitigation measures have been proposed within the relevant issue area analyses for the EIS/EIR. The lead agencies will determine which measures are to be adopted as part of their decision on the Project.

All Project personnel would be subject to an annual training that covers applicable SPCs, mitigation measures, environmental laws and regulations, and applicable agency requirements, with adherence to be included as part of PWD's written contract with any contractor selected to conduct proposed Project activities. Prior to conducting Project activities, PWD personnel would review approved SPCs and mitigation measures with the selected contractor to ensure the intent and background of each procedure is clearly understood. In addition, PWD and USFS personnel (or representatives) would monitor the contractor during activities and conduct follow-up inspections of the job site at periodic intervals after the work had been completed.

- **Reduced Sediment Removal Intensity Alternative (Alternative 1).** This alternative would incorporate the same SPCs and mitigation measures as the proposed Project (see Table 5-1 below, and EIS/EIR Appendix A). The logistics for construction and implementation of Alternative 1 are identical to the proposed Project.
- **No Action/No Project Alternative.** As this alternative would not involve any immediate construction activities, proposed Project SPCs and mitigation measures are not applicable. The logistics criteria would not apply to the No Action/No Project alternative.

2.1.5 Environmental Criteria

To meet the Environmental Criteria, the alternatives must have similar or fewer impacts to aquatic resources as compared to the proposed Project, and they must not create other significant adverse environmental consequences such as impacts to federally listed as threatened or endangered species, impacts to vegetative communities, or impacts to historic properties.

- **Reduced Sediment Removal Intensity Alternative (Alternative 1).** This alternative was developed to reduce the severity of impacts associated with air quality, traffic, and noise as compared to the proposed Project. Alternative 1 would also reduce the risk of road kill as a result of fewer daily truck trips. While Alternative 1's extended construction schedule would increase the likelihood of disturbing nesting birds, impacts would remain less than significant. Draining the Reservoir earlier in the season may also have greater impacts to arroyo toads than under the proposed Project, although there would be no substantial change in the significance of these impacts. Regarding the Projects effects on cultural resources, impacts from Alternative 1 would be identical to the proposed Project.
- **No Action/No Project Alternative.** By not removing sediment as proposed, the No Action/No Project Alternative would avoid impacts to wildlife species, vegetative communities, or historic properties. However, this alternative may require eventual removal of sediment and demolition of the Dam, which would involve an intensive construction effort that would create greater impacts to biological resources above and below the Dam than from the proposed Project or Alternative 1. In the event that removal of sediment and demolition of the Dam were to occur, impacts to cultural resources would likely be similar to the proposed Project if standard mitigation measures are implemented to avoid and/or minimize adverse effects on these resources.

2.2 Practicability Analysis Findings and Conclusions

2.2.1 Reduced Sediment Removal Intensity Alternative (Alternative 1)

Alternative 1 is a practicable alternative to the proposed Project. It meets the Project's overall purpose and need. The estimated costs of this alternative would be similar to the proposed Project, while the logistics for construction and implementation are identical. Both Alternative 1 and the proposed Project would incorporate the same SPCs to proactively protect sensitive resources at the Reservoir, reduce environmental impacts associated with Project activities, and to ensure safety during Project construction. Further, Alternative 1 would reduce the severity of the proposed Project's impacts associated with air quality, traffic, and noise, while not creating new significant impacts that would require further mitigation.

2.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is not a practicable alternative to the proposed Project. It would not meet the overall purpose and need to improve the water storage or flood control capacity of Littlerock Reservoir. If eventual removal of the Dam and accumulated sediment is required as a future outcome of this alternative, such a project would likely incur greater construction and excavation costs than the proposed Project, as well as create greater impacts to biological resources above and below the Dam.

3.0 Existing Conditions *(Section 1.8 of the EA 404(b)(1) Guidelines Evaluation)*

The Project area includes the Littlerock Reservoir where sediment would be removed and the grade control structure installed at Rocky Point; staging areas located within or immediately adjacent to the Reservoir; and sediment disposal areas located off National Forest System (NFS) lands. Sediment disposal/storage areas are located up to six miles north of the Reservoir and include disturbed quarries and semi natural lands.

The majority of the Project is located within the Antelope Valley Watershed, which is a large (3,387-square-mile) closed basin in the western Mojave Desert. All water that enters the watershed either infiltrates into the underlying groundwater basin, or flows toward three playa lakes located near the center of the watershed (i.e., Rosamond Lake, Rogers Dry Lake, and Buckhorn Dry Lake).

Little Rock Creek is a major intermittent drainage that transports water from the San Gabriel Mountains to the playas. During periods of normal rainfall, the creek readily overtops the dam and flows for several miles into the Antelope Valley. Little Rock Creek is home to several sensitive biological resources including the arroyo toad, two-striped garter snake, southwestern pond turtle, and a variety of rare birds including least Bell's vireo and bald eagle.

The proposed 47th Street East sediment storage site is located in the lower foothills of the San Gabriel Mountains immediately below the California Aqueduct. This site is bisected by a series of ephemeral drainages that carry surface water off the site. As a result of the dry climate in the Project area, the existing ephemeral streams typically flow only during periods of heavy rainfall.

A preliminary jurisdictional delineation of State and or federal waters/wetlands was conducted at the Reservoir, at Little Rock Creek below the dam, and at 47th Street East sediment storage site. Based on this survey the preliminary jurisdictional determination and delineation of waters report identified 92.306 Federal non-wetland waters and 97.428 acres of State jurisdictional waters. Federal wetland waters do not occur in the Reservoir or in Little Rock Creek. Littlerock Reservoir, Little Rock Creek, and the ephemeral drainages on the 47th Street East sediment disposal site would be considered "waters of the United States" and would be subject to the jurisdiction of the Corps, the California Department of Fish and Wildlife, and the Lahontan Regional Water Quality Control Board (LRWQCB).

The following summaries highlight additional site conditions that may be applicable to the Corps' review and decision-making process. A full discussion of the Project's site conditions, per resource area, can be found in the EIS/EIR, and their locations within the document are identified in Table 3-1, below.

Air Quality. The Project is located within the Mojave Desert Air Basin, under the jurisdiction of the Antelope Valley Air Quality Management District. The Project area is in nonattainment of the State and federal ozone standards and the State PM10 standard. The Project area is designated as attainment and/or unclassified for all other criteria pollutant standards. The Project area's attainment status is significantly influenced by pollutant transport from both the south (South Coast Air Basin, i.e. Los Angeles area) and the west (San Joaquin Valley Air Basin).

Biological Resources. There are currently 87 special-status wildlife taxa documented within the general region of the Study Area, with 20 of these taxa observed within or adjacent to the Project area. Two federally listed species are confirmed as occurring in the Project area: arroyo toad and least Bell' vireo. Arroyo toad is present in Little Rock Creek above Rocky Point and least Bell's vireos were documented below the dam downstream of the existing PWD access road. Approximately 24 special-status plant taxa have the potential to occur in the Project area. Native fish were not detected during the surveys. Bluegill (*Lepomis macrochirus*) and largemouth bass (*Micropterus salmoides*) were the most common non-native species detected and were found to occur in the Reservoir and portions of Little Rock creek above Rocky Point.

Cultural Resources. The Littlerock Reservoir contains no previously recorded cultural resources, and no cultural resources were identified within the Project's Area of Potential Effect (APE) during a pedestrian survey. The 47th Street East Property contains one previously recorded cultural resource (P-19-002475/CA-LAN-2475H). Documented in 1996, P-19-002475 consists of a historic-era metal can scatter dating to the late 1930s and early 1940s. In addition to rusted metal cans, it also contained fragments of

bottle glass, chinaware sherds, iron pipe, metal scrap, barrel hoops, nails, and spent ammunition cartridges. During the pedestrian survey of the Project APE, no evidence of this site was observed. The area where the site was located appears to have been graded in recent years. This resource is no longer extant.

Noise. Ambient noise at Littlerock Reservoir is primarily created by birds chirping, wind noise, and periodic noise from recreationists and concessionaire activities. At residential receptor locations, the dominant noise source along the haul truck transportation routes and PWD disposal property is roadway traffic. In general, the proposed truck route areas are predominantly open space or rural residential lands where existing noise levels are generally low.

Traffic. There are four key intersections in the Project area that could potentially be affected by Project construction. Based on the existing peak hour traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the Level of Service (LOS) has been determined at each intersection. All key intersections within the Project area currently operate at LOS B (i.e., acceptable conditions) or better during the peak periods.

Water Quality. The Project area lies within the South Lahontan Hydrologic Region, one of the State's ten hydrologic regions established by the California Department of Water Resources for management purposes. The Project is subject to the water quality standards of the Water Quality Control Plan for the Lahontan Region (Basin Plan) as well as USFS water quality management objectives and strategies. The South Lahontan Hydrologic Basin Planning Area is further divided into Hydrologic Units (HU) and Hydrologic Areas (HA). The Project area lies within the Antelope HU. Littlerock Reservoir and all of the upstream contributing area, as well as both potential disposal sites, fall within the Rock Creek HA, while Little Rock Wash (downstream of the reservoir and dam) traverses both the Rock Creek HA and the Lancaster HA (LRWQCB, 1995). No Total Maximum Daily Loads (TMDLs) have been developed within the Project area. However, Littlerock Reservoir does not meet water quality standards for the Municipal and Domestic Supply beneficial use, and a TMDL is required but not yet complete. The reservoir is currently listed as impaired by metals (manganese), although the source is unknown. In addition, the RWQCB is considering listing Littlerock Reservoir as impaired by mercury and polychlorinated biphenyls (PCBs) (LRWQCB, 2014).

Table 3-1. Location of Issue Area Discussions in EIS/EIR

Issue Area	Applicable EIS/EIR Section	
	Affected Environment	Impact Assessment
Biological Resources	Section C.3.1	Section C.3.5
Essential Fish Habitat	Section C.3.1	Section C.3.5
Cultural Resources	Section C.4.1	Section C.4.5
Air Quality	Section C.2.1	Section C.2.5
Noise	Section C.8.1	Section C.8.5
Traffic	Section C.10.1	Section C.10.5
Water Quality	Section C.12.1	Section C.12.5

Source: Littlerock Reservoir Sediment Removal Project EIS/EIR (May 2016)

4.0 Environmental Consequences *(Section 5.0 of the EA 404(b)(1) Guidelines Evaluation)*

4.1 Impacts to Physical/Chemical Characteristics

Direct and indirect Impacts to the physical and chemical characteristics of the Project area would occur from implementation of the proposed Project and Alternative 1. No change to the Project area would immediately occur under Alternative 2; however, impacts would be substantial above and below the Dam if future Dam removal and sediment excavation is required. The following discussion highlights some of the Project impacts to the surrounding physical and chemical characteristics, while Table 4-1 identifies the locations within the EIS/EIR that analyze these Project impacts in detail.

Direct impacts to State and federal waters would include the removal of native riparian vegetation, alter Little Rock Creek flows within the boundary of Littlerock Reservoir, and possibly induce local erosion when inflow occurs when the reservoir is empty or filling. Indirect impacts could include alterations to the existing topographical and hydrological conditions. Operational impacts to wetland habitats would be similar to direct and indirect impacts and would primarily occur as a result of annual sediment removal activities or repairs to PWD access road below the dam.

Ground-disturbing activities in Project area could contribute to direct loss of a candidate, sensitive, or special-status species or to a loss of habitat. Direct, indirect, and operational impacts to special-status plant species may occur in a variety of ways, including the direct removal of plants during the construction of the grade control structure, during sediment removal, or from road maintenance activities north of the dam.

Construction of the grade control structure would result in soil disturbance. Restoration of the Reservoir storage capacity could also induce local erosion when the reservoir is empty or filling, due to steepening of the bed slope downstream of the grade control structure. However, this erosion would be confined to the reservoir bottom and sides below the water surface. No Project-related erosion would be expected at the disposal sites, and sedimentation from any temporary sediment stockpiles would be minor due to Project SPCs and compliance with existing regulations.

The Project would have a substantial beneficial impact on the surrounding watershed. By restoring the Reservoir to its 1992 design capacity, the Project would increase the Reservoir's volume to detain floods by 463 acre-feet (15 percent increase in volume). The Project would also improve the Reservoir's ability to provide debris control as well as continue to serve as a water resource for the surrounding communities.

Table 4-1. Impact Analyses for Physical/Chemical Characteristics in EIS/EIR

Issue Area	Applicable EIS/EIR Section		
	Proposed Project	Alternative 1	Alternative 2
Substrate	Section C.5.5.1	Section C.5.5.2	Section C.5.5.3
Current patterns and water circulation (and fluctuation)	Section C.7.5.1	Section C.7.5.2	Section C.7.5.3
Suspended particulates/turbidity	Section C.5.5.1 Section C.12.5.1	Section C.5.5.2 Section C.12.5.2	Section C.5.5.3 Section C.12.5.3
Normal water level fluctuations	Section C.7.5.1	Section C.7.5.2	Section C.7.5.3
Flood hazards and floodplain values	Section C.7.5.1	Section C.7.5.2	Section C.7.5.3

Table 4-1. Impact Analyses for Physical/Chemical Characteristics in EIS/EIR			
Issue Area	**Applicable EIS/EIR Section**		
Storm, wave and erosion buffers	Section C.5.5.1 Section C.7.5.1 Section C.12.5.1	Section C.5.5.2 Section C.7.5.2 Section C.12.5.2	Section C.5.5.3 Section C.7.5.3 Section C.12.5.3
Erosion and accretion patterns	Section C.5.5.1 Section C.7.5.1 Section C.12.5.1	Section C.5.5.2 Section C.7.5.2 Section C.12.5.2	Section C.5.5.3 Section C.7.5.3 Section C.12.5.3
Water quality (salinity)	Section C.12.5.1	Section C.12.5.2	Section C.12.5.3
Aquifer recharge	Section C.7.5.1	Section C.7.5.2	Section C.7.5.3
Baseflow	Section C.7.5.1	Section C.7.5.2	Section C.7.5.3
Mixing zone/current velocity	Section C.7.5.1 Section C.12.5.1	Section C.7.5.2 Section C.12.5.2	Section C.7.5.3 Section C.12.5.3

Source: Littlerock Reservoir Sediment Removal Project EIS/EIR (May 2016)

4.2 Impacts to Biological Characteristics

Direct and indirect impacts to the biological characteristics of the Project area would occur from implementation of the proposed Project and Alternative 1. No change to the Project area would immediately occur under Alternative 2; however, impacts would be substantial above and below the Dam if future Dam removal and sediment excavation is required. The following discussion highlights some of the Project impacts to the surrounding biological resources, while Table 4-2 identifies the locations within the EIS/EIR that analyze these Project impacts in detail.

Implementation of the Project would affect biological resources through the removal of vegetation, altered soil conditions, loss of native seed banks, and temporary changes in the topography of the drainage. The vast majority of sediment removal activities would occur in unvegetated sandy wash. Most of the vegetation at the Reservoir is limited to scattered elements along the margin of the Reservoir and within a few well defined communities. These areas abut recreation facilities and are routinely subject to disturbance from anglers, recreationists, and off-highway vehicle use. Although the Project would remove riparian habitat, the functional value of the community in the Reservoir has been adversely affected or lost through mortality or previous disturbance and/or removal.

Habitat in the Project area has the potential to support a variety of State and federally listed wildlife species. Construction activities would disturb wildlife by limiting the ability for some species to forage at the Reservoir for several months at a time. However, access to surface water is generally present above and below the dam and work would not be conducted at night when many species are foraging. Indirect effects to aquatic species may be caused by the diversion or modification of water flows at the grade control structure, increased downstream sediment transport, or the establishment of noxious weeds. Human activities can indirectly affect wildlife by increased noise or by attracting predators such as the common raven, kit fox, and coyote from trash and litter. Operational impacts to wildlife are similar to sediment removal activities and include crushing by vehicles, trampling, increased sedimentation, dust, and the spread of exotic weeds.

The Littlerock Reservoir does not support any species of native fish. The Project would remove all non-native fish in order to improve habitat conditions for arroyo toad and other native species.

Table 4-2. Impact Analyses for Biological Characteristics in EIS/EIR

Issue Area	Applicable EIS/EIR Section		
	Proposed Project	Alternative 1	Alternative 2
Special aquatic species	Section C.3.5.1	Section C.3.5.1	Section C.3.5.3
Fish, crustaceans, mollusks, and other aquatic organisms	Section C.3.5.1	Section C.3.5.1	Section C.3.5.3
Wildlife values	Section C.3.5.1	Section C.3.5.1	Section C.3.5.3
Threatened and endangered species	Section C.3.5.1	Section C.3.5.1	Section C.3.5.3
Biological availability of possible contaminants in dredged or fill materials	Section C.3.5.1 Section C.12.5.1	Section C.3.5.1 Section C.12.5.2	Section C.3.5.3 Section C.12.5.3

Source: Littlerock Reservoir Sediment Removal Project EIS/EIR (May 2016)

4.3 Impacts to Human Use Characteristics

Direct and indirect impacts to human use characteristics of the Project area would occur from implementation of the proposed Project and Alternative 1. No change to the Project area would immediately occur under Alternative 2; however, impacts would be substantial above and below the Dam if future Dam removal and sediment excavation is required. The following discussion highlights some of the Project impacts to human uses, per issue area, while Table 4-3 identifies the locations within the EIS/EIR that analyze these Project impacts in detail.

Water Supply. The Project would increase the storage capacity of Littlerock Reservoir by 463 acre-feet. However, water diverted to Palmdale Lake would not be available for Antelope Valley Groundwater Basin recharge in Little Rock Creek downstream of the dam. While the loss of this recharge could have an adverse effect on local groundwater levels and supplies, the Project-related reduction in Little Rock Creek water available to groundwater recharge would be minor, with little or no overall effect on aquifer volume or groundwater levels due to good recovery of the local groundwater subbasin in wet years, and the compensating effect of reduced groundwater pumping as surface water sources increase. Without implementation of the Project, PWD would need to rely more heavily on additional local groundwater pumping and water from the State Water Project.

Aesthetics. Because the Reservoir would be closed to the public during the proposed activity periods, visual impacts within the ANF would be limited to times when Project activities are completed. No visual change from Project activities would be visible when the Reservoir is full. Additionally, sediment disposal within quarry disposal locations would not be visible to the public. This is because the quarry properties are large disturbed areas, setback from public viewsheds. The grade control structure bank protection would introduce a new industrial character to views from Rocky Point, and the temporary sediment storage and activities within the PWD site would expand the existing disturbed and un-vegetated portion of the site north along 47th Street. However, these changes would not significantly alter the existing visual landscape of the sites, as the overall composition of viewsheds at these locations would be largely unaltered.

Noise. Noise impacts during annual sediment removal/disposal activities would be a function of the construction equipment, the equipment location, and the timing and duration of the noise-generating activities. The use of mobile construction equipment during annual sediment removal would not exceed

75 dBA Lmax at any residential receptors. Temporary noise generated by on-site construction equipment within the Reservoir or quarry disposal locations would not impact any sensitive receptors.

Traffic/Transportation Patterns. Initial sediment removal (to restore the Reservoir design capacity) would result in a significant impact at the intersection of Cheseboro Road and Pearblossom Highway during the afternoon peak hours. The presence of large trucks along the haul routes could also result in impacts relative to overall normal traffic flow.

Safety. Any potential impacts to water quality or public health due to hazardous materials from Project activities would be minor. Discharge of pollutants to receiving waters would be related to the spill or accidental release of hazardous materials, and the potential for hazardous materials to enter any waterbody would be small due to the generally dry conditions of the Project area during the proposed work schedule. The potential for the public or construction workers to be exposed to hazardous materials also would be small due to the generally uninhabited character of the Project area and the lack of substantial known contaminants in the reservoir sediment.

Recreation. After the initial construction and excavation activities proposed throughout the summer and fall of the Project's first year (2017), the proposed Project would not preclude recreational use of the Reservoir during the peak summer months until after Labor Day, assuming that the Reservoir is opened for public use during the life of the Project. The schedule for ongoing annual excavation and sediment removal would minimize the impacts to recreationists by avoiding closure of the Reservoir during the peak recreational period. The Project does not involve any alterations to the recreational opportunities offered at the Reservoir, nor does it propose any change in the management of the Reservoir.

Property Ownership. The Reservoir is located on NFS lands and is characterized as a non-recreation special-use. Although the Reservoir is managed by PWD, its operations are subject to a special-use authorization that is administered by the USFS. The Project would store excavated sediment at two sites: (1) a 21-acre undeveloped site that is owned by PWD and is located in unincorporated Los Angeles County; and (2) privately operated sand and gravel pits that are located in the City of Palmdale. The Project is subject to the discretionary review and approval of the USFS, and PWD is coordinating with the County of Los Angeles and the City of Palmdale to meet their permitting and zoning requirements.

Land Use. The Project requires numerous dump truck trips (maximum of 480 per day) during the first seven years of sediment removal, followed by the truck trips during operation and maintenance of the Reservoir. These sediment removal activities would create nuisance impacts to nearby residences. Residents along the truck routes or disposal sites would be disturbed by the increased truck traffic along roadways, as well as by the noise and emissions from the trucks.

Historic Properties. While no known resources are within the Project APE, five cultural resources are documented within a quarter mile of the Littlerock Reservoir, and the area is considered sensitive for prehistoric and historical cultural resources. Due to various surface conditions or changes over time, not all cultural resources are expressed on the surface. Any project with ground disturbing components has the potential to directly impact unanticipated cultural resources. The only potential for direct impacts to cultural resources during the construction phase of the Project is from unanticipated or inadvertent cultural resource discoveries.

Parks, National and Historical Monuments, and Similar Areas. Littlerock Reservoir is located within the Santa Clara/Mojave Rivers Ranger District of the ANF. The portion of the Project area that is located on NFS lands would also be within the newly designated San Gabriel Mountains National Monument. A new management plan will be developed to establish goals and policies for the NFS lands within the San

Gabriel Mountains National Monument. The management plan for the monument would be incorporated as an amendment to the existing USDA Forest Service Land Management Plan, and would not affect existing permitted and authorized special uses within the ANF such as Littlerock Reservoir.

Air Quality. The Project would have to comply with all rules and regulations applicable at the time of the Project's construction and operation and would implement the air quality project commitments (see Appendix A of the EIS/EIR) that would reduce air pollutant emissions during Project construction and operation. All of the average daily and annual construction emissions are estimated to be below the AVAQMD emissions thresholds, except for average daily PM10 emissions during the excavation phase. All operation air pollutant emissions impacts are well below AVAQMD emissions thresholds. Toxic air pollutant emissions are located far from sensitive receptors or spread out over a large area and so Project emissions of toxic air pollutants would not create substantial concentrations at sensitive receptor locations.

Global Climate Change. GHG emissions for the Project are estimated to be well below AVAQMD GHG emissions thresholds. The Project would conform to GHG emissions reductions policies, goals, and regulations.

Table 4-3. Impact Analyses for Human Use Characteristics in EIS/EIR

Issue Area	Applicable EIS/EIR Section		
	Proposed Project	**Alternative 1**	**Alternative 2**
Water supply and conservation	Section C.7.5.1	Section C.7.5.2	Section C.7.5.3
Aesthetics	Section C.11.5.1	Section C.11.5.2	Section C.11.5.3
Traffic/transportation patterns	Section C.10.5.1	Section C.10.5.2	Section C.10.5.3
Noise	Section C.8.5.1	Section C.8.5.2	Section C.8.5.3
Safety	Section C.6.5.1	Section C.6.5.2	Section C.6.5.3
Recreation	Section C.9.5.1	Section C.9.5.2	Section C.9.5.3
Recreational/ commercial fisheries	Not relevant to this EIS/EIR		
Navigation	Not relevant to this EIS/EIR		
Energy needs	Section E.1.2	Section E.1.2	Section E.1.2
Mineral needs	Not relevant to this EIS/EIR		
Economics	Not relevant to this EIS/EIR		
Food & fiber production	Not relevant to this EIS/EIR		
Farmland	Not relevant to this EIS/EIR		
Property Ownership	Section C.9.5.1	Section C.9.5.2	Section C.9.5.3
Land Use	Section C.9.5.1	Section C.9.5.2	Section C.9.5.3
Historic properties	Section C.4.5.1	Section C.4.5.2	Section C.4.5.3
Parks, national and historical monuments, and similar areas	Section C.9.5.1	Section C.9.5.2	Section C.9.5.3
Air quality	Section C.2.5.1	Section C.2.5.2	Section C.2.5.3
Global climate change	Section C.2.5.1	Section C.2.5.2	Section C.2.5.3

Source: Littlerock Reservoir Sediment Removal Project EIS/EIR (May 2016)

4.4 Cumulative Impacts *(Section 6.0 of the EA 404(b)(1) Guidelines Evaluation)*

The cumulative analysis for the proposed Project is fully discussed in the EIS/EIR Section D. Section D includes a list of cumulative projects (see EIS/EIR Section D, Table D-1 and Figure D-1) that have been completed, are in the process of construction, or are currently under review within a geographic area sufficiently large enough to provide a reasonable basis for evaluating cumulative impacts. These cumulative projects are under the jurisdiction of one of several jurisdictions: USFS, PWD, California Department of Transportation, County of Los Angeles, and the City of Palmdale. A summary of the cumulative impacts of the Project per resource area is provided below. Please refer to the EIS/EIR Section D for the fully discussion of the Project's cumulative effects.

Air Quality and Climate Change. Due to the physical separation of other cumulative projects from the main emissions source area for the Project, the incremental effect of the Project's air pollutant emissions when combined with the construction and/or operation emissions from other projects would be considered less than significant. Given that the air toxic emissions impacts from the Project would be very low at any one given sensitive receptor location, they would not be of a magnitude to contribute a significant incremental effect to cumulative health impacts. The Project's contribution to cumulative air quality impacts would not be cumulatively considerable.

Biological Resources. The Project's contribution to biological resource impacts in combination with past and reasonably foreseeable projects would be cumulatively considerable. Each of the cumulative impact discussions for Impact BIO-1 through Impact BIO-26 (see EIS/EIR Section D.4.2.2) describes the SPCs that would be implemented to minimize the incremental adverse effect of the Project. With incorporation of the identified SPCs, the Project's contribution to cumulative impacts to biological resources would be reduced to a level that is less than significant.

Cultural Resources. With regard to previously undetected cultural resources, the Project would not contribute an incremental impact within the region that would be cumulatively considerable. However, the Project would have the potential to combine with impacts from past, present, or future projects to result in a cumulative impact to human remains.

Geology and Soils. As no structures would be built under the Project, no cumulative impact for exposure of structures to geologic hazards would occur. SPCs would ensure that unstable slope conditions would not be produced under the Project. Conformance with existing laws, including the Clean Water Act, would ensure that no off-site erosion would occur under the Project. Other projects, both within the Project area and downstream of the Project area, would include soil-disturbing activities; however, soil disturbance under the Project would contribute an incremental cumulative effect that was negligible.

Hazards and Public Safety. Although other projects in the area of potential cumulative effects could result in accidental spills of hazardous waste that could contaminate water resources or expose the public to hazardous materials, the Project would result in negligible impacts with respect to releases of hazardous waste. Similarly, the Project impacts related to risk to public health (such as Valley Fever or unsafe highway conditions) are negligible. The sediment in Littlerock Reservoir is not known to harbor the fungus associated with Valley Fever, and fugitive dust would be minimized in conformance with existing air quality regulations. These impacts would not combine with adverse effects from similar projects to form a cumulative impact.

Hydrology. Given the Project's negligible effect on groundwater levels and flow patterns, and the use of best management practices to minimize effects on erosion and siltation, the Project would not contribute an incremental impact on hydrology and groundwater that would be cumulatively considerable.

Noise. While periodic activities at the PWD site could combine with identified cumulative projects (only if activities overlap), any increase in ambient daytime noise levels are considered negligible. With the inclusion of the SPCs described above, the Project's incremental contribution to a cumulative noise impact would be less than significant.

Recreation and Land Use. If the construction and maintenance phases of the Project were to occur concurrently with the construction of other development projects, the incremental disturbance effect of the Project to adjacent land uses would be cumulatively considerable. Adverse cumulative impacts resulting from the Project would be reduced through the Project's air quality and noise SPCs (see Table 5-1 below, and EIS/EIR Appendix A). However, given the proximity of existing residences to the truck routes and sediment storage/disposal sites, and the proximity of other proposed development to these same land uses, the Project's contribution to a cumulative land use disturbance would be significant and unavoidable.

Transportation and Traffic. During the initial sediment removal phase, the Project would contribute an incremental effect to traffic impacts that, when combined with the potential traffic impacts of other projects, would be cumulatively considerable. With regard to a the Project's incremental effect on emergency vehicle access and roadway damage, the implementation of traffic mitigation measures and SPCs (see Table 5-1 below, and EIS/EIR Appendix A) would reduce the Project's cumulative contribution to a less than significant level.

Visual Resources. Given that Project activities at the PWD site would not result in permanent impacts to the visual landscape, the Project would not contribute an incremental effect to an overall cumulative impact on visual resources.

Water Quality and Resources. It is possible that other projects within the area of potential cumulative effect could violate water quality standards or waste discharge requirements, or contaminate groundwater through the introduction or mobilization of pollutants. Examples of projects that could result in these potential impacts include active mining operations and new highway construction. However, the incremental effects associated with the Project for water quality degradation are negligible.

Wildfire Prevention and Suppression. In order to avoid adverse impacts, the Project would implement SPCs to prevent wildfire ignition and to immediately respond to a wildfire (see EIS/EIR Appendix A). The incremental impact of the Project on wildfire prevention and suppression would be mitigable to a level that is less than significant.

5.0 Evaluation of Compliance with 404(b)(1) Guidelines *(Section 7.0 of the EA 404(b)(1) Guidelines Evaluation)*

Table 5-1 incorporates the checklist information relevant to Section 7.1 of the Environmental Assessment 404(b)(1) Guidelines Evaluation. The information summarized in Table 5-1 includes the impacts identified for specific resource areas, SPCs that have been incorporated into the Project, and the residual effects following implementation of SPCs (mitigated).

Table 5-1. Factual Determinations of Compliance with Section 404(b)(1)

Summary of Impacts	Mitigation or SPC	Effects following mitigation
Physical substrate		
▪ Proposed Project and Alternative 1 ▪ Construction of grade control would result in soil disturbance. Excavation and grading would destabilize natural or constructed slopes.	▪ SPC GEO-1: Geotechnical Investigation	Less than significant
▪ Alternative 2 ▪ If future activities require Dam removal, substantial downstream erosion and sedimentation would result.	None	Significant and unavoidable
Water circulation, fluctuation, and salinity		
▪ Proposed Project and Alternative 1 ▪ Sediment excavation and construction of grade control would alter Little Rock Creek flows within the boundary of the Reservoir. ▪ Any stockpiled sediment at the PWD disposal site would divert flow in the ephemeral watercourse.	▪ SPC HYDRO-1: Fill From Reservoir Excavation Will Not Be Placed in Stream Channels	Less than significant
▪ Alternative 2 ▪ Future loss of the Reservoir's water storage capacity would increase the flood hazard downstream of the Dam.	None	Significant and unavoidable
Suspended particulate/turbidity		
▪ Proposed Project and Alternative 1 ▪ Construction of grade control would create soil disturbance within the reservoir. ▪ Stockpiled sediment at the PWD disposal site could be eroded by stormwater runoff.	▪ SPC GEO-1: Geotechnical Investigation ▪ SPC HYDRO-1: Fill From Reservoir Excavation Will Not Be Placed in Stream Channels	Less than significant
▪ Alternative 2 ▪ If future activities require Dam removal, substantial downstream erosion and sedimentation would result.	None	Significant and unavoidable
Contaminant availability		
▪ Proposed Project and Alternative 1 ▪ No impacts to water quality, as sediment in Reservoir is mostly free of contaminants and the level of contamination for any detected contaminants being extremely low. ▪ Project could result in accidental release of hazardous materials or discharge of contaminated water associated with dewatering activities.	▪ SPC WQ-1: Prepare Spill Response Plan ▪ SPC HYDRO-1: Fill From Reservoir Excavation Will Not Be Placed in Stream Channels	Less than significant
▪ Alternative 2 ▪ Future activities that require sediment excavation and Dam removal may create substantial impacts to water quality.	Mitigation similar to measures recommended for the proposed Project would be required to reduce impacts.	Dependent on the adequacy of mitigation.
Aquatic ecosystem and organism		

Table 5-1. Factual Determinations of Compliance with Section 404(b)(1)

Summary of Impacts	Mitigation or SPC	Effects following mitigation
▪ Proposed Project and Alternative 1 ▪ Construction may impact State and federal waters through removal of riparian vegetation, discharge of fill, degradation of water quality, and increased erosion and sediment transport. ▪ Ground-disturbing activities in Project area could contribute to direct loss of a candidate, sensitive, or special-status species or to a loss of habitat.	▪ SPC BIO-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities ▪ SPC BIO1b: Worker Environmental Awareness Program ▪ SPC BIO-2: Prepare and Implement a Weed Control Plan ▪ SPC BIO-5: Conduct Preconstruction Surveys for State and federally Threatened, Endangered, Proposed, Petitioned, and Candidate plants and Avoid Any Located Occurrences of Listed Plants ▪ SPC BIO-6a: Conduct Surveys and Implement Avoidance Measures ▪ SPC BIO-6b: Conduct Clearance Surveys and Construction Monitoring ▪ SPC BIO-6c: Seasonal Surveys During Water Deliveries ▪ SPC BIO-14: Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC BIO-15: Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC BIO-16: Conduct Surveys for Coast Range Newts and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC BIO-17: Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC AQ-2: Fugitive Dust Controls ▪ SPC AQ-5: Reduce Off-Road Vehicle Speeds ▪ SPC HYDRO-1: Fill From Reservoir Excavation Will Not Be Placed in Stream Channels ▪ SPC WQ-1: Prepare Spill Response Plan	Less than significant
▪ Alternative 2 ▪ If future activities require sediment excavation and Dam removal, substantial impacts to aquatic ecosystems and organisms would result.	Mitigation similar to measures recommended for the proposed Project would be required to reduce impacts.	Dependent on the adequacy of mitigation.
Proposed disposal site		
▪ Proposed Project and Alternative 1 ▪ Sediment storage at PWD property may affect an onsite ephemeral stream.	▪ SPC HYDRO-1: Fill From Reservoir Excavation Will Not Be Placed in Stream Channels	Less than significant

Table 5-1. Factual Determinations of Compliance with Section 404(b)(1)

Summary of Impacts	Mitigation or SPC	Effects following mitigation
▪ Alternative 2 ▪ Disposal sites for future sediment excavation/Dam removal would impact onsite ecosystems.	Mitigation similar to measures recommended for the proposed Project would be required to reduce impacts.	Dependent on the location of sites and the adequacy of mitigation.
Cumulative effects on the aquatic ecosystem		
▪ Proposed Project and Alternative 1 ▪ Past actions such as the construction of Littlerock Dam and natural events including droughts and fire have resulted in considerable cumulative effects to candidate, sensitive, or special-status species in the region.	▪ SPC BIO-1a: Provide Restoration/Compensation for Impacts to Native Vegetation Communities ▪ SPC BIO1b: Worker Environmental Awareness Program ▪ SPC BIO-2: Prepare and Implement a Weed Control Plan ▪ SPC BIO-5: Conduct Preconstruction Surveys for State and federally Threatened, Endangered, Proposed, Petitioned, and Candidate plants and Avoid Any Located Occurrences of Listed Plants ▪ SPC BIO-6a: Conduct Surveys and Implement Avoidance Measures ▪ SPC BIO-6b: Conduct Clearance Surveys and Construction Monitoring ▪ SPC BIO-6c: Seasonal Surveys During Water Deliveries ▪ SPC BIO-14: Conduct Surveys for Southwestern Pond Turtle and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC BIO-15: Conduct Surveys for Two-Striped Garter Snakes and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC BIO-16: Conduct Surveys for Coast Range Newts and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC BIO-17: Conduct Surveys for Terrestrial Herpetofauna and Implement Monitoring, Avoidance, and Minimization Measures ▪ SPC AQ-2: Fugitive Dust Controls ▪ SPC AQ-5: Reduce Off-Road Vehicle Speeds ▪ SPC HYDRO-1: Fill From Reservoir Excavation Will Not Be Placed in Stream Channels ▪ SPC WQ-1: Prepare Spill Response Plan	Less than significant
▪ Alternative 2 ▪ If the Dam must be removed, cumulative biological resource impacts would be greater and encompass a wider area than the Project.	Mitigation similar to measures recommended for the proposed Project would be required to reduce impacts.	Dependent on the adequacy of mitigation.

Table 5-1. Factual Determinations of Compliance with Section 404(b)(1)		
Summary of Impacts	**Mitigation or SPC**	**Effects following mitigation**
Secondary effects on the aquatic ecosystem		
▪ Proposed Project and Alternative 1 ▪ Construction would not substantially interfere with the movement of any native resident migratory fish, reptile, or amphibian species. ▪ Removal of non-native fish from Reservoir would improve habitat for arroyo toad and other native species.	None	Beneficial impact
▪ Alternative 2 ▪ Riparian vegetation would likely recruit along the margins of the active channel and may eventually develop into a mature riparian community. Project area may develop characteristics that would support habitat for arroyo toad and other species associated with riparian vegetation and floodplains. ▪ Expanded construction activities from future removal of Dam would impact sensitive species above and below the Dam.	Mitigation similar to measures recommended for the proposed Project would be required to reduce impacts from future Dam removal.	Short-term beneficial impacts; Long-term significant impacts

Source: Littlerock Reservoir Sediment Removal Project EIS/EIR (May 2016)

6.0 Findings of Compliance with the Restrictions on Discharge

The EIS/EIR identified and evaluated the Littlerock Reservoir Sediment Removal Project, which included the proposed Project as well as two alternatives to the proposed Project. The Reduced Sediment Removal Intensity Alternative would reduce the intensity of construction activities through an extended construction schedule, while the No Action/No Project Alternative would allow for continued sediment accumulation upstream of Littlerock Dam with no sediment removal. Based on information presented in Sections 4.0 and 5.0 of this 404(b)(1) Evaluation Summary, the Reduced Sediment Removal Intensity Alternative (Alternative 1) has been identified as the LEDPA. Factors supporting this determination include:

- Alternative 1 would reduce daily PM10 emissions during excavation and construction;
- Alternative 1 would reduce the number of daily truck trips on roadways;
- Alternative 1 meets the Project's overall purpose and need and would incorporate the same Project SPCs to proactively protect sensitive resources at the Reservoir, reduce environmental impacts associated with Project activities, and to ensure safety during Project construction; and
- Alternative 1 would not create new significant impacts that would require further mitigation.

7.0 References

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